

Sustainability at the Indigenous—West Boundary:
The case of a boundary organization working with the Waorani of the Pastaza
Province

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“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987).”

Introduction

Drivers of international development that perpetuate the failure to recognize asymmetries between bounded groups, cultures and intellectual domains are intrinsically unsustainable. It is symptomatic of this mechanism that international sustainable development solutions designed external to systems where they intervene impose asymmetries on those systems. If development is a process of change, what are the drivers of change? And when the drivers of change are within ones’ control, a fundamental question to ask is: who gets to choose, how and what change occurs?

The Indigenous-West¹ (I-W) boundary is a physical and conceptual space where two very distinct cultures (mindsets, histories, ontologies) converge. For development work to be sustainable for actors on both sides of the boundary, the boundary has to be acknowledged, then can the classical asymmetries that dominate I-W relations be made visible and addressed. This work is empirically rooted at a field school (FS) in Amazonian Ecuador. The FS is a socially embedded boundary organization and family business with a 20-year history. This study examines the relationships, boundary work, and sustainable development occurring there.

Sustainable development is an applied field that urges practitioners to bridge the knowledge-action gap (Clark et al., 2016; Kates, 2016), it relies on the transdisciplinary navigation across knowledge domains (Kates, 2017; Messerli et al., 2019). Boundary organizations have been proposed as a useful way to bridge this gap. However, boundary organizations have primarily arisen at the science-policy interface and typically in a US context (Gustafsson & Lidskog, 2018 and Clark et al., 2016). Indigenous knowledge is increasingly incorporated into the ideals of sustainable development (Kealiikanakaoleohaililani & Giardina, 2016; Kristjanson et al., 2009; Pohl et al., 2010), especially in light of the United Nations Sustainable Development Goals and the 2030 Agenda (Messerli et al., 2019). However, the study of boundary work, and more specifically boundary workers along the I-W boundary, remains largely understudied with few exceptions. For example, Pohl et al. 2010 and Reid et al., 2009 orient their work in the developing world and focus on coproduction of knowledge between sustainability scientists and actors involved in agriculture and pastoral projects respectively.

International development that transcends diverse cultural boundaries is not classically nor explicitly defined as boundary work. However, even though the boundary is not explicitly defined—it exists. This study defines development work explicitly in terms of the boundary work occurring along the I-W interface and specifically in terms of the work that boundary individuals themselves conduct. This represents a departure from the classical science-policy “boundary management” elicited by previous scholars (Cash et al., 2003) and it takes up where Guston left off when he stated: “this work finds that the blurring of boundaries between science and politics, rather than the intentional separation often advocated and practiced, can lead to more productive policy making. (Guston, 2001).” Guston advocates

¹ Note that “West” here is represented by the market economics practiced and disseminated by states including in the US, Europe, China and Ecuador, by institutions such as the IMF and World Bank and Higher-Education Institutions—as well as the objects that result from affluence; summarily arising from within the techno-scientific culture and as a result of the separation of humans from nature—which generates mindsets that categorize elements as pure and naturalized rather than ambiguous.

for blurring boundaries—he also warns of the risks of doing so and recommends the necessary separation of science from non-science. This separation of science from non-science is how boundary work was previously conceived by Gieryn who argued it was a protectionist move on behalf of scientists (Gieryn, 1983). As such, Guston goes on to elaborate that boundary organizations, boundary objects and standardized packages are ways to protect the integrity of science from the “politicization of science” and the “scientification of politics” (Guston, 2001), that they stabilize the boundary and thus, manage the tensions that arise at this interface (Clark et al., 2016).

Primary to understanding the I-W boundary, is acknowledging that it exists. On both sides of this boundary are systems, cultures and people who are foundationally distinct. The peril of not recognizing this boundary is in assuming that the “other” is the same, just not yet ‘as developed.’ Recognition of the boundary is the first step in the creation of a space where interventions can be worked out and stabilized (Figure 1).

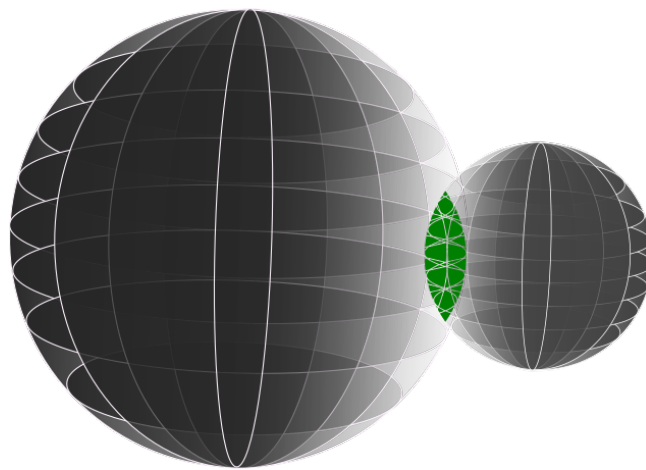


Figure 1: Conceptual schematic of the Indigenous West boundary

The actors who traverse the I-W boundary at the FS include Indigenous Amazonians, Western Academics and Cultural Hybrids. In this research, the term Cultural Hybrids refers to individuals who result from bridging distinct cultural domains. The actors in this study are embedded in, and thus in relation to, the encompassing Ecuadoran state, and more broadly but equally influential, the global economic system.

At the time of this writing, the FS has extended through partnership with the Waorani of one community (hereafter referred to as Wao C1) a field school/satellite research center into Waorani territory. This field school is intended to house international students and researchers who come both on independent grants and study abroad with the mutual goals of partnership development and economic advancement. Another satellite research center at Wao C2—a few hours further down river—is in the process of being built. Questions of autonomy, agency, and ability underpin the theory of sustainable development and increasingly rely on partnerships. The partnerships that facilitate boundary work are the focus of this research.

Complexity in transition

The meta-phenomenon this study points to is the trend of increasing numbers of Indigenous people entering the global system. The challenges are myriad: populations are, and have been, migrating—

entering a different context in response to no longer living a traditional way of life—they want employment, access to hospitals and schools, tools and sources of food outside their territories. The extent of the benefits and consequences of this transition are still being accounted for. One benefit to the transition is that it offers access to education, medicine, and increased quality of life (Alfredo, personal communication, 2019; E. Jean, personal communication, 2019). Consequently, migration has been found to be a contributing factor to language loss (Portes & Hao, 1998). And in the case of the Waorani, language is critical to cultural identity (Enrique and Alfredo, personal communication, 2019).

In the introduction to Karl Polanyi's "The Great Transformation" Joseph Stiglitz talks about the erosion of social capital, how societies "evolved ways of caring for their poor, for their disadvantaged..." he goes on to talk about the rise of the industrial era and that "rapid transformation destroys old coping mechanisms, old safety nets, while it creates a new set of demands, before new coping mechanisms are developed" (Polanyi, 1971). In later chapters, Polanyi makes the case that the separation of land and labor—over centuries in industrializing England, occurred in a matter of years in the colonial era—and was a critical part of making the market function. And to this point, he states a precondition that, with respect to the rise of the market mechanism in the colonial era, "in every and any case the social and cultural system of native life must be first shattered." There are similarities to be acknowledged and learned from between the societal transformations Polanyi wrote about and the transitions along the I-W boundary today. Not all Indigenous societies are equal yet may share a similar experience of being overpowered by this boundary to then undergo a transformation from land and kin-based societies to the state-market model.

The market force is an important driver in the diffusion of objects across the I-W boundary. In the case of the Waorani, the Ecuadoran state and the international petroleum market has influenced the asymmetrical diffusion of "cowode," or outsider culture, across this boundary. Historically, it's a boundary that is sharp, enforced and doesn't connote permeability nor is it celebrated and traversed bi-directionally. The diffusion of the West across this boundary has brought with it many changes and transitions for the Waorani—historically, there has been a lot of mistrust. Changes to Wao society include language loss, breakdown of family relations and even robberies in the territory (Alfredo, personal communication, 2019). As well, there are complexities that make interpreting this boundary difficult—some Waorani have assimilated and encourage the development aligned with state and market forces (primarily mining and petrol extraction)—this development has brought some positive benefits, also many negative ones. Likewise, other Waorani resist development that runs the risk of harming their land, but still want economic advancement and to partake in the global society. Still other Waorani desire to remain completely uncontacted. A key distinction is that in the case of the Waorani intersecting at the FS, the notion of cultural preservation is important but is not indicative of cultural purity—rather it allows for a transformation on their terms and for the maintenance of critical facets of their culture and livelihood—primarily, connection to their language and land. This nuance—the agency to define how and what kind of change occurs—is a key addition to sustainable development when it includes acknowledging the boundary.

Asymmetries in scale

As Mair and Seelos discuss Thomas Merton, "social life is not as simple as it first seems" (Seelos & Mair, 2011). They criticize the social enterprise sector for focusing too heavily on success stories and simple models to reach success (such as the SCALERS model—standing for; "staffing, communications, alliance-building, lobbying, earnings generation, replication and stimulating market forces (Bloom & Chatterji,

2009)”) with the consequence that failure to scale is a sign of failure. Importantly, the question becomes: when the focus is on a mechanized view of organizational scaling—what is left out?

The upward and to the right arrow of a scalable solution from locally successful to regional—or even globally sensational (as in the rise of microlending institutions) is reasonably desirable. It’s dominating the social innovation space, so much so that the impact investing market—a term originally coined in 2007—is now estimated at 502 billion USD (Mudaliar & Dithrich, 2019).² Some social innovations are well-suited for scaling and may positively impact hundreds of millions of people. These innovations, like emissions trading or microfinance (Deiglmeier & Greco, 2018), industries with notably quantifiable growth metrics, will be vastly different from a social innovation that focuses on capacity building, or “contributing to the social and intellectual diversity of civil society (Seelos & Mair, 2011).”

Even this assessment doesn’t go far enough to reach the complexity of social life because it assumes hegemonic control of the global market system, one which overarchingly assumes the paradigm of “growth is good” and is fascinated by numbers and the concomitant quantification of metrics of success. A system that has also notably destroyed many small scale societies, eliminated diversity and traditional ways of life (Polanyi, 1971; Singh et al., 2019). Some scholars drill the importance of capacity building and leadership to organizational scaling (Gillespie, 2004), but rarely is there space for the ambiguity often experienced at the actual level of relationships and trust building that is implicit in many organizational endeavors. And, as in the case with the Waorani of Wao C1 and Wao C2, the beneficiaries are in some crucial respects still insulated from the global market system—why should the norm be that communities and small organizations hustle to conform to a system that will in all likelihood destroy them? These assumptions are nearly unchecked in the literature on scalability perhaps because the ubiquitous nature of the global market paradigm makes it all but invisible. Noam Chomsky writes: “the person who claims the legitimacy of the authority always bears the burden of justifying it. And if they can’t justify it, it’s illegitimate and should be dismantled (Chomsky, 2002).” In this case, the ‘person’ is the market.

Understandably, scaling positive impact is desirable. The line of stress comes from the urgency felt (Deiglmeier & Greco, 2018.; Seelos & Mair, 2011; Singh et al., 2019; Uvin et al., 2000) where the call for sustainable development goals are largely framed as global problems. Despite the fact that sustainability science is known for being a “place-based” science (Kates, 2017). Even so, the desire trajectory seems to be: design a good social intervention, implement it at a pilot stage, use the success of this stage to inform policy and procedures locally and then scale up and out to regional and international levels (Singh et al., 2019). This model of scaling is possible for some, but where does that leave the rest? Notably, relegated as illustrated by the following residual categories, to: “surrogated to local solutions (Singh et al., 2019)” or “remain little more than islands of excellence (Uvin et al., 2000).” This sentiment pits workable solutions as let-downs if they don’t reach millions of people. What if the problem with scaling to global solutions were a flaw with hegemonic control of a market economy—and not the failure of successfully local solutions to have global reach?

The question of scale is highly relevant to this work as support to the Waorani relies on external funding. Because of diversity in perspective and dependence on context, evaluation of a development solution as successful, may be an elusive task. Conventional indicators of success tend to rely on quantifiable metrics (Hulme, 2000). And, for many global actors, success is categorized in terms of a project’s ability

² To put that into perspective, as of March 2020, Facebook was worth 446 billion USD (<https://www.macrotrends.net/stocks/charts/FB/facebook/net-worth>).

to scale-up. Community driven solutions may focus on pathways to meeting immediate needs and integrating unique cultural markers. And local solutions may or may not be desirable or functional at large scale—and yet, are still highly valuable in their originating context.

This asymmetrical understanding of success may be a barrier to a development rather than a boon. When Schumacher wrote “Small is Beautiful” it seems that is precisely the point he was trying to make. The categorization of “what is economic and what is uneconomic” leaves little room for ambiguity (Schumacher, 1973). Organizations and communities reliant upon external funding thus, may find themselves in a catch-22: prove scalability or bust. Unfortunately, the pressures caused by market forces and the obsession with growth as a business model doesn’t necessarily recognize the value in evaluating scalability in terms of depth and relationships. As Uvin et al., relate “impact, finally, is not only about the number of beneficiaries or even the specific policy changes won, but also about local capacity built, intersectoral contacts developed, norms of trust and cooperation strengthened, and democratic space and social diversity reinforced (Uvin et al., 2000).” Scaling this type of positive impact—relationships built on trust and cooperation, connection and capacity in place—the type of scaling that takes time is what I’m calling “relational/depth scaling.” This type of scaling has an impact, as we’ll see, and its key to the development process at the boundary FS.

Boundaries of development

Science and policy domains represent a distinct boundary that is arguably cultural—they each operate within a different system of needs, objectives and time horizons. These domains, however, have the same cultural genesis and worldview that generate similar mindsets, even if notably distinct in some scalarly ways. The worldview that dominates the science-policy domain is characterized by a Euro-American techno-scientific culture and generally rewards rational, linear thinking, quantifiable, measurable, reproducible and standardized data to advance civilization (Scott, 1998, Nicolescu, 2014). In contrast, many small-scale Indigenous societies are dominated by relationality, or the concept of the plural self (R. Lundin, personal communication, 2019). The idea of the plural self is described by John Protevi when he discusses Bruce Wexler’s radical relationality in this way: “being human is composed of relations; we do not ‘have’ relations, but we are relations all the way down (Protevi, 2010).” In this case, when relationality is the mindset—in contrast with quantification—it matters more *who* took the fish than *how many* they took (R. Lundin, personal communication, 2019).

Small-scale societies³ are increasingly embedded in the larger global context. This embeddedness has a dual-dynamic: the global economic system encroaches on these communities in myriad and increasing ways while concomitantly, many small-scale societies reach towards this global system in myriad and increasing ways. As Indigenous people face this approaching boundary—will they be subsumed as Polanyi warned? Or will their cultures preserve some amount of autonomy?

Bourdieu writes about demarcation, discretization and categorization, “what is at stake in the struggles about the meaning of the social world is power over the classificatory schemes and systems which are the basis of the representations of the groups and therefore of their mobilization and demobilization...” (Bourdieu, 1984).” The power of naming is a salient conversation for boundary work and it’s a debate that goes back to the protectionist argument for being clear about what is science, what is economics

³ I do not mean to imply an essential nature to either the West nor to Indigenous cultures writ large—all cultures are in transition and express infra-cultural diversity. In general, however, the differences between Indigenous cultures and the West occur at the level of worldview, ontology, mindset, geography, history, language and political economy.

and so forth. The need to demarcate between what constituted science and non-science brought with it socially constructed categories that carry inclusion and exclusion criteria. Boundaries that get created between two categories can leave little room for ambiguity, likewise, sharp boundaries by definition are impermeable. Categories have been written about extensively by people such as Popper, Merton and Kuhn, Bourdieu and Foucault (Gieryn et al., 1995). As Bowker and Star discuss the classifications that get formed between the boundaries that separate organizations define what gets included and valued, and what gets left out (Bowker & Star, 1999). Classifications and standardizations that are rigid create residual categories (Leigh Star, 2010). Residual categories are the spaces of Haraway's monsters and cyborgs—places where the marginalized of society fend for expression. These rigid categories can be juxtaposed with permeable boundaries where actors may fluidly and perhaps fluently navigate a space created between two categories or disciplines as it were. Similar to what Scott reminds us of in "Seeing like a State," scale is important—in simplifying a unit of analysis for convenience of measure, important details tend to get lost (Scott, 1998). Thus, the importance of having a permeable boundary and creating objects that have, as Star calls "interpretive flexibility (Leigh Star, 2010)" is what makes the promise of coproduction across domains promising. Coproduction can level the gradient between the boundaries making a more horizontal exchange within the hybrid domain. Typically applied in the science and policy arena, Sheila Jasanoff writes about coproduction in terms generating knowledge at the boundary (Jasanoff, 2004). What makes this study unique is that the objects being coproduced at the boundary are between very distinct cultures—not organizations or knowledge domains—rather, systems of domains.

The power of naming is relevant, perhaps of greater relevance today than being ex-categorized or put outside the "in" boundary of science or policy (or whatever other category that gains power from its name), is the reality of being subsumed by a more dominant and overpowering category. In either scenario—the result is the same: being overpowered. In the dominion of the Western techno-scientific market culture, is there room for other categories/cultures of existence?

If we go back to where we left off with the latter-half of Guston's comment: "[boundary work] can lead to more productive policy making (Guston, 2001)." In this case, it's not only policy-making that is interesting and productive. In framing boundary work as critical and implicit to international sustainable development, there is potential for more. This 'more' includes productive space-sharing, horizontal, hybrid development, the creation of hybrid culture and a flourishing space of increased diversity, activity and sustainability where both not only exist, but their co-existence gives rise to newness. The place where coproduction means knowledge creation (Jasanoff, 2004). Borrowing a term from Ecology, if we imagine Eugene Odum's ecotone where two distinct boundaries come together, at their intersection is a flourishing ecosystem. This ecotone exhibits edge effects—where mixing occurs—it's a term that the business world has innovatively borrowed from, likewise, Polanyi wrote about these in terms of ports and pathways of trade—as places where cultures mix.

I argue that the FS is such a place—in the midst of the tensions and ambiguity—it is like an ecotone, a physical space where two boundaries converge—both entities on either side of the boundary retain who they are—and the space created at their joining is a place where hybrid thoughts, hybrid solutions, hybrid people and ostensibly hybrid cultures are created. Critical to this co-presence is acknowledging the boundary and creating space for permeability and the bi-directional traversing of boundary individuals. In this paper I aim to show the importance of cultures who simultaneously keep their identity, relate horizontally in a classically asymmetrical development landscape, and find freedom in the ambiguity of the myriad tensions, as Bowker and Star interpret Simone de Beauvoir's "Ethics of Ambiguity" urges.

Cultural geography and historical context of the case

The FS operates at the Indigenous-West (I-W) cultural nexus. It's a bio-cultural research center, language school and family business bridging significantly diverse geo-cultural boundaries and histories. The social context is affected by the political and economic interest on the part of the Ecuadoran State and multi-national oil companies in the significant oil resources of the region. The Waorani territory intersects the Napo, Orellana and Pastaza Provinces and is surrounded by Napo Quichua and other autonomously governed Indigenous groups of Pastaza and the Yasuni National Park.

Waorani culture is influenced by a complex series of interactions with the neighboring and more assimilated Quichua people, Christian missions and Christian organizations, oil companies, and the modern nation-state. The rapid transformation and politicization of Wao territory and culture has its roots in the latter half of the 1960's and it persists today (Long, 2019). In the late 1950's, first contact between the Wao and Christian missions began with the death of five missionaries who attempted to contact the Waorani. Soon after, oil was discovered in the region which sparked a period of road building, forced relocation, contamination of the land and rivers and forced assimilation (Long, 2019; Wierucka, 2015). In the 1990's and 2000's many Indigenous led movements gained power in response to those difficult decades. Protests led to the expansion of rights and territories. Subsequently factions were created leading to a diverse group—some Wao accepted the imposed label of sedentary farmers who assimilated to the city and the promises it extolled—others who resisted it, remain uncontacted to this day (Long 2019, Kimerling, 2012).

There is much complexity involving the Wao and the petroleum industry. For the Wao who received funding in exchange for oil, there are obvious financial benefits, but the picture hasn't always been perfect. There have been spills. Up until the 1990s, Texaco—now Chevron—dumped “nearly twice as much oil as the Exxon Valdez from the main pipeline alone, mostly in the Amazon basin. Spills from secondary pipelines, flow lines, tanks, production stations and other facilities were also frequent, and continue to this day” said Judith Kimerling (Kimerling, 2012). This isn't to say that oil is spilling to this day all over the Amazon. The complexity exists for those who have said no to oil as well. As expressed by one community member to me, there was the perception that the Wao who resist petrol extraction in their blocks don't benefit from government assistance in the same way (Enrique, personal communication, 2019).

The communities who resist state oil development in their territories reside primarily in the Pastaza Province in a network of 17 communities. Despite fighting tremendous odds, over the course of this short history, the Wao who choose alternate forms of development in alignment with their cosmivision are still fighting. The alternate forms of development proposed are typically in the tourism sector. For those who don't migrate permanently to town, options for economic advancement outside of mineral and petroleum extraction are almost non-existent.

The factions who maintain their position against state and market driven oil-development recently won a historic case against the Ecuadoran government (Riederer, 2019). Currently, this struggle is even more acute as assimilation of the youth to the lure of the modern nation state and the market increases. These communities seek ways to develop on their own terms and to maintain their language, land and cultural values. They want aspects of the market world—but not at the expense of the health of their land and cultural autonomy.

The FS's ties to the Indigenous communities of Pastaza are rooted in Lundin's family history. After World War II, his father George Lundin studied to be a doctor hoping to be a medical missionary in

China. When the five missionaries were killed by the Waorani in 1956 he decided to go to the town of Shell, Pastaza to work as a medical missionary. Since 1961 he provided health care to local Quichua and Shuar families. Also, during this time, the American Anthropologist Norm Whitten created the Sacha Runa Foundation, which marketed Amazonian Quichua ceramics to pay for healthcare at the clinic where Lundin Sr. worked. The Dagua family, who now work at the FS, came into contact with the elder Lundin through the clinic. Interest and indirect connections between the North Americans and the Waorani also began at this time. In 1969 when a polio epidemic hit the Waorani, Lundin treated the families who have since become involved with the FS. Finally, in high school Reece Lundin was sent away from Pastaza to study in Quito. During his junior and senior years, he lived with the family of Abe Vanderpuy and Marge Vanderpuy-Saint, the widow of one of the missionaries who had been killed by the Waorani in 1956. When Lundin later co-founded the FS, he drew on his family ties in Pastaza to build links to Quichua and Waorani families there.

The current social context

The I-W boundary at the FS is embedded in a larger political-economic context. Since the 1960s oil boom in Ecuador, a complex interplay between the Ecuadoran government, oil companies, local Indigenous peoples, OPEC, the IMF, the World Bank and other Governments with lending schemes in exchange for oil ensued (Long 2019, Kimerling 2012, and Wierucka 2015). This complex interplay is wrought with political tensions between the state and its Indigenous populations. On the one hand, under the presidency of Rafael Correa in 2007 the Yasuni-ITT (Ishpingo-Tambococha-Tiputini) initiative was proposed to leave almost a billion barrels of oil in the ground in exchange for over 3.6 billion dollars compensation from the international community (Kimerling, 2012)—after only \$200 million was pledged the initiative was dropped. And in 2008, Ecuador changed its constitution to incorporate rights for nature. These innovative environmental legislations are juxtaposed with the high poverty rate and Ecuador's status as 19th among oil rich nations, with 8,273 million barrels of oil under the subsurface (USEIA, 2017). These large oil resources are potent drivers of State economic interests in development. Despite Ecuador's oil resources, they are still taking large loans from the IMF and World Bank: recently the World Bank issued a 500-million-dollar loan (WBG, 2019) and the IMF a 4.2-billion-dollar loan (Valencia, 2019). These large-scale state and transnational development schemes frame one end of the development spectrum. At the other end of the spectrum are pro-poor, micro-oriented approaches to development (Moore & Donaldson, 2016). With practices that include community driven development (Gillespie, 2004), participatory impact assessments (Hulme, 2000), learning as an outcome (USAID Learning Lab, 2017) and the basic-needs development (Stewart, 1985).

The FS is a family business and a research center, it's also becoming a place where economic development for Indigenous people provides an alternative to industrial development. This economic advancement is possible through study abroad programs, from which the concomitant interest and attention generates more projects, jobs and grants that benefit communities. There are a host of actors who's needs are both in balance and in tension with the immediate and larger-encompassing social context. Specifically, the actors intersecting at the FS include lowland Quichua, Achuar, and Waorani Indigenous community members, North American academics, researchers and graduate students, as well as cultural hybrids—people who bridge the diverse contexts through birth, inter-marriage, historical ties, and friendship. During the summer, around a dozen community members, mostly from the extended family or "Ayllu" are employed at the FS in the kitchen, as forest guides and construction workers and language teachers. A handful of non-family member Quichua, Achuar and Waorani are contracted as language teachers as well. The function of the FS as a research center has attracted world-

renown Ecologists, Linguists, and Anthropologists, and thousands of University students over its 20-year history.

Methods

My involvement with the FS gives me a unique entry point to study development at the I-W boundary. Through case study analysis of the FS and the Waorani of the Pastaza Province, I look at the key elements of sustainable development at this boundary and at the pathways to scaling and impact. I rely mostly on primary qualitative data to understand the inter-intra-personal dynamics at this boundary. The relationships and social networks formed along the boundaries of development are the primary unit of analysis.

Interviews, participant observation and historical research are specific tools that have helped me to understand some of my research questions. The research questions that guide this study are:

1. In the case of the Waorani communities intersecting at the FS, what pathways to development do they have access to, what do they choose and why? For them, what is the social historical context that gives rise to the choice between one form of development over another?
2. What are the alternative arrangements to Western-led development solutions that occur at the FS? What are the elements of sustainable development? How does it scale and what impacts does it have?

My role

My research trajectory is affected by my cultural history as a privileged white woman, my being raised on land which belongs to Native Americans who were here prior to colonization and by my over eight years living and working internationally, including over six years as a practitioner of international development in India in the area of tribal land rights. My international development work ranged from small scale development projects with grassroots NGOs and think tanks, to contracting on large projects of the International Finance Corporation. My personal experience working with donors at a pilot level drives my understanding of the “scale-up” mentality. As an engineer, I worked with Engineers Without Borders in El Salvador for a number of years. An experience that highlighted to me the many asymmetries when development solutions are imposed externally. My unique social position is relevant insofar as it describes me as a person who bridges contexts, languages and cultures—and who sees the value in relational as well as quantifiable modes—despite their obvious tensions.

My involvement in this research began when I was virtually introduced to Tomas Ruiz, the PI on a grant that helped fund the extension project to Waorani territory. I was subsequently hired from mid-April 2019 to August 2019 by Ruiz to assist in searching and applying for grants to fund the project, to develop a website, and assist in capacity building. Soon after, I met Reece Lundin, in the Spring of 2019. I applied for additional funds to go to Ecuador to more deeply connect to the reality on the ground. I was in Ecuador for two and a half weeks. While there I met graduate students and professionals, local Quichua people and was on one of the first trips to Waorani territory since the relationship between Lundin and Wao C1 had resulted in the infrastructure to host students the year before. The conversations and questions I engaged in while in Ecuador and working on this project eventually led to this research paper.

Limitations

One limitation of the research is that I conducted fieldwork prior to research design or development of formal research questions. This is a limitation inasmuch as it gives rise to questions about convention

and order of operations for typical applied research. The strength of this approach is that my insight into the case came before I had a research agenda and as a result, my biases perhaps are more visible, allowing for the flexibility of inductive research. Another unconventional aspect of this project is that I have interviewed two of my committee members who are also both involved in the project—Dr. Reece Lundin is a member and Dr. Tomas Ruiz is a co-chair. Sustainability scientists are encouraged to conduct “use-inspired-basic research” or, applied research in context (Kates, 2017), it is not unprecedented that graduate students take up applied projects with their advisors. I’ve chosen to analyze their interviews as though it were data from any other source and be transparent. To that end, I’ve chosen to keep myself visible, and my ideas in the first person. I do this also to protect the participants from any conflict of interest their participation might have otherwise yielded.

What i did

I conducted unstructured interviews while in Ecuador in the Summer of 2019 and throughout the course of the Fall of 2019. I segment the interview participants into three categories that bracket a range of cultural typologies. On one extreme are conversations with distinct Waorani community members—these are community members who themselves are world-bridging Waorani. They were raised in the territory according to their traditional culture, their families and parents especially, are leaders in the bio-cultural movement. Next are the “hybrid” or “boundary” people—they include Reece Lundin and his daughter Ana Lundin. Reece was raised in Ecuador and has spent a lifetime embedded in the social context of Ecuador. He and his wife, Sofia raised their family between Ecuador and the US. Bracketing the other end are the academic researchers and graduate students who converge at the FS. These are people who travel and research in the Amazonian Ecuador studying Linguistics, Ethnobotany and Anthropology.

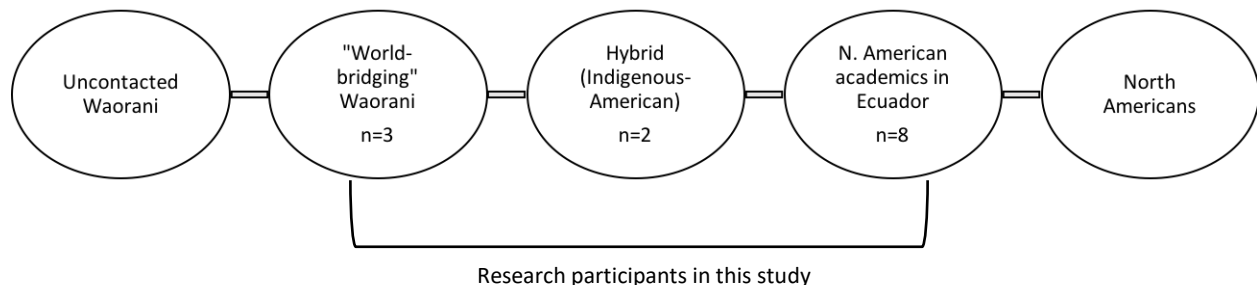


Figure 2: typology of research participants

Interviews

I spoke in depth with a total of 13 different research participants for around 20 hours. I have anonymized the participants names and the names of the communities here to protect any sensitive information from having unintended consequences. In the first case with the Indigenous Wao, I interviewed one woman in depth and two peripherally from Wao C1. From Wao C1 and Wao C2 I spoke with two men in depth. These individuals are unique in that they both represent activist communities and are themselves boundary individuals. They have one foot in the occidental world of “town” and one in their traditional upbringing in the forest. Both of the men I interviewed have traveled extensively in Latin America and other continents as advocates for Indigenous rights. Interviews with these individuals were carried out in Spanish in the territory, as is the case with Irene and Alfredo, from Wao C1, I spoke with Enrique over the phone and had follow-ups with Alfredo over the phone. My Spanish proficiency was crucial to our encounters and to establish trust and common ground. I analyzed the interview

transcripts in Spanish and have pasted quoted segments in Spanish in the Appendix. Worth noting that for me, these initial conversations and subsequent follow-ups mark the beginning of friendship.

The next cohort of participants, “boundary people,” is comprised of Reece Lundin and his daughter Ana. Reece Lundin is a key informant in this study, we had conversations in the US, and in the field over an 8-month period. There are over 11 hours of recorded conversations between us. I also spoke with his daughter Ana, who was raised jointly between Ecuador and the United States. Lastly, I interviewed eight North American graduate students and research academics who have been extensively involved at the FS over the years. Most of these conversations were semi-structured in that topics were centered around their introduction and ongoing involvement.⁴

The interviews were transcribed, printed and read for themes relating to the research questions. I used hard-copy to conduct the first round of open-coding (Elliott, 2018), this was followed with multiple iterations of finer level of coding using MAXQDA software. The process was iterative—as themes were refined, later iterations consisted of regrouping and consolidating codes into more dominate themes. Interview quotations will be used throughout the results and discussion to allow the data to speak for itself where appropriate, enhance the narrative, and show complexity.

A note on the reflexive research design

As stated, my initial directive was to assist in the procurement of funding for this project. What drew me in was that the partnership was supporting Waorani who defend their right to self-govern and subordinate state economic interests in order to continue their socially regulated economy. I started off trying to identify what was operationally scalable and what impacts could be measured—jobs, money, number of students and beneficiaries? I quickly learned that my previous practitioner knowledge would serve me only insofar as to be a benchmark from which to measure how not to think and what not to do. Specifically, to be fixated on quantifiable, standard, market derived metrics of success.

But with the infrastructure in the first Wao community half-finished and other communities awaiting similar expansion—there was a drive to get the project finished. This drive brought up issues of scaling, fairness, mitigating conflict and maximizing benefit. Hence the catch-22: prove the projects’ impact and scalability before having the evidence gained from learned experience. Donors understandably want to fund “successful” projects and mitigate risk. Some of the tension lies thus, in what and how, and who, gets to define success.

Results and discussion

As mentioned in the introduction: in theory, sustainable development is about long-term well-being (WCED, 1987) as well as bridging the knowledge action gap (Kates, 2017), and boundary organizations are designed to bridge the knowledge action gap (Cash et al., 2003; Clark et al., 2010). This research has examined sustainable development through empirical analysis of the boundary organization the FS. Specifically, development work is enabled at this boundary because of the partnerships between Western academics, hybrid boundary people and Waorani boundary people. From this work, one of the key findings is that, what makes development sustainable at this boundary is the long-term commitment of boundary workers.

⁴ I gained IRB approval to conduct the interviews prior to my field visit in Summer ‘19. All names and place names have been anonymized.

Acknowledging that scholars have developed some criteria for conducting boundary work (Cash et al., 2003) including development of communication, translation and mediation. From my discussions about success and impact with the interview participants I've identified the elements of development at the FS—many of which critically rely on boundary work—that align the success of the development to the different actors.

Additionally, I've identified the following themes that relate to the research questions: 1) *The Wao commitment to development on their terms while facing extreme external pressures to assimilate*, 2) *understanding the desired process and outcomes: success measured for the different actors*, 3) *archetypes of scale—and what is sustainable given the actors involved* and 4) *impact implicit to the FS*. The analysis oscillates between a discussion of the boundary work at the FS as a socially embedded institution, to the specific project along the Waorani expansion. The themes are meant to be descriptive of this particular boundary.

1 Wao C1, Wao C2 and development at the boundary

This section attempts to address the first research question: what do the Waorani want and why? What pathways to development exist? What gives rise to their choice?

Wao C1 and Wao C2 are two of 17 Wao communities in the Pastaza Province of Ecuador who oppose oil development in their territory. The boundaries between them and the outside world were once steep and impenetrable, these sharp boundaries however, are growing more and more permeable. In discussing this increasing connectivity with Lundin, he states: "It is difficult to imagine a Wao study or research center that would operate in isolation from foreign partnership or collaboration with non-Wao or the State. To envision this is archaic because even the Waorani world is increasingly globalized. The Wao world is emerging into a one of increasing connectivity. There is no Wao themselves that can be separated from their marriages, friendships, and working relations with members of Kichwa communities, Mestizos, Europeans, North Americans or state institutions." Permeable cultural boundaries, as illustrated by Lundin, create a sort of bi directionality of movement for the actors and create an opportunity for common ground. They also create hybrid cultures where there are more densely layered connections across the different sectors. Working within this densely layered cultural fabric has allowed some communities to move through the social structure with more ease.

Geographically, the Western Amazon has fast flowing rivers, dense rainforest—and in this region, newly formed roads and growing cities. The pressure to assimilate has gained momentum since first contact in 1958. Generation to generation, Wao children are increasingly being reared in neighboring Puyo or Shell and relying more heavily on Spanish. They want tablets and cellphones and their experience is colored by having parents who were raised in relative isolation. Enrique from Wao C2 and Alfredo from Wao C1 are in their 40's. They were both raised in the interior territory to activist parents. Their positionality is closer to the boundary of the Western context than many of their fellow Waorani. They are more connected and experience the privilege that comes with access. At around 18 years of age they went to the city to study.

Changing landscapes, mindsets and interiors

In a conversation with Enrique, I asked him if his children are proud of being Wao. "Exactly, you noticed what's happening, there are some Wao children, not all, I don't know if it's the parents that don't advise them on what the culture is... but they only speak Spanish, they don't speak Wao when they walk down the street." I also asked if it was a difficult choice to raise his kids in Puyo instead of in the territory. He

said he and his wife discussed it at length: "...we decided to go outside, so they could study, so they could try engineering, biology. But that they don't forget their language. We only speak in Wao when we speak."

In my conversations with Irene, Alfredo and Enrique, it was very clear that Wao cultural preservation, again—meaning language, land and key values—was their priority. The changes occurring were disheartening to them, but also motivating. Alfredo and I speaking of leadership among the Wao: "it's sad to see how the village changes... already we're not using our own traditions nor are we speaking in Wao Tededo. Everything now is in Spanish and the songs in Quichua. And so, I told the president (of the Waorani Nationality of Ecuador—NAWE) that, 'your task is going to be to recuperate the Waorani culture.' ... it's sad to be in a village that it doesn't demonstrate its culture (Alfredo, personal communication, 2019)."

The changes occurring are myriad. In the simplest of terms, the world we live in requires money. As one of the graduate students, who has spent the last ten years in Ecuador put it to me: "everyone needs money, we exist in a day and age where people require money to exist, which is just to say the Wao could maybe exist without interacting with the broader world, but when they are starting to go to school they require things like book payments, school uniforms. Things they can't produce locally, they need cash money to be able to accommodate some of these things (J. Roberts, personal communication, 2019)"

One thing is clear, some of these changes are elective. They want to send their kids to school. They want to live in town and have a bed or be out of the elements. Despite wanting to increase their connectedness with the rest of the world, there is a real worry that their culture will be lost. The environmental leaders of the Waorani worry about the youth. The youth are vulnerable to the mindset and pressures from the oil companies. Children being raised in the city with all the promises of fast entertainment and money, have come to expect what money can buy. Something that in recent history, wasn't needed. The issue of the Waorani youth came up in both my conversations with Alfredo and Enrique. Enrique said "...young people also go after money. And they may be conversing with the oil companies. There are so many oil companies, and they are wanting to come in, they are wanting to converse with the communities. So, it is better to socialize (the youth) and avoid, give a little work to the communities with the environment or build capacity with them...(Enrique, personal communication, 2019)." Alfredo sees these changes with the youth: "when you see a meeting between my wife, my mother, my grandmother, always the hands are full—sewing. The new generation already you aren't going to see sewing. They have tablets, cellular phones... these changes make them say: "I want money." But in order for money to reach my hands, my mom and dad have to work." He goes on to describe the problems arising with some youth in Puyo and Shell: "In reality, young people are educated, and they feel like, "I study, I don't need my grandparents because they don't know. I am the important one." But these youth don't know the cultural values that are in the father and the grandfather. To a Waorani, you could say "hey boy, you are Waorani?" He will say "no, I am Quichua, or I am from the city." He's never going to say he's Waorani because he's embarrassed (Alfredo, personal communication, 2019)."

He attributes this drift in the youth to the family structure: "the concern that I have is, that the parents do not make the decisions, the children now make the decisions, the parents have to be quiet. All these changes are generated because there is no administration, there is no decision in the family, there is no organization in the family. So that brings chaos in the territory, even robberies have started happening (Alfredo, personal communication, 2019)."

These issues are changing the mentality and creating new conditions for the Waorani—most of the changes come from their exposure to the market economy. Alfredo describes this in terms of the past—that 30 or 35 years before—his people were groomed to take oil money. In some cases, \$30,000 in exchange for accepting the wells. This was a time where people lived in easy money, he called it. He described the mentality generated and the effect that it has on his people today in light of their jealousy at seeing foreigners approaching his community. “...so, this mentality shows that when some people see foreigners, they think ‘ooh, this family is earning a lot of money,’ which is not true. (Alfredo, personal communication, 2019).”

His involvement with the political struggle of his people is rooted in a diverse career from conflict mitigation to policy analysis, to translator and tour guide. His critique is that there is a lack of organization in the territory and a perspective that is limiting his people’s options. Though he understands what is generating this disparity in mindset, he was critical of what’s happening: “my people... I think, they have no idea of what it is in today’s day that we call administration or organization (Alfredo, personal communication, 2019).” Articulating the difference between the mentality of the old way and the new way: “[in the territory] there is no plan that carries me. In the city yes, I have an agenda, Monday, Tuesday, Wednesday at such and such a place, such and such meeting. But here [in the territory] no. Roughly yes, in the morning go get Yuca, Banana, come—I see that I don’t have firewood, I go get firewood. My mom makes Chicha, she’ll say we need to come work over here, so we go work over there. They go to work and at mid-day they realize they need food, so they go fishing... it’s a plan that gets made daily, and that generates the mentality... When you tell them, you have to work—for them it’s like an obligation, and they don’t have obligations... but the most important thing is, if they want an income, they better think about the situation. It’s just like going to work in the Chakra or bringing Yuca—the same demand it makes (Alfredo, personal communication, 2019).”

These conversations elucidate the changing psychological landscape and the need to face the mindset asymmetries of very distinct cultures requires. There’s a palpable tension between identity transformation and preservation and protection of culture and land, with acknowledging interdependence on the globalized system and wanting to advance.

Development on their terms

The juggernaut of the modern market culture is all but inescapable, cell phones and Instagram connect to nearly every corner of the world. The Wao I spoke with enjoy and want to partake in aspects of modernity—in other words there are aspects of this transition that are healthy for them. The question becomes; what aspects of material and economic life can be separated from the overpowering effects of the modern industrial market culture? They have hope in a solution that will give them access to development on their terms—they refuse to partake in development that doesn’t suit their autonomous wishes. The fortitude of their resistance is complex and historically grounded in their cultural legacy. Simply, they refuse to accept that economic benefit needs to come at the expense of the health of their culture and land. The determination and conviction in their resistance is felt in Irene’s words: “Us women now, we say “NO! It stops here!” Us women are gaining power, we say “NO to oil!” As women, we are going to live as before (Irene, personal communication, 2019).” This attitude helped them win a landmark case against the Ecuadoran government that protects their territory from oil exploration last Spring (Riederer, 2019).

The next question—of what they want—is tied to the changes undergoing with their cultural identity. To this point, Alfredo and Enrique both went to Bogotá for a meeting this Summer with Indigenous leaders from seven Latin American countries, “one of the things decided was that nobody should come with any

NGO, nobody come with anyone from outside. Why did I request this? Because I want to know, I want to ask, how they feel, what they see for themselves without the support of an NGO—of an agency—what future do they see for their village. So, it's the first time that I've done this, and more than anything, I really want to know what these leaders are thinking (Alfredo, personal communication, 2019)."

Alfredo isn't hiding from the complexity of change—he wants to know who his people are without the allure of money from the outside. This radical honesty is a show of the confidence he has in his identity—in being willing to reflect on what it looks like in a changing landscape. His sentiment brings up an important reality, where for communities dependent on external funds to advance themselves—how much of what they want comes from their own imagination—and how much of it comes from parroting the will of donors? This radical honesty points to the desire for some Indigenous communities to find their autonomous expression apart from the market economy. For practitioners who work at this boundary, is it assumed that sustainable development is desired writ large before a deeper chance to understand the needs of the community is assessed? As an Anthropologist in the region put it to me, "many development projects are cannibalized the minute the NGO leaves for the summer" stripped for the raw materials that will actually be helpful. What then, was it that they actually wanted? And why wasn't it *that* that drove the development project?

Conditions of the path by Wao C1 and Wao C2

When discussing the partnership with me, and why it's interesting to their communities, Alfredo, Irene and Enrique talked about several important factors—but starting with the genesis of the idea—trust was critical.

Alfredo's mother has been an activist and leader over decades. The leadership provided by the elders in the community is incredibly important. And in 2018 she had met Lundin, they discussed the idea of having a joint undertaking out in Wao territory. Alfredo's response to his mother, and the proposal to work with Lundin was—"I can't say 'yes' because I don't know him. I had to let a lot of time pass to be able to understand what it was (Alfredo, personal communication, 2019)." This precondition is one place the mutuality and trust elements started that were necessary for the foundation of the relationship to move forward.

Alfredo listed three desirable outcomes to me: "first, coexistence between the students and the community. Second, an exchange of life—that the students share their moment of life and that we share our moment of life and third, an economic exchange that can be generated: "not such a high economic exchange and not in such a short time. It has to be long term, to be able to see family ties and also links with students (Alfredo, personal communication, 2019)."

His wife Irene was more operational about what needs to be done: "when we finish the structure, we need for the first group to come so we can show how we live, our culture without frills. We have natural medicines we can share... we can show them how the grandparents live, how to sew a hammock, earrings, artisan crafts, dying also...what we need to do is get organized. For every tourist that comes, we have to show them our culture, many medicines, what we make, the biodiversity of the plants—we will share our songs, our myths, how the grandparents lived...(Irene, personal communication, 2019)."

Enrique wants to promote the study abroad and host students as well at his community. His primary driver, however, is to start a school for the Waorani youth—he is concerned about the changes for the youth and how lost so many of his people are. His idea is to start a school in order to build capacity—a formative school that would teach the youth—but also build capacity in what it is to be Wao and to

defend the territory. The urgency in his voice was palpable as he asked me, “do you want to unite with us? More than anything, I need help from there, from that side—we don’t have many contacts.” His genuine request for support from me was an emotionally difficult conversation to have—I know his urgency comes from a real need.

It was mentioned multiple times that this project is distinct from other types of tourism type endeavors because it’s a family business. For them, the mutual benefit needed to keep it going comes from it being a family endeavor. It was clear from Alfredo’s experience working on other tourism projects, that there needs to be a strong leader. And for him, the leadership and organization needed to run a successful business, in their case, comes from having strong family bonds, trust, and mutual exchange. At first, he was very doubtful that the project could work: “in the beginning I thought this is going to be too difficult, how is it possible that my whole family will get involved to carry wood, materials... my mom and dad are going to get fed up one day because its hard work. But I challenged them, I said, if you support me, I will support you—that’s the condition—if you support me, i’ll support you... that part, that was key for us.”

Other pathways to development

Judith Kimerling, the environmental lawyer who wrote “Amazon Crude,” and who lived among the Waorani and serves as international council for Ome Yasuni—writes that tourism, although irregular, is an important economic option, especially to the Wao living in the intangible zone, it supports the Waorani’s autonomy and does not harm them, where extractive industries (logging, mining and petrol) and government dependence do (Kimerling, 2016). These particular communities are not open to petroleum extraction in their territories. However, they do want economic advancement, they want their children to be educated. And in opposing oil, they inadvertently oppose the Ecuadoran State. Their options for economic activity, other than tourism, are primarily mining, petrol and logging extraction. There are some NGO’s that work locally with communities on capacity building, cacao, solar canoes, rooftop solar, building latrines and other development projects—but none that generate jobs in-masse. Members of Wao C1 and Wao C2 have migrated to the neighboring cities where they enter the wage labor economy. Enrique expressed that “to work in the city is very difficult—there are no career paths. I’m worried for the communities.” At the time I spoke with him, he had left his post as a GIS analyst for a local NGO because his pay was unjustly low.

2 Development at the I-W boundary: elements of success and desired outcomes

The case of development at the FS can be described both in terms of the desired outcomes of the interactions and the key elements driving the interactions. It’s important to distinguish that development work at the FS has been ongoing since its inception—much of that work has informed my conceptualization of the elements of development. That said, the particular lens of this case focuses on the development of the partnership with the Wao and the concomitant extension to a satellite research center on Wao territory. This center stands to supply work to these Waorani on auxiliary grants obtained by the FS network and is slated to create seasonal educational exchange with University students. It’s possible that the success of the development may inform a theory of change that can guide practitioners—but at this point, it’s too soon to evaluate the success of the extension project.

Elements criteria and processes: the underpinnings of a development model

There are a unique set of *elements*, *criteria* and *processes* identified from the attributes of development at the FS (figure 2). These elements, criteria, and processes align the project with the needs of the different actors, create conditions for the actors to express and thrive and serve to mitigate the

inevitable challenges and tensions that arise through relationship. From my conceptualization and situated understanding, they are what make the relationships and any products generated through relationship, successful, sustainable, and perhaps most importantly, able to grow. Many of them are implicit to the FS as a boundary organization or explicitly rely on boundary work.

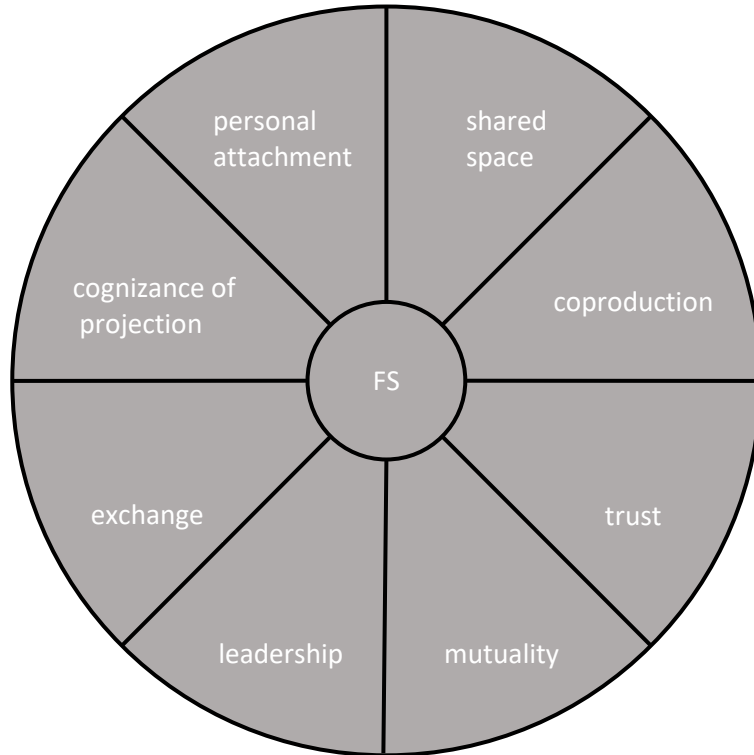


Figure 3: elements of development at the field school boundary organization

Element 1: Shared space is foundational to the FS and the most obvious and fundamental recipe for boundary work along the I-W boundary. The FS sits on the banks of the Napo river and is surrounded by the Amazon Forest. It’s a place where Western academics, with their families, can comfortably stay according to the standards they’re used to. Similarly, Indigenous Quichua people are employed there and are within their native context—many of them being from that same stretch of river. The meals and gathering areas are designed to facilitate transcultural conversation and mixing. Ellen Jean reflects on her dissertation years doing field research “I had done research with her [Lorena] in a remote region in Ecuador that to this day is not accessible by road—it’s a military base called Montalvo—I would fly out there and it was like camping—no running water, no electricity, no doctors, no clean water to drink. It was a very uncomfortable place, but it was the first time I met Lorena, I learned a lot, but I wasn’t able to comfortably do research because there was so much physical discomfort.” She goes on to talk about what this shared space at the FS has done for her children: “the really valuable things is not just that I can do research but that my kids can be exposed to other cultures that are really different from their own...(E. Jean, personal communication, 2019).”

Element 2: Coproduction is central to the project. Coproduction in this context means designing solutions, creating products and services in relationship. Examples of where coproduction shows up include in the creation of the name of the website, it took multiple iterations between Lundin, his wife and their family to produce. Also, on this website, Lundin describes the need to be careful about how they promote their work, “we’ve been quite careful on our website... cause there’s a lot of sensitivity

about what different things trigger people.” To promote the extension project, the topic of naming came up again, Lundin: “I was going to meet with Enrique and Alfredo, we need to get together and come up with a name or brand, but I want them to help come up with it.” Objects besides the name that get coproduced are the partnership terms, the capacity building and communication between the groups and the kinds of pedagogical materials that will get shared. For the study abroad program, on the Indigenous side of this boundary, the Wao are largely in charge of demonstrating their culture the way they want to. And the Western academic side will as well. In terms of the creation of boundary objects, its criteria satisfied, that both sides maintain their relative “self-hood” as they generate the products and deliberate about the space in between.

Element 3: Trust is a critical element to development at this boundary. Alfredo: “what I see, the future of this project is that there always has to be trust, between Tomas, Reece and all of you on the team, including me—since I signed I count myself as a team member” For Lundin, trust is something that comes with his complicity for an individual—he strategically mentors and cultivates relationships with key people that he can trust. Through that trust and mentorship, he likewise trusts that from the network things will grow that mirror the kind of work he’s doing: “I know that what I can accomplish in my lifetime before I start to fizzle is limited and I know that large-scale scaling is something I can’t do, it won’t happen while I’m alive and so I have to find people who I trust and know and have watched for a while and actually, teams of people who I know well who are working together, that I think can do something different but modeled on what we’ve done here together. I have to be able to talk with them and connect with their vision and their humor and so on. I connect well with Beljica, Richard, Maria his fiancé, they’ll make their mistakes and so on, but I have overall confidence, that what I’ve tried, the vision that I’ve had that I have imparted to them...[likewise] they’ve contributed their own visions and directions and they’re going to make choices.”

Element 4: Mutuality is another key ingredient to this model, and it shows up in many subtle ways. From how Lundin nurtures the needs and desires of his key graduate students and research professors—to how power is shared in Alfredo’s family: “I make the decisions here, but not alone. First I have to listen to all the conversations of my family...” On collaborating with his family: “it seemed really interesting, what could be generated between my family and the students... it’s something we have never experimented with in my family... in addition to the topic of trust, the children can look and see, learn... it’s important that my family is able to learn another aspect of life that is very different.” What’s important to the community as well as demonstrated by Lundin, is that this be a mutually beneficial relationship.

Element 5: Leadership in the changing context is critical. These communities of Wao in the Pastaza province are path-blazers and their perseverance and determination have carried them to very important victories. Leadership was discussed up-front with the community—Alfredo, coming from an activist family and a mother who is at the forefront of the Wao resistance, is a leader in the making. He spoke to me about what it is that Wao leaders are doing now, or that the Ecuadoran state has done, that he would do differently—that is, primarily to be proud of being Wao and stand in front of people, strong and organized: “Where do you want to carry your village? What are your decisions, how do you want to use these three years of your administration?” He talked about the leadership of the current president of the Waorani Nationality of Ecuador—that he comes from the Petrol Blocks—and it doesn’t give his people self-esteem knowing that. And since he took power the year before, he hasn’t been able to come out in front or do anything, build capacity and say what he wants.

Leadership was also visible behind the scenes at the FS. I think Lundin would guffaw at being labeled a sustainability leader, but he is. When I explain Lundin to other people, I simply say, “he’s part tree.” What I mean by that, is that his connectedness to his place is palpable and he is steadfastly and unabashedly himself. The many attributes described in sustainability leadership literature include systematic understanding, emotional intelligence, values orientation, compelling vision, inclusive style, innovative approach and long-term perspective (Visser & Courtice, 2011), but more aptly: “adaptive, flexible, self-renewing, resilient, learning, intelligent—attributes only found in living systems (Lai, 2011)”

One of the ways Lundin leads is through his constant navigation of diverse backgrounds, especially the asymmetries of his positionality as being a white man raised in Indigenous Ecuador. I learned very stubbornly that fairness is a matter of scale and that not everyone in the project will benefit. There is no solution that will benefit all Waorani writ large and those who do benefit will also not likely benefit equally. To deal with this requires emotional patience to manage the disappointments of perceived lack of fairness: “it always will take managing envy because not everybody’s going to be benefited equally (R. Lundin, personal communication, 2019).”

Element 6: Knowledge and cultural exchange are key to both sides of the boundary as well. As explored above—the community wants to learn from the students about their life as well as share the traditional culture of the Waorani. The deeper look into this exchange across the boundary reveals issues with romanticism and guilt of non-Indigenous or people of Euro-American heritage. Lundin talks about knowledge exchange across this border through the language education at the FS about also through the Anthropological lens of Intercultural Communication. He has his students look for instances of conflict. Where inevitably, their preconceived programming gets projected. He has them process these prejudgments through writing reflections.

Element 7: Cognizance of projections, romanticizing and guilt. A sense of awareness along the I-W cultural boundary is an important part of development at the boundary. One example of a cultural projection is exemplified by a story Lundin shared with me about a student who asked: “‘is it right for us to impose our internet on them?’ [Lundin] ‘I wanted to stop the student and say did you invent the internet? Is it yours and why would you assume the average Indigenous 12-year-old girl doesn’t like Instagram or whatever?’ it came from guilt, that we have this terrible technology, which I love, and we invented it, I invented it, and I’m imposing it on them, in general without meeting any actual 12-year-old Quichua girl who also loves Instagram.” When working with the students, he says, “we’re not pandering to them because the idea is to start where they are and move them gradually, to the degree we can, towards awakening. Awakening to the fact that they’re not Indigenous, but Indigenous people have complex identities. And it’s not just that they’re Indigenous that makes them different—they like many of the same things as I and have things to share and that they don’t want to be interacting with me as some stereotype of Indians but as people... furthermore, some of them actually like white society and can integrate with many parts of it anyway.” Lundin talked to me about his personal windings of guilt and romanticism being raised by missionary parents in Ecuador. Which leads to the final element of this model, and perhaps the most important.

Element 8: It’s personal. The history, the business, all of it. A critical element of sustainable development in this case is having ‘stakes in the result’ and dedication to an endeavor over the course of a lifetime—not just a project cycle. This comes from having “who you are be on the line.” For Lundin and his family, the primary attachment is to each other, the land and the history he and his family have with it. Their inter-relatedness makes projects that come forth both personal and proximal. And in my opinion, it’s one of the most important elements to its sustainability. When I first met Lundin, he made it clear that

he's not a "do-gooder" which I interpreted as, he's not on an agenda to make the world writ-large a better place or to transform anyone or make the lives of people he doesn't know better. Rather, he's doing what he loves and building from his sense of place. Sense of place has been described as a boundary object by Chapin et al., that facilitates learning across diverse subdomains, however run the risk of breeding conflict through contradiction. Something Lundin has mentioned, managing envy, is a constant process in this shared sense of place. While the element, "its personal," is related to "sense of place" (Chapin & Knapp, 2015; Masterson et al., 2017, Guthey, 2014), in that they describe "those dimensions of self that define the individual's personal identity in relation to the physical environment (Proshansky, 1978)." "It's personal" goes beyond the concept of the individual self and the relation of self to the environment.

According to Lundin, this element is the relationality concept of orienting oneself amongst relations: "in the Indigenous traditions, you have a plural self that is basically a self-that's a relative that has limited preferential relations in which you should NOT treat everybody equally... the idea is to try to benefit your closest relatives most and out from that. And that within that circle of relations there's also plants and animals and these plants and animals are given preferential treatment, love, care, and justice OVER the human beings in the next community over (R. Lundin, personal communication, 2019)"

This rootedness to family and place is key for other actors as well. Reece's daughter Ana, in speaking about her relationship to the plants on the land describes her experience relating to them: "there's this other feeling of like, 'I wonder what you're feeling, who you were before you were a plant.' That comes from Quichua thinking, because plants and animals were people...(A. Lundin, personal communication, 2019)." In Quichua culture, trees and plants are the ancestors.

In Wao C1, the rootedness to place and to family is evident and central to the partnership. Alfredo and Irene stress the importance of this endeavor as a family business. Irene says that what distinguishes what they are trying to do from other projects is that it is "family tourism." Alfredo has been a part of failed ecotourism ventures that lacked organization. He advocates for strong leadership among his people—and this starts with the family. He attributes the challenges facing Wao society to a lack of administration: "there is no decision in the family, and there's no organization in the family (Alfredo, personal communication, 2019)."

Desired outcomes: what's success got to do with it?

Evaluation is important to measure progress—this requires knowing what the desired outcomes are—and ideally from each of the actors involved. Each of the actors involved along the boundary have a set of needs. I wanted to understand how success was viewed through the lens of the different partnerships and relationships occurring along the boundary at the FS. I explored this through conversations about what success looks like for each of the actors with respect to the Wao extension project. Here I propose a set of core drivers that came out of the conversations I had.

At a macro level, tangible success of the project is achieving financial support to finish construction in the second community and get study abroad students to come. But is that really success? It's one benchmark in a growing process, but the process didn't start, nor will it end there. The words Lundin used again and again were *stabilizing*, *hope* and *sustainability*. Others talked about indicators of success in terms of *rapport* and *relationship building*. The following conversations helped me understand the desired outcomes of the different actors with respect to the Waorani extension project. From the desired outcomes, comes an understanding of what success is—which is a necessary step to being able to measure it.

Financial success is desired by the community and at the FS. Financial success implies that income is generated. Primarily, income for the community gets generated through the study abroad. One complexity to that model is that University students only come once/year in the summer. Lundin describes this complexity: “even if we managed to get a study abroad project or program made, a week is the longest possible he [Tomas] is going to stay in Wao C1, probably more like four days, you're not really going to generate the income needed so what we need to do is continually write grants... I think in terms of practically looking for grants... I want to look for more grants that would solidify these two Wao extensions and anything that would solidify them would solidify the FS cause it's a network and those things would build on each other; more things would come in.”

Reflecting on the economic reality of needing to stabilize a life: “If you think about it, the minimum wage for somebody working full-time—they're making about \$400 a month and so you're talking about \$4,800 in a year in a community where most people are unemployed or partially employed. If you're going to have projects in which you can keep some of these key people who are advocates for the environment and advocates for change... small grants—\$8,000 or \$5,000 grants—this does a lot to stabilize the economy. It also creates a culture in which people expect that there can be an income in valuing their culture and their environment and preserving it.” A small amount of money coming in from even small grants can go a long way. The key part of this for Lundin is choosing the people who are the fulcrum for positive action within the community, natural leaders who are advocates for the environment. Stabilizing them, can stabilize the community and ensure that the bio-cultural conservation efforts are continued.

This means that income for the community, projected to come from the study abroad, has and will continue to come by getting grants through which the FS can employ the community. He talks a lot about stabilizing a life: “just because you hire someone for a day or two it doesn't mean that you've stabilized his life (R. Lundin, personal communication, 2019).” Stabilizing these Waorani communities is about keeping their hope alive. Hope for them to enhance and maintain their livelihood while resisting the external pressure of oil development. These Wao community members are the environmental leaders of their communities—for this reason, he wants to continue to support them.

Success according to Irene from the community is about “getting organized, and slowly, slowly advancing into the future.” When I asked her about the sustainability of the project—she remarked that “if we don't care for it, it dies... we start small and little by little we get there... (Irene, personal communication, 2019).” They also repeatedly emphasized that to be successful they needed to be an organized family with a united base. This came up a lot as they spoke of mobilizing and making decisions as a family, contrasting their experience of working in ecotourism ventures that lacked strong leadership and organization.

Ruiz talked about this stage of the project as a learning process, and the value of “getting the model outside of Reece's head... through this thesis and through other products we're systematizing that knowledge of what actually happened... perhaps we need to do that before the money shows up because its different, its new [the project], it's not something that has been attempted before.” Ruiz talked about successful scaling in terms of looking at this part of the process as an iterative learning process.

For the Anthropologists involved at the FS, social embeddedness and what comes from that—rapport and trust—are what make the work successful. Jack Roberts talks about what comes from having 40 years of “boots on the ground,” where in order to make anything move forward, you need rapport. He

talked about success coming from having good relationships with people—one where they feel excited to work with you, instead of, rather than as soon as you leave, or the money stops that the whole thing stops. He talked about “finding individuals who are willing and happy to (not just) but have an inherent desire, self-driven desire to carry out these projects (J. Roberts, personal communication, 2019).” This inherent, self-driven desire, maps back to the idea of “its personal” and having skin in the game or who you are be on the line. It creates more densely layered reasons for wanting it to survive.

Ben Dexler is a Linguistic Anthropologist working with the Wao language. He and I discussed the romanticizing of Indigenous culture—and the use of some indigenous cultures to embrace the marketing of their culture in order to illicit interest and support. There is a positive impact on cultures gaining economic benefits from successfully marketing their culture to Western tourists and appealing to their sense of romanticism or guilt. This advertising may ultimately transfer to cultural preservation—which for him is the key to success. He talked about what’s at stake regarding the marginalization of Wao youth, he says, “imagine being cut off from all of the fairy tales and songs your mother sung to you at night—imagine not being able to understand that, or if you were a forced outsider to that, that’s what we want to make sure doesn’t happen. It probably won’t be successful, younger Wao are feeling more and more ostracized from the traditional culture (Dexler, personal communication, 2019).” For him, success is about getting people in the West to align with their values: “For those of us who care about it, [we] need to practice making the case based on values that we think people have in order to achieve our ends... (Dexler, personal communication, 2019).” People can understand that language and cultural loss is real, what Ben is getting at, is the question of what it will take to make language loss stop—and that successful development is cultural preservation.

To synthesize, the community views success both in terms of nurturing the project so that it can carry forward, provide economic advancement as well as shared learning. Lundin, who is positioned as a cultural hybrid—desires financial stability and to work with key people who, when stable, can maintain their pro-biocultural environmental resistance to oil, and keep the forest and fauna thriving. The Western academic cohort see success in terms of positive relationships and rapport, learning, and as a proxy for bio-cultural conservation.

3 The FS and the question of scale: two archetypes

The Waorani and the FS are both inevitably embedded in systems where they navigate both direct and indirect relationships. Craig Calhoun has made the case that, co-arising with the modern state and market apparatus, indirect relationships characterize much of modern life. These are relationships that are mediated through the trifecta of the state, market and techno-scientific culture (Calhoun, 1992). As the Waorani increase their connections to the “outside” world what impact will increasingly indirect relations have?

Lundin and I spoke extensively about the growth of the FS network: we spoke in terms of organic growth along networks of known relations, and about how he follows and nurtures the links that are made naturally when the different Ayllu’s connect, link up and become nested. The concept of ‘known relations’ is intrinsic to the Ayllu and the model of scaling at the FS, someone has to be related and either have or have had, a direct relationship for it to count. Lundin describes the Ayllu as the dominant social system of Indigenous Ecuador, and much of Indigenous and rural Latin America. For the most part, this is true at the FS—direct relations are the reality—and these direct relations are the predominant mechanism of the scaling that has been possible. That doesn’t mean people don’t change or that some people aren’t pushing for connections outside. My experience with Enrique from Wao C2 is an

interesting negative case. He spoke to me about working together before he knew me—asking me to link up with him and help him get a foundation going. For Enrique to reach out to me is an exercise of reaching out to an unknown relation.

When de-coupled from the need for network growth along known relations—the possibility for scaling opens up outside of the FS—something that for Lundin was difficult to conceptualize. Ruiz on the other hand, expressed the possibility of scaling this model as more of a franchise, in order to share what makes The FS so unique to other places. This can be visualized metaphorically as individual “seeds” that hold the same blueprint as the FS—boundary organizations based on the same (or at least some of the same) foundational elements of sustainable development modeled at the FS—in this case sustainability field schools (SFS) could be ‘planted’ in other spaces where the ingredients for boundary work are ripe. Namely—that these places are safe and amenable to study abroad, places where inter-linkages between the academic, or Western world, are already in place with local Indigenous communities. From there the knowledge sharing and coproduction would be set free to grow in-situ as a knowledge sharing experiment.

Describing the Ayllu: a place-based networks of relations

The FS is a business and a research center on the one hand, it also systematically functions as an organic process of relations that has overtime created an internationally connected network. Lundin mentioned, while speaking of other development projects in the Amazon, that he wants to lead with the fact that the FS is run this way, rather than obfuscate that fact to suit the occidental worldview. For better or worse—it is what it is: “we're working with the main unit of Indigenous societies in the Americas, which is not the tribe it's not the nation, it's not the individual and it's not the comrade, it's also not the Christian brother and sister, which are all alternatives that are pushed and different types of stereotypes that have been placed on Indigenous societies that have led to the failure of development projects.” He explained that when organizations say they are working on behalf of a tribe or a nationality, usually it's a leader and the leader's Ayllu that mobilize and move resources, connections and information along their networks. So, Lundin's goal is to keep this relational model upfront and central. There are many implications for how this plays out in his world, some of which we'll explore.

The specific attributes or definition of an Ayllu may vary from region to region, for example, the Andean Ayllu system is conceptualized as a “combination of kinship and territorial ties, as well as symbolism... it includes social principles, verticality and metaphor” (Bastien, 1978). In Amazonian Ecuador—Lundin describes the Ayllu simply as kinship tied to place, where the plants, animals and land are the kin as much as the relatives, more so for example, than the people from a neighboring Ayllu. Key to the way this Ayllu works is relationality. Thus, the growth of a project within an Ayllu system occurs along networks of known relations.

Back to the idea of the Indigenous way of seeing the plural self being one where community is primary; in the West, it is the individual that is valued. Ana shares her experience of growing up in both worlds and needing to constantly switch modes between self and community. Being embedded in a relational model means that the kind of scaling possible when the project is contextualized in this way is constrained then by factors relating to human interactions. Which is a lot different than the dominant Western mode, organizing society by family can be seen as nepotism in the West, where jobs are earned on account of individual merit. In this Ayllu system—jobs are given to family first and it's how you stabilize family systems and achieve longer lasting and deeper impact. Lundin is bound by this in a very personal way. It's not conceptual or intellectual: “There will be strong pressure to hire your closest relatives first (R. Lundin, personal communication, 2019).”

In relation to funding different development projects, Lundin discusses the donor perspective, “you give the grant and you don’t want nepotism. But it’s going to happen because you’re trying to move through this relational structure, or you’re trying to force relations that won’t happen, because you have some idea about individual merit (who is a good person to do it, etc.) So, part of the idea of this, working through this web of relationality is, not for ideological reasons (although there may be some of those too) but because that’s the structure that’s there in Indigenous Americas (R. Lundin, personal communication, 2019).” As we’ll see this relational scaling has advantages and disadvantages depending on who’s evaluating it. Their viewpoints as well as my own experience and exposure to the literature have helped me to hold space for the tension in these contrasting viewpoints.

The tension of the opposites

Scaling is a central theme for many development projects working on sustainability goals. Proving scalability becomes necessary for many organizations and projects to move beyond the pilot stage and it’s desirable for others who want to have wider impact in their communities. One of the primary lenses through which I have understood this case is through the many dialogues and investigations had on scaling. It has been a source of tension because of issues of fairness at the local level, and practicality at the global level. Locally, it is not possible to benefit everyone who needs to benefit and yet scaling locally in some amount is both feasible and desirable. Likewise, to think about scaling this type of boundary work globally brings up a host of questions about whether the integrity of the work would be able to be maintained—while at the same time—in order to receive funding in today’s competitive market, you nearly have to prove scalability: “to get the grant you have to talk about things that are infinitely scalable (R. Lundin, personal communication, 2019).” This sentiment has been echoed by many in the social innovation space was clear to me in the many grant applications we sifted through.

I have come to see the issue of scale at the FS on a typological continuum with depth and breadth at the extremes. These two extremes are archetypal and often in tension with each other. For example, the way that Reece describes scaling is representative of a relational/depth scaling perspective: “I have to find people who I trust and know and have watched for a while, and actually teams of people who I know well who are working together, that can do something different but modeled on what we’ve done together... I have to be able to talk with them and connect with their vision and their humor and so on... I have overall confidence in the vision that I’ve had, that I have imparted to them [indigenous partners and grads-students]—and they’ve contributed their own visions and directions (R. Lundin, personal communication, 2019).” Lundin is describing the creation of trust and growth of relationships as a way of scaling, and when there is a human connection present, there is some faith that the essence of what makes the FS unique will continue to grow through that linkage. He contrasts this depth/relational model with scaling breadth-wise primarily through the importance of known relations “If we were going to extend somewhere, I wouldn’t just go somewhere where relations aren’t... [if] you’re scaling in places that you don’t know the relations ... that’s a difficult jump for me, I can’t quite do that (R. Lundin, personal communication, 2019).”

Whereas at the other extreme, there is an idea that the model of development at the boundary exemplified at the FS—specifically through the SFS model—could be transported to other places: “I had this idea that, this is not just about your place we want this organic process to grow in other places, because it’s too good to not take advantage of it (T. Ruiz, personal communication, 2020).” Placing these on a typological continuum is analytically useful, but also limiting. The utility is in how the tension created in their opposition brings up useful questions to ask. It’s ultimately limiting, because the

complexity is that a solution will rarely be strictly one or the other and context will dictate the proportions that are most suitable. Tomas expresses this tension with scaling as a hybrid—that there is still an organic growth component, but relates the need back to the urgency of the problem: “I have this baggage of we need to change the world, we need to end the predominance of the techno-scientific culture, so we need to have an organic process of contagion that creates an alternative to the culture (T. Ruiz, personal communication, 2020).”

To break this down a little further, there are two ways that scaling has been framed: 1) scaling SFS through this FS boundary organization locally by adding SFS to benefit a larger segment of the local Indigenous population. This is a complicated issue because with scaling to benefit the community there are issues of fairness that come up. Scaling this particular project further down river has been described by one community member as “untrustworthy.” Not all Waorani are going to benefit—nor do they necessarily want to compete with each other. Choosing how to implement this type of scaling is a delicate process. One participant who has spent 10 years in the area urged me to scale back my conceptions of fairness. “Even if you built 10 [centers] working with the same people—you’re going to have any entirely different subset of Waorani who say ‘why did you develop this gross amount of resources, and you went to the trouble of making 10 of these satellite research centers but all working through the same people... no matter what it’s all going to be working through the same people, all the money is going to be funneled along the same channels (J. Roberts, personal communication 2019).” If I had not worked directly with the community or with people who have years of boots on the ground, my thinking might likely suffer simplistic and asymmetrical thinking in search for a silver bullet: simply the creation of more jobs and more centers. This may unknowingly de-stabilize the local situation. It’s a wicked problem—both scaling back fairness, and fairness at all—I’m not sure there is a solution from where I sit.

The other way that scaling has been framed is through transporting this working model at the FS to other places in the world where boundary people exist and bridge the Indigenous world to academic or other Western institutions. The key argument being extolled by National Geographic and others, is that Indigenous people caretake 80% of the world’s biodiversity and represent less than 5% of the population (Raygorodetsky, 2019). Because this boundary is typically so steeped in asymmetrical power relations, boundary organizations can provide a space for horizontal coproduction, ease the gradient and aid in the creation of a productive boundary space and create ecotones between groups. They also create support structures while at the same time promoting bio-cultural and language conservation. The resulting gap here lies in the creation of a network of these types of organizations that already exist at this boundary.

The complexity of these extremes is exemplified by the overlap and interdependence of these modes. Some of the interesting questions that arise in the tension, in this case are: what is it about this model that is scalable? What would be lost, and what would be gained if the model were to be franchised? And how much scaling is good enough to garner support?

One thing to notice is that the depth-relational model, if indeed relevant over a long-time horizon, will (and has) also scale in breadth, but still be tied to its locus of operations. As such, the depth/relational model has elements of extensity and reach as well as depth—but notably, it takes longer. However, critically, as Ruiz points out—this in-situ model will have “a threshold, bottlenecks and senescence (T. Ruiz, personal communication, 2020).” Meaning that in addition to being slow, there are also many ways that growth can be stunted based the path dependency of the relational model.

Franchising a model that works means it will likely reach a greater number and perhaps have a further reaching impact. The depth of impact within the franchised model is unknown. Would it likewise create more leadership where the relational model does not? And is it true then, that the success of the franchised model is attributed to how aptly the individual elements of the development model are scaled? Would we get the same results picking up what is done at the FS and taking it to a community in Mexico? When examining whether this boundary organization-field school can be disenfranchised from its origins the questions become theoretical.

Trust has been a key component of this model and I tend to think that it is unscalable—rather, it is relational and tends to be mediated through direct relationship. Ruiz reminds me that there are trustable brands—and if what one is scaling is the promise of what the brand represents, then does that imply the brand can also scale trust? I don't know. I'm skeptical. Again, if relational/depth scaling is placed at one end of the typology, and franchising the FS is placed at the other—in between is a model that relies perhaps on finding other bridge people, like Lundin—along other I-W boundaries.

My goal has been to claim that, despite the fact that the FS doesn't scale infinitely, it is still scalable both extensively and intensively—and what it is scaling is positive impact. My goal in doing this has been to provide evidence for a type of scaling—relational scaling—that can garner support from the funding world. As supported in the literature by Uvin et al. that impact is not only in numbers but capacity building, partnerships built on trust and horizontal space where diversity can flourish.

Where is the FS now in its growth trajectory?

Prior to the FS's inception, Lundin's historical connection to the area came from his father and his father's connection to local communities there. Some of these early relationships still continue. the FS's growth has attracted many prestigious academic professionals year after year. Many of the graduate students are working at preserving Indigenous languages and cultures. Graduate students return on grants like the Foreign Language and Area Studies (FLAS) or the Fulbright and build relationships with neighboring communities or with people they met at the FS. Lundin nurtures these key graduate students because they are building a network that itself continues to grow organically. Scaling thus has occurred along these known relations that are built on trust, mutuality, coproduction, knowledge exchange. And it's for this reason that that sustainable scaling at the FS moves at the speed of relationships. Lundin trusts that the relationships he cultivates will grow as they 'ought to'—because they're growing out of a base of trust and connection. The social network grows out of these relationships and people that come back attract other people—they do their PhDs, many academics have launched their careers, some of the professional academics have returned to their host institutions and started study abroad programs for undergraduates, research labs that focus on Amazonian Ethnobotany or Linguistics.

4 Typology of impact

Impact describes positive change—this can be economic, social, and academic (ESRC, 2020). The trend in the donor market is to invest in impact solutions as a business model and away from the classical grant or philanthropic model, unsurprisingly the drive to prove impact has become tightly coupled with the drive to scale-up (USAID CII, 2019 & GIF, 2019).

The question becomes how is impact measured by those impact investing firms? Are the myriad social pathways to impact represented? For example, are the transformational pathways that influence people to change their careers, or alter institutional policy, maintain hope in the struggle over bio-cultural

preservation or to affirm marginalized identities valued as impact? The depth impact measurement from one impact investing firm looked at relative changes in standard of living and consumption (GIF, 2020), others have developed proprietary methods (SI, 2020) and programs (GIIN, 2020) to measure the changes an innovation has. Ongoing market analysis needs to be done on whether this innovative approach to funding de-prioritizes smaller scale in-situ solutions for their less conventional approach to impact and scale.

Some quantitative metrics that describe the FS's impact include a 20-year network growth and employment, support, and resources to local Indigenous Ecuadorans. Over the years, 184 FLAS Fellows from 40 universities have gone through language, Ecology and Anthropology classes at the FS. And hosted around 1000 undergraduate students on study abroad programs from five Universities. The impacts on the communities, in terms of conservation and jobs, are currently only supplementary to what the connections, attention and support does for their hope to keep doing what they have been doing for the last 50 years—resisting oil development in their territory.

That said, as discussed in the previous section, growth at the FS is organic and network based. And the pathways to scale are also pathways to impact. In addition to the quantifiable metrics of impact mentioned above, I've collected stories from some key participants at the FS that represent a range of positive impact experiences. The pathways of impact have been categorized broadly as: *relationship building, work advancement, knowledge sharing, transformational: change in one's direction or mindset, biocultural conservation and well-being.*

Relationship building

Jack Roberts, an Anthropologist based in Ecuador, discussed relationships and rapport as crucial for success, it's also an important indicator for impact. Relationships are the central unit of analysis at the FS because they are key to the partnerships that have been created and that build relevant impact. Impact that is suited to the particular individual and that works for the whole. The relationship building process includes hedging family connections, academic connections and community connections.

In 2008, Linguistic Anthropologist Ellen Jean went to the FS for the first time. She and I spoke at length about her long career doing research in Ecuador. She did her dissertation in the late 80's working with an Indigenous elder, whom Jean considers to be like a mother—Lorena. She talked about the difficulty of her dissertation year due to the “rustic” conditions—and faltered to return to Ecuador for a number of years because she couldn't reckon wanting to be in such an uncomfortable place with children. The FS enabled her to continue her research in Ecuador. She has comfortably returned, with her children and husband, every other year since 2008. “The main thing that Reece did, not only did he invite me down there, but he invited my long-term consultant Lorena.” After coming to the FS, she and Reece discussed the possibility of her initiating a study abroad. Within the year they had managed. And since 2011 Jean has run a study abroad program between her host University and the FS, where anywhere from 8-15 students per year join her. Back at her University she's run research labs and published work with some of the students who have come with her—which has helped to launch careers for some of her key students. When I asked her if any of her students experience culture shock, her response was that “Ecuador is on the whole good for them, I've had students confess to me, after the study abroad was over, that they were suffering from depression and anxiety but when they got to the FS they felt so much better about everything. I mean it has this beautiful set up there, you're provided three delicious meals a day, you can't possibly isolate so there's the sociability...(E. Jean, personal communication, 2019)” Jean's descriptions of the FS make it clear that the space provided has been key for her to continue doing her life's work in Ecuador primarily because of its level of comfort and how the

welcoming environment is for families. Additionally, Lorena is a key language elder at the school—her video testimonials and physical presence add rich context to the learning environment. Her ongoing participation at the FS has also helped to stabilize her life by providing a source of income, as well as pride in sharing her knowledge.

The impact that building relationships has had on the graduate students was echoed to me by many. They view their experience at the FS as building a cohort of peers that will be with them for their entire career. The many graduate students who converge at the FS have gone on to support each other at conferences and along their academic paths. Evidenced by their continued convergence at the FS, they have taken up some aspect of researching Amazonian Ethnobotany, Linguistics or Anthropology—in sharing this niche part of academia—they support each other as a research cohort. January Eli, a postdoc student has returned to Ecuador for years on multiple FLAS fellowships and a Fulbright—she says one of the things that captivated her about the FS was “the connection between the social and the environmental world—which isn’t really separable at the FS—but that interaction and relationship was what ended up being so striking (J. Eli, personal communication, 2019).”

Work advancement and opportunities

For both sides of the boundary there are work advancement opportunities. August Reed has returned to the FS a number of times and plans to spend his career specializing in language documentation. He talked about his ability to add value to his PhD program on account of having an “in” at the FS. “It’s actually kind of difficult for someone going in cold to language documentation—if you’re a random white person from the US who says, ‘I want to go to South America...’ you don’t really have a door. But the fact I was able to go to the FS on that study abroad initially, opened that up... so when I came here [host University], the people here were pleasantly surprised that I already had connections to communities, to speakers and not only that, but to researchers in this area and this field—with Ellen and Reece. Another big plus with the FS is that Reece invites all these visiting scholars and researchers. That has been hugely beneficial to me too. That’s how I met Peter Muysen. Peter is probably the world authority on Quechua, on all Quechua languages. He is a huge name in Linguistics. He’s a big deal. So, the fact that he comes there every other year is great and the fact that I can chat with him and he knows me on a first named basis is great. That’s huge for me, to meet the number one world Quechuan linguist (Reed, personal communication, 2019).” Work advancement has also come to the local community—the language teachers and indigenous elders who teach at the FS as well as through the graduate students who hire and pay community members as guides, or as research participants.

Informational: knowledge sharing

A key attribute of boundary work is the knowledge coproduction at the boundary—this happens in formal and unformal ways. It occurs amongst actors in common gathering spaces, for academics with who work with community members or learn from the community both formally and informally. Sam Kennedy, an Anthropologist studying the resiliency of Quichua communities to PTSD, talks about the access he gets to these communities through the FS: “the window into the Quichua Indigenous way of thinking, by being able to have guided conversations with Quichua people and do it in Quichua and you hear the full stories and rationale and really like start to understand more about Quichua culture and beliefs (S. Kennedy, personal communication, 2019).”

The local Quichua and Wao community has interactions with the outside world which in turn impacts their children and families as it exposes them to completely different social contexts, expands their worlds and in some cases give them confidence to engage. In some cases, helps them practice English

and Spanish. Dexler describing his interactions with the Waorani, “they all like the idea that I might help people learn English in their communities and things like that since its very advantageous to them...” Richard Beck: “not a lot of people speak English and that’s a big deal for tourism. So, all of the communities I go to ask me for help to teach them English (R. Beck, personal communication, 2019).” Language is one primary object that gets traded across this boundary. Alfredo also talked a lot about the exposure his children would get to the occidental world: “on the subject of trust, it’s very important that the children can see and learn. It’s important that my family can learn another aspect of life that’s very different (Alfredo, personal communication, 2019).” He believes this exposure to international students inspires learning in his family. And is interested in this impact being bi-directional.

Transformational: changing trajectories and changing minds

Dexler, is the first and only FLAS fellow at the FS to study Wao Tededo. Since Wao was never historically a written language, it’s almost not been described. He’s pioneering the field with two Wao teachers at the FS. Prior to deciding to study Wao he had been studying Quichua in his Linguistics program at his native University in Ohio. After coming to the FS and being exposed to the Wao culture and meeting the teachers that Lundin had selected to start the program, he decided to switch paths and start entirely over with a new language: “It seemed very interesting to work on a project like that, that had broader impacts on the science by being able to supply some really nice facts about something that hasn’t ever been known (Dexler, personal communication, 2019).”

Another form of transformation is the humanizing of different cultures that young people and study abroad students often have traveling outside of the US experience. It’s one thing to read about another culture, a closer encounter however brings the distinct other into focus and allows us to assess the extent of the difference and sameness. It allows for an informed perspective about what it means to live a different culture: “my kids can be exposed to other cultures that are really different from their own, they can look at people who look really different and they can visit people who live in houses that have dirt floors and they don’t think anything of it they just think well ‘that’s just how some people live’ and they don’t look down on them. So that’s been a really valuable learning experience for them (E. Jean, personal communication, 2019).”

Well-being, work opportunities and biocultural preservation are linked:

Thriving at this edge between the Indigenous and the West is Ana—Reece’s daughter. She has the unique experience of being from both worlds. She explained the complexity of growing up in two places. She talked about the complex identity she has of being Indigenous in a changing landscape. One of her first memories of going to town when she was younger with her cousins, was when she started speaking Quichua on the street and suddenly they covered her mouth—she didn’t understand why they couldn’t speak in public—a legacy of racism she wants to help heal in her family, especially with some of her cousins who don’t really speak Quichua: “one of my cousins who when she was younger she was a little more embarrassed, but the more she learned about the culture, the more proud she kind of felt. I think she was working here for a while with us, maybe like two or three years here and she learned a lot of things that she didn’t know just hanging around our aunts and also hanging around other Quichua women here. She became a little more proud of who she is, and she kind of like wants to work in that area now (A. Lundin, personal communication, 2019).”

Self-esteem and hope are important impacts. They serve to combat the very persistent battle of racism that many Indigenous people face. Ana shared her personal account about not being able to speak her language with pride in town, or of her cousin who was embarrassed of being Quichua, other stories I

heard at the FS of Runa (Indigenous) being treated as a bad word, and that many local people don't see themselves or their culture as having anything to offer outsiders. It appears that language and self-esteem are connected. Could there be a link between the pride one has in their cultural heritage, displayed through their speaking a native language, and self-esteem? The Wao people I interviewed—who are more remote and have only recently migrated to town, seemed to have a lot of self-esteem in their cultural heritage and pride in speaking Waorani. They worried about the youth in town who, as Enrique put it, are “lost” and have stopped speaking Wao.

Particularly for these Wao communities, hope does a lot to support their ability to stand for what they want. “(these grants) will bring in work hours transcribing and build hope at the same time but also with those work hours the Waorani people would be doing would enhance the infrastructure, human and physical that would bring in more grants (R. Lundin, personal communication, 2019).” The more they're able to work on small projects and keep projects coming in—the easier it will be to keep the oil in the ground. “It is giving people hope to oppose oil and mining. So, these are signs that some kind of alternative economy can come in and what strengthens that hope and keeps it from dissipating is by getting other small projects (R. Lundin, personal communication, 2019).”

The money that these communities stand to earn will likely be sporadic. In addition to income from the study abroad, Lundin repeatedly emphasized the need to get more grants to employ these community members. “This employment still won't generate enough money to compensate for killing of animals but one thing it does is get key leaders interested in ecology—and those who already are interested in ecology and preserving tradition and preserving their territory—are given an emotional and economic boost to help. They can be co-pi's or work on more projects that would help them make more money to preserve their territory and autonomy and so on (R. Lundin, personal communication, 2019)” So far, in addition to the GCSO grant and the study abroad started at ASU, Lundin worked on a National Geographic Grant with Anthropologist William Balée—where they were able to hire some of the Waorani to help analyze forestry transects.

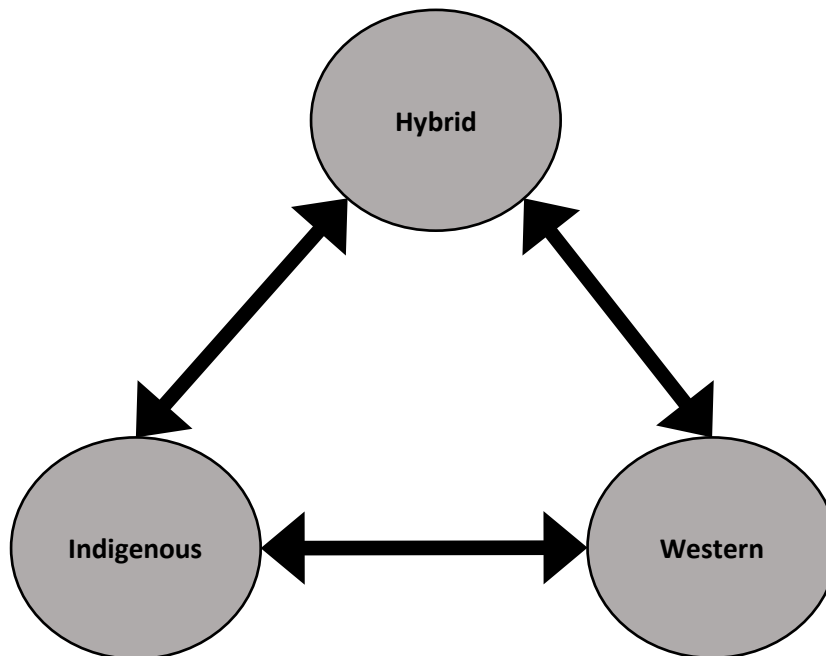


Figure 4: Impact exists in a feedback loop

Impact exists in a feedback loop

One of the key takeaways I've gotten from studying development at this boundary—where the hybrid families at the FS, the Wao communities and Western academics converge—is that impact seems to flow in all directions. In general, the actors have a reflexive open nature and seem to trust the feedback required to keep the partnerships healthy. This creates a nearly horizontal environment. It is nearly horizontal because there are still clear leaders who maintain a higher degree of agency or who make decisions on behalf of other actors. That said, these decisions occur under consult and there appears to be a lot of room for the thoughts, opinions and expressions of those involved.

I've seen Lundin take information, that at first, he may resist—he may then go dig some plants or do some forestry work and come back with a thoughtful reflection that shows how he adjusted his position. Likewise, impact that exposure to the FS has on the academic cohort is bi-directional. Where they go and want to go has a direct impact on the network at the FS. Their influence or research trajectories influence the relationships that get forged. The following story may help exemplify this: there was a community member from a neighboring Indigenous nationality who knew about the extension project and was very interested in promoting this type of field school in his community. Lundin had employed him and developed a relationship, there was some openness to the idea of working further with him and his community. However, graduate students who had been working at the FS were beginning to naturally forge relationships with another community of the same nationality. This second community had the added attribute of already being embedded in the family and work relations at the FS. Being open to the graduate students and who they want to work with influences Lundin and caused him to shift his thinking around this first plan. Because the natural organic linkages being created by the graduate students that he trusts, were going in a different direction. In his words: "I'm looking where our most connected graduate students are going, I'm not going to force them to go somewhere else, I'm not going to say look instead of going here go there because we're going to write a grant with that person and scale there (R. Lundin, personal communication, 2019)."

Conclusion

I sought to understand the social and historical context of development for the Waorani and specifically for the communities that intersect with the FS. It's a boundary that has been characterized by mistrust between the Wao and State and market forces and complicated by the concomitantly allure of and encroaching modern culture. These forces apply (both intentionally and unintentionally) pressure on the Waorani to assimilate and subordinate their autonomy. I've sought to understand the I-W boundary at the FS to codify the basic elements that make development sustainable and impactful. There were four major themes that were identified in the data: 1) *The Wao commitment to development on their terms while facing extreme external pressures to assimilate*, 2) *the desired process and outcomes: success measured for the different actors*, 3) *a typology of scale—and what is sustainable given the actors involved* 4) *a typology of impact pathways and impact implicit to the FS*. Through analysis of these themes, I developed eight elements that directly explain how the FS functions as a development organization at the I-W boundary. These elements are made possible because the FS is a boundary organization—which makes for one of the most crucial elements to sustainable development at this boundary—the creation of a physical and conceptual space where the range of diverse actors converge in a way that allows them to maintain their identity and mix in an environment that is also friendly to hybrid cultures.

One of the findings most interesting to me personally is the "it's personal" element. Having "skin in the game," being rooted-to-place, having connection and bonds to the people and the land, stakes, and in

this case, a long-term commitment. This long-term commitment is exemplified by the historical precedence of growth at the FS. This investment has ensured the sustainability of the development because for the actors involved, there are lives and families on the line.

The growth of the FS from 1960 to 2000 started with key linkages being established with community members through occupation, friendship and finally family ties. And from 2000 to 2020, the growth of the FS has increased substantially to include hundreds of University students and top of their field academics. This scaling is notably temporally and spatially extensive from a single locus. It has grown organically, not as a drive to make the world writ-large a better place, but to make a small section of it better for a network of local family and friends. Through that process, it has made this section of the world more sustainable and has positively impacted hundreds of people, stabilized lives, provided careers, changed and transformed mindsets, and is providing a space for the Waorani to express their autonomy and integrate socially on their own terms.

Through the many conversations and investigations made into the topic of scaling, I propose that sustainable scaling is one that models this process of organic relational growth. And similarly, that sustainable impact comes from growth and development simultaneously rooted to place and *that moves at the speed of relationships*.

The vision of a global contagion of SFS where Indigenous and Western knowledge can be exchanged, autonomy nurtured, and local environments supported and protected from industrial extraction is alluring. Can scaling be disenfranchised from the FS? Are the elements transplantable? To some extent the answers to these questions lie in finding other boundary workers dedicated to the spaces that get created along the edges. As sustainability scholars—these global solutions appear to have more power to thwart the dangers and respond to the urgency of the Anthropocene.

“I have no doubt that it is possible to give a new direction to technological development, a direction that shall lead it back to the real needs of man, and that also means: to the actual size of man. Man is small, and, therefore, small is beautiful (Schumacher, 1973).”

From my vantage point, the proverbial elephant in the room is the dominance of the mechanized unregulated market and the techno-scientific culture that both value growth at any cost and unequally preference quantification respectively. Sustainability doesn't hinge on making small-place-based sustainability endeavors globally scalable. Since sustainability science is a normative field, and by definition there is a long-term temporal component, the funding structures and value systems used to measure sustainability must reflect this modus operandi and include space for place-based solutions.

I imagine a world where the social imagination is not limited to the constructs of capitalism's mechanical march. The FS to me, is an example of a boundary organization that has managed to bridge an incredible chasm through relationship building. And in the milieu of mixed histories, identities and privilege, create a space where creativity is flourishing. Many projects that represent people in the margins who are not subsumed fully by (and therefore, in some respects protected from the malaise of) the global market system, still rely on external funding. This can put them in a catch-22—reliant on a system that according to Polanyi and history, will “destroy native life (Polanyi, 2001).” The situation for the Wao is on thin ice. There's a lot of money underground and the hope that keeps key environmental leaders working to maintain their vision for alternative economies is reliant on support to keep small scale projects funded.

To add to this, as I finish writing this paper there is a COVID-19 pandemic in full swing. The study abroad scheduled for Summer 2020, that was meant to support the Waorani, has been cancelled. There's no way of knowing the extent of social changes as a result of this pandemic—in the event that the social world as we know it changes drastically—what new directions can be co-imagined?

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