Houses in Heaven Are Made of Steel:
Understanding Change in Ecuadorian Amazon Secoya Structures

by

Gabriel Arboleda
Arquitecto (1999)
Universidad del Valle

SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE IN ARCHITECTURE STUDIES

AT THE

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

SEPTEMBER 2004

© 2004 Gabriel Arboleda. All rights reserved

The author hereby grants to MIT permission to reproduce
and to distribute publicly paper and electronic copies
of this thesis document in whole or in part.

Signature of Author

Department of Architecture
August 20, 2004

Certified by

John A. Ochsendorf
Assistant Professor of Building Technology
Thesis Supervisor

Accepted by

Julian Beinart
Professor of Architecture
Chairman, Department Committee on Graduate Students
HOUSES IN HEAVEN ARE MADE OF STEEL:
UNDERSTANDING CHANGE IN ECUADORIAN AMAZON SECOYA STRUCTURES

by

GABRIEL ARBOLEDA

Submitted to the Department of Architecture on September 1, 2004
in partial fulfillment of the requirements for the Degree of
Master of Science in Architecture Studies

ABSTRACT

This thesis explores the change in the building structures of a Northeastern Ecuadorian group, the Secoya of the Aguarico River. In the context of environmental activism and cultural survival there are many reasons to lament major alterations in the Secoya’s lifestyle in recent years. One of the most visible transformations experienced by this group is the abandonment of several traditional architectural types, including the Jahuë’e or communitarian longhouse. The thesis focuses on understanding the forces that have influenced the Secoya decision to adopt the Zinc House type, a metallic-roofed individual housing unit. These include change in their economic systems, depletion of the natural resources necessary for traditional construction, Western cultural pressure, difficulty to adapt the traditional structures to a modern life, and finally a historical predisposition to change.

In short, the Secoya changed firstly because everything around changed, leaving them with no other option, and secondly because, simply, human beings naturally tend to change. The change was meaningful for the Secoya because many building practices that were actively linked to social life were abandoned. It was meaningful for us outsiders because our expectations of an exotic culture were left unfulfilled when it changed. However, rather than the loss of another indigenous culture, what the case illuminates is the nature of our own expectations, those conforming to an urban, pop mythology regarding sustainability. We should follow the Secoya example and change our own urban mythology, because our mythology wrongly overvalues cultural idleness and nature as the means for guaranteeing sustainability; it emphasizes that sustainability depends on resource saving rather than on social justice, and it believes that sustainable solutions are an universal panacea that invariably applies to every culture, geography and historical context.

The thesis seeks to expand the frontier of architectural theory towards an unconventional scenario, that of the Upper Amazon, in a series of specific topics: First, it provides detailed knowledge on three typologies of ethnic interest, one of them aboriginal (locally originated), one indigenous (locally adapted) and one modern (neutral-global). Second, it offers historical knowledge about the evolution of the Upper Amazonian building tradition. Third, it discusses how myth and building structure interact in the Upper Amazonian traditional house. Fourth, it details the serious cultural implications of the abandonment of the traditional types. Five, it presents knowledge about the environmental and social factors contributing to the abandonment of those types. And six, it helps to develop awareness about our own urban myths on sustainability in the context of change.

Thesis Supervisor: John A. Ochsendorf
Title: Assistant Professor of Building Technology
Acknowledgments

I wish to acknowledge the valuable cooperation from those who in one way or another helped shape this research. The first mention goes to the Secoya builders, especially to Cesáreo and the Piaguaje Payaguaje family. They shared valuable information not contained in books and which forms an important part of this thesis. I would like to extend thanks to my thesis committee, formed by Professors Reinhard Goethert, John Ochsendorf and Ann Pendleton-Jullian from the Department of Architecture at the Massachusetts Institute of Technology, and Professor Gary Urton from the Department of Anthropology, at Harvard University Faculty of Arts and Sciences. They were extremely helpful in the systematization, analysis and final presentation of the gathered data and reflections. Special thanks also go to Robert D. Ordner for his generous support and mentorship.

The two-year mental process of organizing the thesis ideas would have simply not been possible without the practical help, time, patience, courage and faith transmitted by Jennifer Rulf and her family, with whom I will always be grateful.

Finally, I would like to thank my family, especially María Victoria, for the opportunity to work together in the Ecuadorian rainforest and for sharing her practical vision, shaped by her scientific background, of the socio-environmental problems that today affect this territory. The thesis puts in writing some of her valuable teachings I was afraid she would never write about. In a more personal respect, I would like to thank her for the dreams, the risks and the laughter we enjoyed. A special mention must also go to Santiago and Federico for their valuable cooperation in making possible my trip to Cambridge and my enrolling at MIT, and to mom, for speaking on behalf of me to the big mom, every week, candle in hand. And, of course, to dad for inspiring my work with his personal mythologies that also need to be documented.

Thanks to all.
# Table of Contents

Foreword 8

**Part One**

Chapter 1: Introductory Aspects 11
  1.1. Introduction 12
  1.2. Sources 14
  1.3. Difficulties 16
  1.4. Outline of the Thesis 17

**Part Two: Description of the Three Secoya Building Landmarks** 19

Part Two Initial Remarks 19

Chapter 2: Tui’que Huë'e 20
  Initial Remarks 21
  2.1. Context 21
  2.2. Description and Materials 22
  2.3. Space 25
  2.4. Structure 26
  2.5. Building Technology 28
  Final Remarks 29

Chapter 3: Pa'pa Huë'e 30
  Initial Remarks 31
  3.1. Context 31
  3.2. Description and Materials 33
  3.3. Space 36
  3.4. Structure 37
  3.5. Building Technology 39
  Final Remarks 40

Chapter 4: Zinc House 41
  Initial Remarks 42
  4.1. Context 42
  4.2. Description and Materials 43
  4.3. Space 46
  4.4. Structure 47
  4.5. Building Technology 50
  Final Remarks 51

Part Two Final Remarks 52
Part Three: Ethnohistorical and Ethnoarchitectural Aspects of the Secoya Building

Chapter 5: Ethnohistorical Aspects of the Change

5.1. The Ethnohistorical Context of the Tui’que Huë’e

5.2. The Ethnohistorical Context of the Pa’pa Huë’e

5.2.1. The *Quichuization* of the Upper Amazon

5.2.1.1. Why is the Pa’pa Huë’e Also Called Quichua House

5.2.2. Why Missions and not Simply Towns

5.2.3. How Missionaries Affected Upper Amazonian Architecture

5.2.4. Implementing the Double Pole Structure: The Problem of the Materials to Build the Mission

5.2.5. Spreading the Solution Globally

5.3. The Ethnohistorical Context of the Zinc House

Final Remarks

Chapter 6: Ethnographic Aspects Concerned in the Secoya Building Change

6.1. Tui’que Huë’e’s Building Principles, as Expressed in the Secoya Myths


6.3. Building as a Way to Express Ethnicity

6.4. Building Maintenance as a Social Cohesive

6.5. Kinship and Building

6.5.1. Kinship in the Process of Change

6.5.2. The Stability of Kinship Structures

Final Remarks

Part Three Final Remarks

Part Four: Understanding the Change Between Landmarks

Chapter 7: Reflecting on the Change: Economic and Building Related Aspects

7.1. Economic Aspects

7.1.1 Longevity (In relation to economic system)

7.1.2. Costs

7.1.2.1. Environmental Cost

7.1.2.2. Financial Cost: Durability in Relation to Returns

7.1.2.3. Time

7.1.3. Goodwill
Foreword

Until recently, the theme of indigenous architecture had been largely ignored in architectural theory produced in the United States. Most of the books on the history of American architecture began their accounts in the 17th century. Only recently the pre and post-contact indigenous architecture became part of this history. As for Latin American architecture, the theme of semi-permanent, forest dwellings composed of thatched palm and wood continues to be marginalized. Theorists of Latin American indigenous architecture are mainly interested in the great urban architecture in stone, particularly that of the Incas, Mayas and Aztecs.

The importance of the topic of indigenous forest architecture goes beyond being merely architectural, because objectively, and to a certain extent, these building solutions have little to teach the great tradition of Western architecture. Its importance is not based on what they display externally, but what they symbolize or imply. It is not the product but the concept that matters in this architecture. It is not what appears constructed, but the mental re-construction that people make about the space they inhabit. Where we as outsiders see one single indistinct "hut," the builders and dwellers see the cosmos in many different shapes, one per linguistic group\(^1\), dozens of them in total. Where outsiders see a forest to explore on an exotic trip, or, if more aware, a forest vanishing due to increasing exploitation, the communities see themselves trapped between large-scale industrial exploitation and limited access to their natural resources. Where we see increasing slum-type houses, they see themselves rushing to adapt their housing to a changing world, creating in effect, a tradition of change within their traditions; moving forward with uncertainty, but decision.

It is hard not to be moved by the overwhelming number of environmental and social issues taking place today in South American rainforests. It is hard to assume an objective stance when doing research there and not get emotional, be judgmental, or in general make it too personal. It is easy to get lost in the many possible ways to understand the facts, the many hypotheses, the many sources, the many possibilities. While trying to write what I expect to be a consistent study in English on the phenomenon of architecture in the Upper Ecuadorian Amazon,\(^2\) I am conscious that I risk getting lost in the marañón, the big tangle of ideas. Therefore, my compass will be architectural change. I believe that accepting this change as a fact, rather than lamenting it, helps us understand what has really been happening there. The change in Secoya\(^3\) housing solutions throughout history is, in fact, the change in environmental and social conditions they have had to confront for centuries. The change in their house is more than simply a change, and the Secoya building is more than just architecture. It is a testimony to environmental conflicts, social crisis, economic incertitude, and a permanent struggle for survival. It is not because of the complexity and the sophistication that the Secoya building is worthy of interest. It is not even

---

\(^1\) Notice the use of the word group instead of tribe. The reason is explained in the glossary.

\(^2\) The characterization of the area that is comprised in the thesis under the name of Upper Amazon appears in the glossary.

\(^3\) For a description of who the Secoya are, see glossary.
because of its synthesis and simplicity. It should be, but is not, because those masterful, simple technologies and space solutions are almost gone. The importance of studying this type of building is that, since its disappearance is a direct consequence of environmental and social concerns, in some way this warns us about our own future. The extinction of housing types\(^4\) in the Amazon is the product of striking changes that, sooner or later, will affect us all, because that forest is the climate regulator, the water stock, and in many more respects the environmental reserve of the entire planet.

Architecture, in consequence, acts in this case as a pointing device for very crucial issues. How environmental and social problems affect architecture, and how architecture itself affects change are points that make us again consider how powerful a social force architecture is. Despite its functioning as a symbol of eternity and stability in Western culture, architecture can be a fine variable of change as well.

This justifies giving special attention to architecture among the many facets that have changed for the Secoya. A discussion on architecture will invoke all those facets: history, technology, economy, myth, sustainability issues and more, in one single body. Through analyzing change in the Secoya building tradition, we will clearly understand their larger cultural change and ideally move beyond to consider how it affects us as well.

Another reason to focus on architecture is the need to confront the conventional idea that the forest is the most important element for Amazonian cultures. I believe that architecture is just as important as the forest for these cultures. They are passionate about construction and that is easily seen through the fact that building is everywhere in the Secoya culture, from the old myths to proverbial teachings\(^5\) to the present reality in which, for instance, construction material was most of what the Secoya asked for when negotiating an exploration agreement with an international oil company. It is because of this protagonist role that architecture has always appeared inextricably linked to the Secoya process of change throughout history.

The third and final reason why I have chosen to focus on architecture is related to the significance of the time I spent working in the Upper Ecuadorian Amazon between 1997 and 2001. That was, by mere coincidence, the time during which the Secoya were in the midst of one of the most dramatic changes in their building history, that of the shift from the Tui'que Huê'e to the Zinc House.\(^6\) Witnessing such an historical moment allowed me to gather both excellent documentation and arguments, enabling me to make a valuable contribution to the

\(^4\) The context in which the terms type and typology are used in the thesis is explained in the glossary.

\(^5\) A Secoya proverb goes:

"The house builder tells the young man:
Get a hard-hearted pole."
(Piaguaje Payaguaje n.d., 62).
Secoya songs and proverbs have the coded construction of a Haiku. They may not fit into our Western logic of cause-and-effect that well, but they definitely reflect the importance that building has in the Secoya culture as a point of reference for life.

\(^6\) A short characterization of the Zinc House appears in the glossary.
study of Amazonian architecture as an indicator of change, a contribution to the knowledge base in English on the topic of Amazonian building, and in general, a contribution to the understanding of Secoya building tradition.
CHAPTER 1
Introductory Aspects.

This chapter contains the theoretical context of the thesis. It includes an introduction that shows the motivation for undertaking this research, explains what is exactly the research about and describes the main goals. After that, there is a review of literature and other sources of documentation that were used in the thesis. Finally, there appears an outline that describes the three parts in which the arguments and conclusions of the thesis are presented.

Fig. 1.1. Map of the studied area.
1.1. Introduction

In November of 1993 an indigenous Amazonian group of about 300 people, the Secoya of the Aguaro River became stars of the environmental activism world, by filing a class-action suit in New York against the multinational oil company Texaco Inc. In the lawsuit, they argued that Texaco had damaged their environment by using negligent industrial practices in their oil exploitation of the Upper Amazon. These practices severely contaminated their water sources and soil systems, seriously endangering them. Barefooted, and wearing seed studded collars and colored tunics, they were asking for 1.5 billion dollars in reparations. There is no doubt they embodied the universal ideal of David versus Goliath and many people loved them for that.

Ten years later, while still struggling with that lawsuit, the Secoya way of life had changed. Oil explorations revealed at least four new potential oil sites in their territory. They had gone through a long and stressful process of discussions over those sites with another multinational corporation, Occidental Petroleum Company (Oxy). Despite what everybody was expecting, they finally agreed to negotiate with Oxy to explore the sites, and the company soon installed camps right behind the main Secoya settlements. The settlements, and the Secoya's daily concerns changed completely in a matter of a couple of years. From villages of thatched palm and raw wood houses where everybody lived a traditional way of life, the three main Secoya locations in Ecuador became small towns with houses made of steel and sawed wood, and where traditional attire, such as that worn in the lawsuit hearings, was relegated to the elders and to official activities. Neither the Secoya nor their settlements would look "indigenous" from that moment on.

That literally broke the hearts of many people who had been by their side in the confrontation against the oil giant. Many of their supporters decided to embrace other causes. Environmentalists went on to fight for other groups like the Hoaorani or the Quichua, who refused to negotiate their oil-rich land. Eco-tourism operators cancelled most of the tours to Secoya territory saying that there was not much to see there anymore. Researchers had problems trying to present Secoya culture as interesting—or exotic—enough to compel funders.

---

7 The suit was filed in association with other indigenous groups and colonos ("colonists") from the area.
8 In 1997, the relation between the number of Pa’pa Huë’ña and Zinc Houses in San Pablo was about 65% to 35%. Six years after, in the summer of 2003, only a few Pa’pa Huë’ña remained, while approximately 95% of the houses were in Zinc (my personal observation in both cases). Between both dates, there existed only one single, inhabited (demonstrative) Tui’que Huë’e (one fell down in 1997 and one was built in about 2001).
9 For a brief description of who the Quichua are, see glossary.
This thesis is dedicated to change in Secoya building practices, which have accelerated significantly since 1993, but have actually been occurring for a long time, arguably throughout their whole history. The thesis poses the question was this change avoidable? and concludes that it most likely was not. There were so many factors from so many sides pushing them to change that it is difficult to imagine how they would have succeeded in preventing it. Those many factors involved historical tendencies, political realities to which they were subjected, social issues, environmental circumstances, a whole universe of reasons. I have grouped them in two main categories, in order to make the thesis understandable: economic problems and problems related to building.

The main conclusion of the thesis is, as people concerned about the sustainability of our planet, we should not feel disappointed that the Secoya decided to change, but rather to consider the implications of their change for us. One of the most significant outcomes could be our developing an awareness of our own myths, those that pop culture upholds regarding change in environmentally and culturally threatened areas. Using one specific factor, architecture, in one specific setting, that of the Secoya territory, the thesis provides arguments for why we must rethink our popular views. Since both architecture and the Secoya case will be the tools, and sustainability will be only one of many possible implications of the study, it is not expected that this thesis be a complete ethnography on the Secoya nor an extensive analysis of today's theories on sustainability. Instead, it should be considered an analysis, from an ethnoarchitectural point of view, of a current situation that has implications for us all.

---

10 By this word I mean making an assessment of their architecture from a different point of reference, one that studies buildings in relation to their own context and evolution, rather than against the universal conventions with which architecture is normally critiqued.

Part One – Introductory Aspects
The name of the thesis comes from a narrative by Fernando Payaguaje, the last great shaman\(^{11}\) of the Secoya.\(^{12}\) He used to say that when shamans get the highest level of mastery they go into a never experienced deep trance in which they are able to walk into a longhouse in which God lives in heaven.\(^{13}\) The house, according to him, looks like a Tui’que Hué’e,\(^{14}\) but it is different because it glitters, as if made of steel or plastic.

That he used industry as the preferred metaphor to describe what would be the most heavenly material for a maloca\(^{15}\) to be made of, does not only express the great sense of appreciation that the indigenous have for durable materials (and who does not?). Fernando’s trance also announced a phase that is yet to be seen in the evolution of Secoya building. One in which the oldest building practices can be integrated with high-end industrial materials in a harmonious way, rather than being mutually exclusive as is the case today. Hopefully there will be a day in which the younger Secoya attempt to in that direction, the one that was revealed a while ago to their elder Yaje\(^{16}\) drinkers.

1.2. Sources

Written material on the Secoya group can be obtained from three main sources: book references devoted exclusively to the Secoya, ethnographies and other books that mention them superficially, and ethnographies on other Amazonian groups such as the Tucanoan, whom are to some extent related to the Secoya.

The Secoya are first mentioned in early accounts of the attempted conquest of the Amazon, those that were written by Catholic missionaries\(^{17}\) like Laureano De La Cruz ([1653?] 1999), Pablo Maroni ([1738] 1988) and José Chantre y Herrera ([1799?] 1901). The second wave of writers on the Amazon, those journeys and explorers of the 19th century also mention them. Simson dedicates a paper in the 1879 volume of the Journal of the Royal Anthropological Institute of Great Britain, and a chapter in his travels book (1886 and 1993) to the Secoya. The Secoya were for the first time analyzed with a strictly ethnographic perspective by Tessmann in 1930 and then, under the entry Western Tucanoans, by Steward (1948) in the Handbook of South American Indians. Specific research work that included prolonged stays with the

---

\(^{11}\) The context in which I use the word shaman in the thesis is presented in the glossary.

\(^{12}\) The shaman passed away in 1994.

\(^{13}\) Fernando told the story to Father Miguel Ángel Cabodevilla, who compiled it along with many others in the celebrated book El Bebedor de Yaje ("The Yaje Drinker" [Payaguaje 1994]). Fernando’s autobiography. His experience in that surreal maloca has also been described by other shamans as typical of reaching a special level of enlightenment.

\(^{14}\) A short description of the Tui’que Hué’e appears in the glossary at the end of the thesis. Also in the glossary the meaning of the word Hué’e, "house" is explored.

\(^{15}\) The meaning of the generic term maloca is also explained in the glossary.

\(^{16}\) For an explanation of what Yaje is, refer to glossary.

\(^{17}\) The importance of missionaries in the Upper Amazon building history is detailed in the glossary and in Chapter 5.
community began only in the late 1960s, and was presented much later. The first complete ethnography on the group is a 1976 unpublished University of Florida PhD dissertation by William Vickers. An updated Spanish version of the thesis was published in 1989, with a second edition in 1996. Vickers prepared a section on the Secoya in the book he co-edited with Raymond Hames in 1983. He also wrote about their useful plants and their adapting tradition and modern religion. Vickers is currently the most referred to source on the Secoya. On the other hand, the two-decades long work that the Summer Institute of Linguistics had been conducting on documenting the Pai coca language was published in the early 1990s (Johnson 1990, Piaguajes and Johnsons, 1992).

Hispano-American researchers started publishing on the Secoya just in the 1980s, but since then they have done valuable work collecting myths and mytho-historical narratives. The most outstanding ones are the works by Miguel Ángel Cabodevilla (1997 and appearing also as ghostwriter in Payaguaje (1994), Maria Susana Cipolletti (1987, 1993) and Ruth Moya (1992). There exists also a bilingual (English-Spanish) compilation of stories edited by Jaime Hernandez Parra (1997) and an undated, bilingual (Pai coca-Spanish) compilation of Secoya songs, stories, proverbs and conundrums made by Secoya teacher Ángel Celestino Piaguaje in approximately 2000. Recently, the State oil company Petroecuador published a work based on narratives by Matilde Payaguaje, a respected Secoya matron and sister of Fernando. The work is complemented with information from builder Belisario Payaguaje and ethnographical remarks written by Jorge Trujillo and others (Payaguaje, Trujillo et al 2002). Most of the ethnographic work has been published adding the main Secoya informants as co-authors and all of it has had the active participation of Secoyas in providing crucial information.

The thesis was not based only on a reading of the available literature, however. An important source of documentation is constituted by my own experience as a builder, working and interacting with the Secoya at several different occasions over a period of four years. I held many conversations with Secoya colleagues between the years 1997 and 2001. I documented those I held with Cesáreo, César, Elias, Esteban, Marcelino and Simón. I had the opportunity to obtain a lot of valuable knowledge from our interaction during three stays in 1997 in San Pablo, Siehuaya and Eno; one in 2001 in Playas del Cuyabeno and one in 2003 in Remolino, Siehuaya and San Pablo. During those visits I collected an important amount of information and personal observations on the Secoya building situation, and consigned it in the form of field notes, video and tape recordings, photographs, and virtual and physical models. This material forms an essential part of the thesis while the book references have been utilized to confirm information and impressions gathered on site or determine whether it was already documented and in what way.

---

18 The type of work that the Summer Institute of Linguistics does is explained in the glossary.
19 A short comment about the Pai coca can be found in the glossary.
20 In the glossary I dedicate a few words to this remarkable old Secoya. I quote him literally in some parts of the thesis, making no editions at all to his special way to construct sentences in Spanish. This is not his mother tongue and he only uses it when needing to confront issues, usually conflictive ones, with the outside world. However, his way of speaking it is tremendously poetic while strong, expressing clear, sometimes even crude facts with only a few words.
1.3. Difficulties

The available sources presented a particular challenge to the research:

a. Difficulties related to bibliographic research. There are not too many antecedents on this type of analysis (in particular, architectural analysis of vernacular types in the Upper Ecuadorean Amazon). References, in consequence, must come mostly from non-architectural, or even non-bibliographical sources (personal communications). They appear scattered in books or narratives on the Secoya, hidden in their myths, implied in their talking, or transmitted without words in their buildings.

b. Difficulties related to collecting facts from informants. The Pai coca does not allow an exact translation into English or Spanish, but only a contextual one. If it is true that such difficulty is common when translating any language into other, the case of the Pai coca seems particularly complicated because it expresses a very different way of thinking about the world. Because of this, there were questions that could never be clearly responded to as the informants saw no point in them or the answer did not appear relevant.\(^2^1\)

c. Difficulties related to finding objective means to prove hypothesis or conflicting information. Lack of historical and archaeological records on the area does not allow certainty in some aspects of the Upper Amazon indigenous history. The main source on their early history consists of their myths and narratives, which are stained by time and cultural change. That implies a permanent necessity to do lots of double-checking, guessing and analogies.\(^2^2\)

---

\(^{21}\) Some of the most crucial facts the researcher needs to know are related to the meaning of words or expressions. What, for example, does Tui’que Huê’e mean? I faced difficulties because, first, an approximate equivalent to the word "meaning" does not seem to exist in the Pai coca language, so questions involving the point of meaning were problematic. Then, if finally the situation was overcome, the second inconvenience was what sense did the question make. There are questions that make total sense for the researcher, but not for the informant. Why, for example, does the researcher want to know the meaning of the word house? The Pai coca expression for house might encompass interesting information, but for research-oriented people, not for lay people, no matter where. Probably, if Secoya researchers came to the United States and asked informants why people give the name "house" to their houses, they would not always find informants to explain them to them that the meaning of "house" is related to "fire." The informants would probably just find the question of why houses are called houses annoying and completely nonsensical. They would respond, if asked for more information, that it is a house because it has a roof and has walls. It is the same case for the Secoya when outside researchers ask annoying questions. Their answer, Tui’que Huê’e means Tui’que Huê’e, and if more information is requested, it is named such because it has a roof made of palm fronds and has no walls. At this point, I am still not certain as to exactly what Tui’que Huê’e means, but the Secoyas must be right. It is a house.

\(^{22}\) This is not a specific limitation of this thesis but rather a constant for most of the studies undertaken on Amazonian culture.
d. Difficulties related to cultural issues. Exoticism and anti-exoticism: for one part, our myth of the noble savage conflicts with any proposition that these cultures have evolved, that they are not pre-Neolithic as commonly believed. On the opposite side, pre-conceptions about the abilities and skills of uncontacted people make it difficult to argue that this kind of building is worthy of interest from an architectural perspective and not only from an ethnographic one.

1.4. Outline of the Thesis

The arguments of the thesis are presented in three separate though logically interconnected parts, those numbered from two to four. In Part Two, I make an objective presentation of the three landmarks in the process of change, the Tui’que Hué’e, the Pa’pa Hué’e and the Zinc House. In Part Three, I offer basic information for a better understanding of the process of change. I do this in two ways. On the one hand, I develop an ethnohistorical discussion focusing on the social and architectural facts surrounding the appearance of each building landmark. On the other hand, I present a series of ethnoarchitectural considerations in order to clarify the cultural context of the Secoya change, and to highlight what at a cultural level represents their having changed. Part Four is dedicated to an analysis of the forces that triggered the change first, and then to conclusions on how change and sustainability relate to each other and what can we learn from that.

The development of the thesis topic begins in Part Two with a detailed description of each of the three house types. Tui’que Hué’e, Pa’pa Hué’e and Zinc House are the most outstanding in the building history of the Secoya. They arise from an intricate history of evolutions. One of the positions the thesis sustains is that such history has mainly occurred around them, and for this reason it is necessary to describe them first. That will enable us to have them in mind when, in the third part of the thesis, we learn about the evolution itself, and in the fourth, we deal with the conclusions. In order not to anticipate the discussion on historical change, the types will be described in present tense.

The thesis then offers, in Part Three, some supporting facts and analysis on the process of change in Secoya architectural expressions. An ethnohistorical and ethnoarchitectural section was necessary in the work in order to allow readers to understand the context of the little known Secoya building tradition. Making this thesis an exclusively ethnohistorical work was always tempting. However, I would have probably fallen short because historians typically enter the scene once everything has already happened, yet situations are still developing in the Secoya case. A new situation can occur in the context of documentation. Virtual CAD models of the building types that are now rarely built, plus tapes, written material and pictures can become a substitute memory for the young Secoya people, one they can invoke whenever they want to know about the history of their building tradition. Documentation becomes the last repository of building knowledge shared by men that are now sixty or more years old. This work, in consequence, could in some ways generate action, and therefore it cannot be limited to the

---

23 A short description of the Pa’pa Hué’e can be found in the glossary.
purely historical. However, historical and ethnographical documentation is still necessary in order to make that action possible.

In Part Four, the thesis demonstrates how change matters not only for its own sake, but because it explains other factors that concern not only the Secoya but all of us, sustainability being perhaps the most important today.

By assembling the ideas in this way, the thesis represents my three main professional interests. Those are: the interest in documenting that appears reflected in Part Two of descriptions, the ethnoarchitectural interest in the analysis of the third part, and finally the action-oriented interest in the fourth one. At the same time, this organization makes it possible for the public to focus on any one part independently, according to their own interest.
The second part of the thesis is an objective description of the three main Secoya building landmarks. The types are described following the same order of ideas, which explores the context, appearance and materials, space, structure and technology of each type. Following this order helps us see how different are these types in relation to each other. This supports my assertion that the Secoya building in fact changed considerably over time. Although the descriptions situate the houses in their historical context, their specific historical background will be detailed in Part Three, Chapter 5.
CHAPTER 2
Tui'que Huē'e


(You drop sand over the soil, so you make a base underneath the hammocks to sit on. It is nice. Everybody does it, and everyone sleeps in hammocks. Each one sleeps in their hammock. Each one in a hammock, and on the soil. And in the middle, it is empty. It is beautiful. Tui’que Huē’e.)

(Cesáreo 2003).

Fig. 2.2. The Tui’que Huē’e.

---

24 From Tui, "to hang up" (Piaguajes and Johnsons 1992, 146), qug "to stab" (110), and Huē’e, "House."

Part Two – Description of the Three Secoya Building Landmarks
Initial Remarks

This is a description of the oldest documented Secoya house, the Tui’que Huë’e. The description details five main aspects: context, general description and materials, internal space, structure and its building technology.

The context of the Tui’que Huë’e is that of a communitarian house to be used by a group of hearth families who support themselves by hunting, gathering and some slash-and-burn horticulture. There is only one house per settlement and this is temporarily occupied, for up to 15 years, time after which the place has to be abandoned. As for its general appearance and materials, the house is the largest one of the three Secoya building landmarks. It is rectangular with semi octagonal ends and it is oriented east west. It is made out of materials of vegetal origin such as trees, palms, and vines. The internal space has no physical separations (no walls) and living happens in the soil surface, with no floors. Space and building parts have highly symbolical connotations; the central space, for instance, has to remain empty. Because of its scale and use of the materials, the house is thermically insulated. Finally, although the house is very geometrical, its structure is not strictly precise. The search for precision with the inherently imprecise raw materials make the building process more complex than that of the Pa’pa Huë’e and the Zinc House.

Characterizing the house in this way will provide us tools to contrast it with the other two types. The Pa’pa Huë’e is the next one to be described.

2.1. Context

The historical setting this house corresponds to is that in which the Secoya, led by a shaman, do community hunting, gathering and some slash-and-burn horticulture, while living in extended families. A Secoya extended family unit (a "sib") builds a new Tui’que Huë’e, being careful to locate it far away from the Tui’que Huë’e of the closest Secoya sibs or relatives.

25 The description of this house is based on the reading of fragmented reports in ethnographies, the observation of pictures in books and the exceptional opportunity to document what could be the only existing example of a Tui’que Huë’e in all of the Secoya territories, including those of Ecuador and outside (Jonathon Miller, email to author, July 21st 2004, citing communications from Secoya informers). This is a demonstrative model built a few years ago with funds channeled through Osa Foundation. The master builder was Delfín Payaguaje, with the help of his sons, Alfredo and Miguel. "Don Delfín—says Miller—had to meditate for many days to remember exactly how it was built."

26 How far? The convention, in other groups such as the linguistically related Colombian Ufaina (Von Hildebrand 1983, 180) is that they have to locate it at least one walking day away from the nearest maloca.
For that reason, the Tui’que Huē’e is an isolated house, being built only one per given spot. The location is chosen by considering the availability of food supplies and building materials, as well as strategic advantage over strangers, wild animals or situations that can present trouble. It may be located near a fresh water stream or a river, in which case it will be built in a spot that is hidden from people canoeing through.

Although reasonably hidden and not having any other Tui’que Huē’e nearby, the house does not appear alone in the landscape. There are minor structures or tambos\(^\text{27}\) around it. They are used as temporary cottages for situations related to Secoya religious beliefs. Houses for sick persons, menarche houses, "men’s houses" and ari huē’e or "small houses," for shaman’s apprentices, are some of the particular uses.\(^\text{28}\)

And, even though it lasts much longer than the tambos around, the Tui’que Huē’e is also a house for temporary occupancy, lasting on average between 1 and 15 years. During that time span it needs constant repairs, especially in the roof. Replacements to some of the rotten roof fronds commonly start after the first year of habitation.

2.2. Description and Materials

All the materials the house is composed of are of vegetal origin and largely unmodified. For this reason, the entire house decomposes and integrates into the soil relatively quick.

The area of an average-size Tui’que Huē’e is approximately 188.50 square meters\(^\text{29}\) (17.15 by 11 meter). Its total height is approximately 6.50 meters. The house is strictly oriented east west, which coincides with the direction of the predominant winds in the Secoya territory.

\(^{27}\) An extended definition of the word tambo appears in the glossary.
\(^{28}\) For a more detailed explanation, see below under "types in connection."
\(^{29}\) In terms of scale, this is a considerable area, since we are talking essentially about one single room that size.

Part Two – Description of the Three Secoya Building Landmarks
The house was in the past in deep connection with the Secoya tambo, probably called Huetara Huë'e. According to Cesåreo's descriptions (2003), Huetara Huë'e's area was similar to that of the Pa'pa Huë'e (6 by 6 meters), but it was only a two-pitch structure with open ends ("...No hay culata, Huetara Huë'e así" [Cesåreo 2003]) and floor on the soil. Tessmann (1999, 112) made a diagram of a structure that coincides with this description, but he was given for it a generic name he wrote as Yadi wü'i'e, in reality A'ri Huë'e, which literally means "small house" (Piaguajes and Johnsons 1992, 10, 230). Vickers (1976, 160) talks about these tambos and describes their crucial role in ritualistic activities despite the comparative insignificance of their scale and structure in relation to the Tui'que Huë'e. Indeed, they were used as sleeping cottages by shaman apprentices during the time their wives' menstruation period lasted. Tessmann (1999, 126) described also a "small hut" in which girls were secluded during the menarche period. The recently abandoned Yaje house (drawn in Payaguaje 1994, 119), a long, two-pitched structure to perform rituals involving the Banisteriopsis, had a similar structure in an elongated version.

Because the rafters of the semi-octagonal sections do not meet in the same point but they go one on top of the other, a roof that appears like an 8-pitch one ends by being a 16-pitch one. That is how the Tui'que Huë'e's roof is in actuality a quite complex 34-pitch one.

The roof material is the frond of an efficient roofing variety of palm Cesåreo calls with the Quichua name Huachipango (2003). It is necessary to collect more than 11,000 palm fronds to roof the house. The fronds stay in place by being woven to long (up to 6.15 meters or so) and narrow (1 by 1 inch) purlins made up of worked Yaripa (Cesåreo 2003) (ireartea sp. [Payaguaje, Trujillo et al 2002, 214]), a particularly resistant variety of palm, in the way shown in Figure 2.4. Rafters' lower end appears at a considerably low height, only 1.35 meters from the soil level. Due to that, the wall is partially covered by the thatched palm. The wall is made of sticks approximately 1.40 meters high, with a diameter of two inches and separate from each other a distance of one inch in average. Such separation turns it into a sort of semi-transparent wall

---

30 The house was in the past in deep connection with the Secoya tambo, probably called Huetara Huë'e. According to Cesåreo’s descriptions (2003), Huetara Huë'e’s area was similar to that of the Pa’pa Huë'e (some like six by six meters), but it was only a two-pitch structure with open ends ("...No hay culata, Huetara Huë'e así" [Cesåreo 2003]) and floor on the soil. Tessmann ([1930] 1999, 112) made a diagram of a structure that coincides with this description, but he was given for it a generic name he wrote as Yadi wü'i'e, in reality A'ri Huë'e, which literally means "small house" (Piaguajes and Johnsons 1992, 10, 230). Vickers (1976, 160) talks about these tambos and describes their crucial role in ritualistic activities despite the comparative insignificance of their scale and structure in relation to the Tui'que Huë'e. Indeed, they were used as sleeping cottages by shaman apprentices during the time their wives’ menstruation period lasted. Tessmann ([1930] 1999, 126) described also a "small hut" in which girls were secluded during the menarche period. The recently abandoned Yaje house (drawn in Payaguaje 1994, 119), a long, two-pitched structure to perform rituals involving the Banisteriopsis, had a similar structure in an elongated version.

31 Because the rafters of the semi-octagonal sections do not meet in the same point but they go one on top of the other, a roof that appears like an 8-pitch one ends by being a 16-pitch one. That is how the Tui'que Huë'e’s roof is in actuality a quite complex 34-pitch one.

32 The standard is that in order to roof 50 square meters there are necessary 3,000 palm fronds (Klinger 2003). Roofing 188.50 square meters would require 11,310 fronds.

33 The common names this palm receives in Ecuador are Chonta, Pambil, or Chonta pambil.

34 The sticks are called, along with the rafters that hold them, Jejatiño’a, the "roof’s branches" (Payaguaje, Trujillo et al 2002, 71).
that surrounds the house like a ring that is separate from the structure, therefore the poles do not interrupt the continuum of sticks. The sticks stand without being attached to the structure because their bottoms are embedded in the soil and their tops are anchored to some of the roof purlins, while in the middle all of them are tied together by vines. 

The entrance of the house appears in an inconspicuous place located near the conjunction where the west side of the house ends and the curvature of the north octagonal end starts. The door is strikingly small, only 1.25 meters high by 0.30 meters width, and there is not any fastener to lock it nor any complicated technological solution for its forming. In fact, it is only an opening, thus, if wanted closed, more sticks can be added to the whole, continuing the course of the wall and therefore not giving any clue to passersby about where the door is located.

Fig. 2.4. Detail of the Tui'que Hu'e'e's roof and door.

---

35 The name of the preferred vein for the building is Ya'i (carludovica trigona [215]). It is as resistant as scarce.

Fig. 2.5. Scale comparison of the three houses' front views.

Part Two – Description of the Three Secoya Building Landmarks
The house has no windows at all. The only openings other than the diminutive door are a couple of similarly diminutive triangular skylights in the endings of the house's ridge pole (right by the geometric center of the semi-octagons). They result somehow incidentally, as a consequence of the meeting in one point, at different levels, of the rafters of the semi octagonal ends. 36

2.3. Space

Since it does not have any major openings or perforations, the house is consistently dark at all times, even at noon. However, small light spots crossing throughout the skylights, throughout spaces between the palm leaves and throughout the sticks that form the exterior wall, generate a suggestive game of shade-versus-focused light inside the house. The smoke generated through cooking joins, augmenting the suggestive atmosphere. Also on account of its not having large openings but small perforations everywhere, the temperature of the house remains comfortable even when outside is hot.

Because the house does not have any covering floor, the occupants live directly on the soil, which is covered with a layer of sand (Cesáreo 2003). Due to permanent use, the floor tends to be dark and well "rolled." There are no walls inside to separate the hearth families that compose the extended one. 37 Walking, sleeping, cooking and spiritual invocation areas are strictly defined by social conventions having the poles of the structure as the reference points. The space division is further defined through the use of scale effects. The central space, for instance, is not crossed by any beams at all between soil and roof, while the lateral spaces are. This creates the perception that they are

---

36 The upper ends of the raw-wooden rafters do not converge in one single point. They would if they were pointed, but they are not. They keep the same diameter until the end. In consequence, the recourse the Secoya builder uses to make them converge is to put one on top of the other, forming a spiral (See Fig. 2.6), and to locate a short beam holding the two rafters that carry on the rest. The difficulty to weave palm leafs between that little bunch of wood makes that corner not to hold the thatch for a long time and that is how the skylight naturally appears after a while.

37 The hearth family is a smaller family unit inside of the extended group. When the extended family splits, hearth families become the basis of individual organization.

Part Two – Description of the Three Secoya Building Landmarks
smaller than they are and therefore less important, yielding all sense of majesty to the central space. There is a purpose to this. The central space is revered and is therefore not meant to be occupied by anyone (Payaguaje 1994, 35; Cesáreo 2003). The raison d'etre for this reverence could be related to mythical stories (see chapter 6). The respect that must be reserved for this space, the way the space itself is landmarked by some of the poles and the spatial hierarchies are some of the most distinctive features of the Secoya Tui'que Huë'e.39

Not only space but also structure obeys mythical remarks. Just like they show respect for the center, the Secoya revere a beam that represents a mythical fight between God and two antagonists,40 and show appreciation for the joints that tie together the structural parts of the Tui'que Huë'e.41

2.4. Structure

Structural parts are fastened by vines. The main structure is built out of raw trunks of Yaripa.42 The diameter of these poles is around 0.20 meters. One of them, approximately 6.10 meters high, is the structural origin of each semi octagon (See fig. 2.8). At its center are two sets of concentric poles, one interior of a radius of approximately 1.90 meters, made of columns that are approximately 4.35 high, and one exterior of 5.00 meter radius and columns that are approximately 1.60 m high. The visual connection between the first and last poles of the internal set of each semi octagon and the corresponding two in the other one, defines the virtual "fence" for the restricted central space.

---

38 Respect for the central space is a common feature in the building types of many of the Amazonian groups.
39 Tessmann, in fact, was informed that when someone died he or she was buried underneath that central space, and the house was abandoned right after ([1930] 1999, 127).
40 Unfortunately, the location of this beam is not clear in the ethnographies that documented this crucial feature.
41 For details in both cases, see chapter 6.
42 Probably before it could have been the trunk of a resistant tree such as Guayacán, because Yaripa was preferred to make cubs and knives.
That fence is completed by two additional columns in the rectangular segment of the house, in the midway between the two internal semi octagonal sets of poles. For its part, the visual connection between the first and last poles of the external set in the two semi octagons sets the periphery of the house, which is also marked by an additional pair of posts in the mid distance.

The internal set of the semi octagon contains five columns. The external one contains nine. The extra four ones result from installing one more column between each pair of columns corresponding to the internal five. Just as radial lines coming from the center of the octagon determine the location of the internal and external columns in the soil—at 45 degrees the internal ones and 22.5 degrees the external—they mark the direction of the rafters in the roof. There are a total of 19 rafters, nine that go on top of the internal and/or external columns, plus eight more that rest on the beams joining each pair of external columns. The additional two rafters double the two that are the edges of the semi octagons.

An inherent and strong sense of geometry is apparent in the building of the house. However, geometry in the scale of detail is not exact. Tui’que Huë’e’s is geometry by approximation, obedient to what nature both imposes and offers to the builder. The numeric information when describing one of these houses must be provided in terms of ranges or of approximate values, because dimensions of similar constructive pieces and separations among them often vary. There are two reasons for this. One is that the measurement tools are inherently inexact (although delightfully natural): they are the human body, vines and sticks. The other reason is the crude nature of the building materials. It would be simply impossible to get 36 perfectly straight, 6.60-meter beams in nature to build geometrically perfect semi octagonal structures, unless the beams are industrially manufactured.

---

**Fig. 2.8. Structure of the Tui’que Huë’e.**

---

43 Very strongly oriented to polar geometry, more than Cartesian as it can be seen.
Despite two serious constraints in measuring tools and materials, how can the house still stand and maintain an overall sense of geometry and evenness? Amazingly, this is achieved not by avoiding the irregularities of the material—which are impossible to ignore—but by choosing them carefully. Straightness in the Tui’que Huë’e is guaranteed by conceding that curvatures and deformities are not important as long as the beams start and end where they were supposed to, had they been straight. Parallelism, on the other hand, is obtained by locating together elements having similar curvatures or turns (Fig. 2.9).

2.5. Building Technology

All the details to keep in mind when erecting a Tui’que Huë’e make building it a process that is far from easy. In fact, it results out of an inexact geometry that has to be perfected by choosing the materials one by one, and installing them with a sense of artistry that visually straightens them. Additionally, there is the fact that there are precise norms in the building that must be obeyed following mythical outlines, particular building techniques that are to be upheld, and conditions for the site that cannot be ignored. This complex process demands that whomever is leading the construction work be a wise, sensitive and experienced builder who also knows the myths. It is because of these requirements that the task of master builder commonly falls to the shaman.

Fig. 2.9. Straightness and parallelism in the building of the Tui’que Huë’e.
Final Remarks

The Tui'que Ḥuē'e is the traditional Secoya house. This is implied in the fact of being communitarian and semi-permanent, both factors related to a slash and burn economy; also, in the use of raw, vegetal based materials and the powerful mythical explanations that reside behind the building and space decisions.

Chapter 3 will be dedicated to the Pa'pa Huē'e, a structure in which myth disappears almost completely, and its use and the economic system go through a major change while the materials used experience some continuity.

Fig. 2.10. A perspective view of the Tui'que Ḥuē'e structure.

(We are living on a raised floor, in the Quichua house. That is the way we are living now, and not in the soil anymore. The culture of the grandparents, the culture of the people, they lived entirely on the soil. Nice...) (Cesáreo 2003)
Initial Remarks

The Pa'pa Huë'e is the intermediate stage between the Tui'que Huë'e and the Zinc House, and it will be described in this chapter following the same five parameters used in introducing the Tui'que Huë'e.

The context in which the Pa'pa Huë'e appears is that of a pack of two or more individual houses, located closely in relation to each other and housing a big family, who originally lived in the same Tui'que Huë'e. Their economy involves agriculture and goods exchange. The house has the possibility to last more than the Tui'que Huë'e because of its structure of double poles, but it does not because efficient materials scarce. In consequence, the house lasts only 10 years in average, despite the population is more stable. As for its general aspect, the house is considerably smaller in area than the Tui'que Huë'e, but it is taller. It is either squared or rectangular and it is oriented in a parallel or perpendicular position in relation to the others in the pack. The builder employs in some cases wire and nails to fasten the posts. The house has no walls at all, being completely transparent. However, this does not necessary guarantee thermal control, since sun hits the platform that constitutes its floor level. Neither space nor building parts have a mythically explained origin. As for its structure and technology, the double pole is an artifice that provides the house with added structural resistance, while making it easier to build. Geometrical irregularities at the level of detail persist however.

The mentioned are the main features that characterize the Pa'pa Huë'e. The detailed description will help us to compare it, along with the Tui'que Huë'e, to the third and last type, the Zinc House.

3.1. Context

The historical setting of the Pa'pa Huë'e is that in which the Secoya, directed by a leader called Capitán or "captain" do some agriculture and hunting and exchange goods and services using Quichua, Spanish and locally implemented economic systems (mit'a, reducción, and endeude). They live in what we could call "big families." This means, individual families, members of one of the former hearth families of the extended family group, living in close connection in several Pa'pa Huë' ſa. Not that close, but still nearby, live the members of other hearth families with whom they had originally shared space in the Tui'que Huë'e.

For the description of the Pa'pa Huë'e, I studied on site and documented three structures, one in which I had the opportunity to stay during 1997 in San Pablo, one that was the kitchen at César's house, where I stayed in 2001, and finally Cesáreo's house, where I stayed in 2003. Only Cesáreo's structure still exists and is used. San Pablo's Pa'pa Huë'e is not there anymore and César's has been abandoned.

Huë' ſa is the Pai coca plural of Huë'e, meaning "houses," as it is explained in the glossary.

Part Two – Description of the Three Secoya Building Landmarks
That is the reason why the Pa'pa Huë'e appears as houses separated in packs of twos or threes. The location for the settlement in which these house packs appear is chosen with accessibility as the first priority, using the possibility that products taken out of the forest (animals, fur, plants) can be stored underneath the house's platform and from there be shipped. The Pa'pa Huë'e, hence, is built near the rivers, and located as visible as possible to those who travel across. It is because of this that the house is from time to time exposed to floods, and that in part explains the platform. The platform, at its turn, explains its narrowness—in terms of proportion, the Pa'pa Huë'e looks like a Tui'que Huë'e, shrunken and raised—that makes its roof appear visible even from inside the forest.

The house is all but hidden, being in fact very scenic and prominent. Added to sharing space with the other houses of the pack, some of the minor structures that were built around the Tui'que Huë'e are still built, plus new ones appear, the most notable being a kitchen, which is now located outside of the house, in an independent Pa'pa Huë'e structure.

The Pa'pa Huë'e is a house for semi-permanent occupation, meaning that it allows either mobility or relative stability, according to what is sought. In fact, if pushed to last, with the appropriate material, technique and maintenance, the structure is resistant enough to last much more than the 15 years the Tui'que Huë'e lasts. However, it does not, because the materials it is built of, especially the roof palm, are far less efficient than those of its predecessor, lasting shorter and needing more constant replacement.

---

47 Protection from animals, and even from thieves, are some other reasons that justify the platform.

Part Two – Description of the Three Secoya Building Landmarks
3.2. Description and Materials

The house is mostly built out of vegetal materials, but its builders use wire and nails as fasteners if they have access to these materials. If still usable, these are removed when a house is torn down and reused in a new one along with the hardest old wood. The remaining materials are left outside, soon decomposing in the open air.

The house is much smaller than the Tui'que Huë'e. An average size Pa'pa Huë'e is about 40 square meters (6.55 by 6 meters). If we consider, however, the area of the several structures that form a house, it would sum a larger area, at least (if it is only composed of a sleeping structure and a kitchen one) 80 square meters. Its height, 7.10 meters, averages that of a Tui'que Huë'e plus an extra amount corresponding to the platform's height. This amount fluctuates between 0.60 and 3 meters, according to the place. Having less area than the Tui'que Huë'e but taller, the house looks gracefully slight. The Pa'pa Huë' ña's orientation invariably follows a perpendicularity or parallelism in relation to the others that surround them. Which house goes parallel and which one perpendicular seems to be decided in relation to the predominant winds. If breeze is desired inside the house (for cooler sleeping conditions) the long side of the house is oriented towards the wind. If it is not, (so as not to disturb the cooking) the house is placed with its long side opposed to the wind. That is probably the reason why often the kitchen structures in the Pa'pa Huë'e groups appear perpendicular to those used for sleeping. The orientation relative to one another, however, does not seem to be connected to the cardinal orientation. We should call it Cartesian or Hipodamic, instead of cardinal because of that. A group of houses may not be oriented east west but they still will be perpendicular among them.
The floor plan of a standard Pa'pa Huë'e is roughly square. The parts of the house are named in a curious way: those corresponding to the platform have Spanish building names such as piso and varenga, and those corresponding to the roof structure have Pai coca names such as Huë'e tupë and Hue tarapë. The Spanish names refer to abstract, non-descriptive building parts. Piso is "floor" and varenga means "column." As for the Pai coca names, some of them refer to building parts (Huë'e tupë stands for "posts of the house" [Piaguajes and Johnsons 1992, 54, 146-47]) and some to life aspects. (Hue tarapë, the name given to transversal beams located at the center of the space, is directly related to the possibility to hold up hammocks from it [Cesáreo 2003]).

---

48 There are two variations, a rectangular one, remarkably long, and a very rare, not so commonly found, that has an L-shape. The rectangular one does not seem to be recalled by any particular name. The L-shaped one is called casa doblada, "folded house" (Cesáreo 2003).

49 Its name, in actuality, comes from Hue, "to lay on a hammock" (Piaguajes and Johnsons 1992, 50), and Tarapë, "pole" (134).
The lateral roof slopes do not vary much compared to the Tui'que Huë'e. They fluctuate between 40 and 42 degrees approximately, but the pitch in the flat ends is considerably higher than that of its semi octagonal counterparts, going up to 58 - 60 degrees. The change from semi-octagonal endings to flat also means the change from a roof in 18 sections to a 4-pitch one. Its form, however, is not as simple as four pitches may suggest. The four sections are trapezoidal and the roof in general is, to some extent, reminiscent of a pyramidal form.

In the Pa'pa Huë'e, roofing employs the frond of another palm, Conambo. It is necessary to collect an average of 2,000 fronds to roof the house (Quichua builder of San Pablo, personal communication, 1997). Conambo's duration is not as good as Huachipango's, but its installation encompasses much less manual labor. The palm is also woven, but the technique is different to that of the Tui'que Huë'e. The weaving seems less compact or less tight, as figure 3.6 shows, but it still demands some labor. Long (up to 6.40 meters or so) purlins made of Caña Guadúa (guadua angustifolia) flat sections of approximately 2.25 inches width by about 1 inch high substitute the Yaripa long sticks the palm is thatched to in the Tui'que Huë'e. The lower end of the rafters is located about 3.70 meters above the soil level. Façades receive full exposure because of the height at which they are located. The Pa'pa Huë'e has no walls, and when it does have, they usually do not cover completely, being just low screens of 0.60 to 1.50 meters height, made out of opened Caña Guaduñas. Therefore, the Pa'pa Huë'e is a very transparent house that allows its bare structure to be very noticeable.

---

50 The lateral sections of the roof prolong a few inches over the ending ones, in order to protect the joint between both from filtering rainwater.

51 The Caña Guadúa or "Guadúa Cane" (guadua angustifolia) is a wooden giant grass of extraordinary structural behavior. Species available in the area are easily twice as resistant as concrete to compression efforts and six times as resistant as steel to tension efforts. Its name comes from the Quechua guadua, the word with no particular translation that the Incas used to refer to it.

52 There is no particular name for the compound of the roof pieces structure.

Part Two - Description of the Three Secoya Building Landmarks
As for the access, the case of the Pa’pa Huē’e is even more surprising than the previous because the house has no doors at all, and no windows, as a consequence of having no walls.

Although totally open, the house features, much like the Tui’que Huē’e, a couple of triangular skylights in the upper ends of the roof. These are more evident and clearly defined than those of the Tui’que Huē’e, however. Here, they have a declared purpose, that of facilitating the escape of smoke when the structure is used as a kitchen (and in which case it usually does have walls, though low ones) and in general to facilitate the ventilation when it is used as a room.

3.3. Space

In the very common case of having no walls, the interior of the Pa’pa Huē’e is fully illuminated by natural light. However, because the sun directly hits the floor platform in the mornings and afternoons, and also because in general the house has a small area, it can become considerably hot in the less windy months of the year. Conversely, it can get cold during the cold months.

Living in the Pa’pa Huē’e occurs on the platform above the soil while the space underneath is used as a storage area or for other uses that need a cover (keeping a pet or installing a temporary kitchen for large preparations, for example). The Pa’pa Huē’e is, just as the Tui’que Huē’e, a one single-space house with no internal walls. In some cases, internal physical separations are, as in the Tui’que Huē’e, suggested by structural posts. For example, poles running in the middle would naturally lead to understand, walk and use the space as if sectioned in two. However, there is not a reserved or restricted space in the house. Spiritual invocation or praying does not occur in a fixed place. Furthermore, the former mythical-obedient empty central space sometimes even has a post installed right on it.
There do not seem to be many or considerably important mythical beliefs that can be evidently tracked in the physical structure of the house, determining its building to be the way it is. It is appealing enough, however, that the Caña Guadúa, introduced in myths as a material especially regarded for the possibility to make sharp weapons out of it, appears now frequently as a building material in this house in the form of support for the roof thatch, wall screens, floor surface and rafters. Other than that, the Secoya distinguish that distinctive set of beams, the Huetarapé, as an important part of the house, but mostly regarding the functional fact of installing hammocks. On the other hand, not only are joints not considered a mythically important protagonist in the house, as it happened in the Tui'que Hué'e, but most of the joints, cuts or notches can be avoided by the use of a Lego-like frame forming that is originated by what it is the most curious feature of this house, a double structure of poles.

3.4. Structure

The binding of the structural elements in the Pa'pa Hué'e is still done with vines (in a style conventionally known in Western building). Sometimes, as mentioned, wire and nails can substitute these. The material of the structure poles continues to be Yaripa. As for the beams, the preferred material is the pole of a tree of proverbial resistance called Guayacán (Tabebuia guayacan), which is installed either round and peeled or sawn in a square section. If these types of wood are not available, less resistant materials may be used.

---

**Fig. 3.8. The structure of the Pa'pa Hué'e.**

---

53 See chapter 6.
54 See fig. 3.8.
55 These are different veins than in the Tui'que Hué'e, less resistant but still enough.
The structure begins with the forming of a square by placing four Yaripa poles at an approximate distance of 5.00 meters. The height of these poles is about 3.60 meters and the approximate diameter is 0.18 meters. Following this, a much shorter set of poles, the same diameter and 1.20 meters high, is allocated right by the side of the initial four long ones. After this double-poled square is formed, the space inside is sectioned with strings forming a nine-square grid. Short poles of the same 1.20 meters height are stacked in the twelve available meeting points that along with the four double-poled corners complete the grid. The result is a grid of 16 short poles, four appearing at each side, and four additional long poles in the corners. The short poles support Guayacán beams of about 4 by 4 inches. These at their turn support beams the same section but 1 - 1.5 meters longer and oriented perpendicularly in relation to them. These are the ones that support the floor, which in consequence flies off the poles about 0.50 - 0.75 meters at each side. The floor is made of either longitudinal sections of Yaripa, or a mat made of opened Caña Guaduás, or sawn-wood planks of 1 by 10 inch section by 3.00 meters long. In this way, the system of double columns and platform that makes distinctive the structure of the Pa’pa Huë’e gets finally constituted.

Both the long poles and sawn poles that are installed on the platform support a horizontal framing constituted by sawn 4 by 4 beams at two different levels, one on top of the other and perpendicularly oriented. It is over this framing that the roof structure lays. The roof structure consists of two poles holding the ridge beam. Two 4-inch diameter Caña Guaduás rafters, coming from the corners of the framing, reach the ends of the ridge beam. Those Cañas are the four main rafters. The longest nears 4.90 meters. Three more rafters go in between them, on each side of the quadrilateral structure. The shortest one of those is about 3.40 meters. The thatch structure is located over the resulting set of 16 rafters.

Pa’pa Huë’e’s double-pole framing offers enormous structural advantages. First of all, the framing is simple to form. No extra care is required in how elements are joined (different than what it happens in the Tui’que Huë’e) nor diagonal bracing is required as in conventional carpentry. Second, wood pieces conserve their entire original resistance, since they are not debilitated by the cuts necessary to make joints. Third, because pieces meet one on top of the other and not on the same level, the frame’s moment of inertia naturally increases, making the structure more resistant to deformation, bending or breaking up. Fourth, the double pole helps counteract the inverted pendulum movement that comes from the narrowness of the house, as well as eventual seismic movements and movements caused by wind or by users standing on the roof to make repairs. Fifth, and finally, the structural advantages make the house resistant enough even if less resistant materials are utilized.
In this Cartesian, predominantly orthogonal geometry, there remain, however, geometric and dimensional irregularities. The fact that its materials are modified to a bigger extent supposes that, in terms of adjusting, forming a Pa’pa Huë’e would be less problematic. After all, it is easier to align and determine distances with sawn square-sectioned poles than with raw, circular sectioned ones. However, in the building of the Pa’pa Huë’e there is often no consistency between dimensions of similar constructive pieces. Some beams, for example, can be 4 by 4 inches, while others are 3.5 by 4.5 inches. Also distances are uneven. The distance between two of the platform beams that support the floor, for example, can be 0.25 meters in some cases and 0.90 meters in others. In other common situation, columns that are supposedly in the middle are actually displaced from it by up to 10 inches. However, the house looks symmetrical overall, as with the Tui’que Huë’e. There is an intention towards symmetry and it can be perceived as such despite the house not being symmetrical in the level of detail.

3.5. Building Technology

Pa’pa Huë’e’s geometry is much simpler than Tui’que Huë’e’s. Its structure is easier to understand, therefore it is easy to learn it from a model and build a new one. The thatching is less complicated. No mythical mandates have to be followed when building one. In sum, the Pa’pa Huë’e is a relatively easy to build house that can just take some time in the roofing. Any experienced builder can make it. Knowledge is not as arcane as it is in the case of its predecessor.
Final Remarks

The Pa'pa Huë'e is a house of transition, one that is indigenous but not aboriginal\(^6^9\) because of having been shaped in response to Blanco\(^6^0\) and Andean productive systems. The house is semi-communitarian, appearing as a pack of individual houses with no boundaries in between. It can last longer than the Tui'que Huë'e, because of its innovative double-poled structure.

Some of the change trends that are observed in the Pa'pa Huë'e in relation to its predecessor continue towards the Zinc House, which will be explored in Chapter 4. Indeed, in the Zinc House there do not exist mythical-based explanations about how the structure is used; the economic system again changes, and the materials or its manufacture also change, noticeably in this case.

---

\(^{59}\) However, I also include it when speaking as a whole about the traditional types. By using that expression, I am referring to the Tui'que and the Pa'pa Huë'ñ'a.

\(^{60}\) For the context in which the word Blanco is used in the thesis, see glossary.
CHAPTER 4
Zinc House


(Now, the Zinc House. That is a different thing, with zinc sheets. Everybody has now those Zinc Houses. There are no more palm fronds, or there are, but too far, not close. If it were our culture, the houses would be with palm fronds).

(Cesáreo 2003).

Fig. 4.1. The Zinc House.

61 The name Zinc comes from this metal being one of the main components of the combination that made it one of the favorite roofing materials in these areas, back in the late 1960s. Even today the Secoya continue referring to the houses made with corrugated metallic material as Casas de Zinc, Zinc Houses, although the sheets don’t necessarily have zinc in their components.

Part Two – Description of the Three Secoya Building Landmarks
Initial Remarks

The Zinc House is the most recent stage in the Secoya process of type change. The description in this chapter will allow us to compare it to the previously described types.

The context in which the Zinc House appears is that of many individual houses that are in some places scattered and in other places form streets. Each individual family subsists by working for a wage or having a small farm or business project. The house lasts as twice as the previous types at the very least (30 years), and requires little maintenance. It is the house for a settled population. In terms of overall aspect, the house is the smallest of the three. It is almost invariably rectangular and it is oriented in relation to circulation routes. Basically all the materials the house is made of have gone through a process of manufacture, from the metallic roof to the sawn woods. The house is tightly closed by wallboards and internally it has two or more separate spaces. Size, material and walls make the house very inefficient at a thermic level. However, the house intends to be all about functionality. It also has a raised floor, but its structure changes to a fragmented-pole one; a set of posts is used as the foundation and a second set as the house columns. The Zinc House is considerably easy to build.

This description allows us to complete a general idea of how the three main types in the Secoya building scene look like. This will further enable us to analyze the change, knowing exactly what are the factors involved in that change.

4.1. Context

Zinc House’s historical setting is the one in which Secoya small families, organized around a legal entity, the OISE, live by themselves, focused on their own problems and not necessarily in permanent connection with their more distant relatives. They make their living as farmers, micro entrepreneurs, tourist guides or industrial company workers, in which case they perform labors such as clearing forest sections to make labor camps or roads. Their houses are individual, nuclear family-inhabited. In order to enjoy some privacy and control over their own affairs and properties, they try to make them either distant from those of the closest relatives, or tightly closed, with almost hermetical walls.

This is the reason why the Zinc House is rather spread and appears scattered here and there. It is preferably built by circulation routes, rivers, roads or pathways, with the intention that it can be easily approachable by relatives or partners who are traveling. The platform it sports, normally slower than that in the Pa’pa Hué’e, is implemented essentially to keep the house clean and out

---

62 The description of this house is based on the analysis of many of the Secoya Zinc Houses and my own participation in the building of some of those structures in the coast of Esmeraldas between 1996 and 1999.
63 Spanish short for Secoya Indigenous Organization.
the reach of small pests. It is made in zinc partly because of the difficulties in getting natural building materials like palm, which scarce.

Although intrinsically visible because of the place it is located and because it is so widespread, in terms of scale the Zinc House is the least prominent among the three Secoya building landmarks. Added to that, there are much less temporary staying structures outside than in the previous cases, a bathroom being the most prominent. There can also be a chicken coop or a cage with other productive animal. The kitchen is inside of the house.

The Zinc House is the closest the Secoya have for a house of permanent occupation. It lasts between 10 and 30 years, or more depending on the slope of the roofing sheets and the maintenance they receive. Opposite to the other cases, in which the duration of the house depended on that of the roof, in this case it is the roof what sets the maximum limit of duration for the house. Most maintenance must be provided to the rest of the structure, especially the exterior wall boards, some of which need replacement after a few years because of their being constantly exposed to sun, rain and humidity.

4.2. Description and Materials

In general terms, all of the materials have undergone a careful process of manufacture, either manual or industrial. Some of the materials can be reused, among them the strongest woods and the old nails that can resist being straightened up again with a hammer. It is paradoxical however how difficult it can result to reuse the zinc. The perforations resulting from the nailing and the brittleness after some years of being in the open make it unworthy to be reused in new houses. Because of this, it is normally re-utilized for non-housing cottages such as the chicken coops or otherwise left around as junk.

An average-size Zinc House is about 48 square meters (8 by 6 meter). Its total height is approximately 4.50 meters. This includes 0.60 m. of the platform’s height, which varies from more or less that value to 1 meter, in some cases going up to 2 meter. However, normally it tends to be low. The location of the house favoring the circulation routes allows us to speak of it in terms of an urban orientation.

---

64 In the case of the Tui’que Huē’e, Tessmann ([1930] 1999, 123) says the river is the place for toilet necessities and in the case of the Pa’pa Huē’e it is common the existence of a pit hole far away from the house.

65 A higher slope is better.

66 It lasts more if it is kept clean or if it receives occasional layers of paint. Also, if users avoid stepping on it after installed, because over time Zinc looses resistance to compression and becomes breakable.
The house plan is almost invariably rectangular.\(^6^7\) Its structure parts are named with plain Spanish building names that are common to the house carpentry of the rural Ecuadorian lowland territory.\(^6^8\) Varanga stands for post, telera for beam, and tendal for the boards supporting the zinc. The roof slope of the Zinc House is also almost invariably low (15 degrees), minimum required for the roof to drive out with some efficacy the rainwater, minimum to which the builder sticks to. In this arrangement, the four flat sides in the roof of the Pa’pa Huê’e change to only two in a simple two-pitch roof.

Metallic corrugated laminae nailed on boards are the substitute here to the more elaborated roofing systems in the Tui’que and the Pa’pa Huê’e ha.\(^6^9\) Sixteen sheets 3.60 meters long and 0.85 meters wide are necessary to roof one 6 by 5 meters house.\(^7^0\) The purlins, zinc’s supporting boards, are simply a few of the 1-inch by 10 inches by 3 meter sawn boards that are used for the walls. When not enough material is available to use entire boards, wooden slats made out of boards cut in halves are used. In other cases, irregularly shaped board leftovers are just enough, and in extreme cases opened pieces of a narrow and not too efficient building yellow bamboo will suffice (Fig. 4.3).

---

\(^{67}\) Its characteristic shape appears in the Secoya settlements also in an institutionally promoted version, funded by NGOs, and built in concrete walls and asbestos roofs. It is used as community centers, health rooms and classrooms.

\(^{68}\) Some of the names curiously echo those used in the ship carpentry.

\(^{69}\) Different than the Tui’que Huê’e and the Pa’pa Huê’e, where the roofing is one of the last elements in being installed, here the building system allows to install the zinc as soon as the main structure is ready, then it results very convenient to continue working in the rest of the building underneath, with the protection from sun and rain for builders and materials.

\(^{70}\) The width of the house can be covered with two 12 feet sheets. The length takes 6 meters divided by the useful width of the laminae which is 0.75 cm = 8 sheets. 2x8=16. No zinc is used to roof the top edge of the house (see below under "Structure").

---

Part Two – Description of the Three Secoya Building Landmarks
The purlins here do not have the considerable lengths of those in the previous cases because they result from the standard 3 meters in which the wallboards are sold. In the Zinc House, the roof structure based on rafters changes to one based on trusses. The trusses are installed at about 3.50 meters above the soil level. Zinc does not extend considerably beyond them (it overhangs by a maximum of 0.50 meters), hence not covering the walls considerably. That is how the walls do not receive significant protection or shade from the roof and they are pretty exposed. In most cases the wallboards are installed vertically rather than horizontally, because it is considered that in such way they last longer. They are located as close as possible to each other, enclosing the house in its four facades, making it that way visually impenetrable from the outside. They are nailed to a frame that is attached to the structural poles and to the structural poles themselves.

Fig. 4.3. The roof supporting structure in the Zinc House.

---

71 It makes sense. If the long fibers of the wood are located vertically, the board releases by gravity the humidity in between the fibers. When the material is internally drier, the possibilities for decaying diminish.

72 The hermetism of the house seems to result out of security concerns.

Part Two – Description of the Three Secoya Building Landmarks
The entrance of the house is in most of the cases located in the center of the longest side. The door is constructed out of the same boards as the wall. It is framed by two structural columns and includes a 1-inch or so perforation for being locked to one of them with a lace, a wire, or a chain with a padlock. The size of the door is a conventional 2-meter high by 0.90 m wide.

The house has usually one small window that is constructed, as the door, out of the typical wall boards. The upper section of the walls in the short sides of the house ends in a triangular or pointed shape, as a product of the two-pitch arrangement. Thermal alleviation comes from leaving that triangular apex uncovered in the way of a big skylight, but often the walls reach that sector too.

4.3. Space

The Zinc House is dark at all times, day and night. Its darkness, contrary to that of the Tui’que Hué’e, does not offer so much artistry however. The tightness of the wall wood pieces, the natural density of the zinc laminae, and the roof slope being so low, are responsible for the solid dark tone that offers no interesting shadow interactions in the interior of the Zinc House. For similar reasons, metal in the roof, low height and low pitches, and the fact that the tightly closed walls are so exposed to the sunlight throughout the day, the house is also very hot inside most of the time.

Just as in the Pa’pa Hué’e, the floor in the Zinc House is raised. However, the house does not have the structure of double poles that the Pa’pa Hué’e does, but one of poles in between beams. This allows internal separations wherever they are needed, because it is very easy to displace one pole or to insert an extra one in order to install a new wall. That results in a house with multiple internal spaces for individual rooms, spaces that are separated by walls that are as tight as the exterior ones. Due to this, we could consider the space in the Zinc House to be the opposite to that of its antecessors. If, in the Tui’que and the Pa’pa Hué’e Ňa space was centralized, agglutinant, totalizing, here it is fragmented. No hierarchies are highlighted through the use of scale effects. The house’s low height makes the highest free distance between floor and ceiling to be only 3.50 meters, the lowest being 2.70 meters. That is considerably low for people coming from such grandiose and generously high interior spaces. Walking, staying and cooking areas inside of the Zinc House are defined by the walls. Invoking, praying or reading the New Testament does not occur in a privileged space. The most distinctive features that this house offers are not in the space quality but in the use of industrially manufactured materials and pre-forming of local natural ones first, and then in its low height and low pitches.

Although the beams supporting the roof have enough space and resistance to also support hammocks, no beams with distinctive names other than the Spanish describing their main function are found in the Zinc House. Nor are there beams that are considered symbolically special either.
As for the joints, they are the conventional and very basic ones that are used in Western carpentry. No myth seems to be involved or followed in the construction of the Zinc House that is not the more indirect yet important appreciation the Secoya seem to have had for durable materials for some time now. Zinc reflects the sudden value that in the Secoya life acquires the idea of resistance of materials in building as opposed to the past, when the most resistant materials were saved to make weapons.

4.4. Structure

No vines are part of this building, and no wire. The structural elements are affixed using nails. Beams and columns are perfectly sawn poles of the most resistant woods that can be found or purchased. Guayacán is one of the favorites.

---

73 It is in relating the industrially manufactured material with the perfection that one can find in heaven that the fondness of the Secoya for durable materials can be understood with better clarity. Not only the description by Fernando Payaguaje of a mythical house that motivates the name for this thesis is an example of this. The heaven itself is described by him as being of Zinc in another narrative. He tells, in fact, how he was able to elevate all over the heaven as to be able to see how its form was like that of a bowl upside down, made of a durable material that, again, looked like Zinc. Also in Moya (1992, 96) the sky’s dome is described by her informants as being hard and resistant like Zinc or plastic, yet an additional, very appealing, reference to mythical affairs explained in terms of resistance of materials appears in a myth collected by Moya (1992, 337). The tapir locks the moon up in a room made of “some strong cement.” The moon then escapes by transforming in a steel termite.

74 Although available, probably the reason why wire is not used here while it is in the Pa’pa Huë’e is that in such case it is easier to fasten big, rounded Yaripa poles, using ties. Nails work with straight, smaller section elements as the Zinc House squared sectioned posts.
The system of columns in the Zinc House is also a double system, but in a different way. It is formed from sectioning the poles at the level of the floor structure, making two independent sets, one that acts as the set of foundation poles (holding the floor structure and the other set) and another set which is the structure support poles (holding the roof structure and walls). The foundations are nine posts organized in triads inside of a grid of 3 by 4 m cells. These posts are about 6 by 6 inches in section and their upper ends go above the soil level at an average height of 0.60 m. Beams of 4 by 4 inches section are placed on top of them transversally. Then, a second layer of beams is positioned over those in a perpendicular direction, longitudinally. It is to those secondary beams that the 1 by 10 by 3 meters floorboards will be nailed,\textsuperscript{75} and also some of the 2.60 m 4 by 4 inch support columns. The remaining columns will be supported on the transversally oriented beams of the lower level. They are higher (2.70 m), because of being on the lower beams. The joints between the ends of columns and beams are simple rebate cuts in both pieces that are kept together by nails,\textsuperscript{76} whereas the joints between columns and beams in places other than the ends have no cuts at all, being just basic butt joints with a nail hammered in diagonal. Finally, the columns of the corners and in some cases those in the center of each side are fastened through diagonals. Diagonal bracing, not used in the previous types, makes its debut here in the Zinc House. However, this is a particular type of bracing which is limited to connect the column with the beam below it and not with the one above.

On top of the columns there is a new layer of beams that is organized like a mirror of the previous one, the one holding the floorboards. In fact, the beams here are located in their exact horizontal position, direction, length and number. This, and the fact that the supporting structure is separate from the foundation one, are the keys for the Zinc House to freely allow modifications to the internal space. Since columns are not anchored to the ground but they go in between beams that have the same size and direction, they can be "slipped" to any place in the middle of those beams. Additionally, new columns can be located wherever they are needed to create a new space if the existing ones cannot be moved. This is the reason why the house can easily accommodate three or four spaces in a relatively small area, adding more if necessary.

The beams on top of these columns are the horizontal components of the roof structure. The roof structure is also innovative in that it inaugurates in the Secoya building the presence of conventional timber trusses. The old structures of rafters become five parallel triangular trusses, separated 2 meters from one another. Each truss is made of 6.90 meter long pieces of wood for the base,\textsuperscript{77} and 3.60 m long for the sides that form the triangle. The total height of each truss is approximately 1 m. The trusses are attached by the board-like purlins that support the zinc roof, and which are separated at a maximum distance of 0.75 meter from each other.

\textsuperscript{75} These planks are the same nature than those found in the most elaborate floors of the Pa'pa Huë'e.
\textsuperscript{76} Rebate cuts are also used in the house whenever it is necessary to add elements in the same direction in order to, for instance, make a beam longer.
\textsuperscript{77} The trusses can be made of shorter pieces of wood, and offer advantages related to their inherent undeformability. However, when forming the trusses, builders prefer pieces of wood that are long and resistant enough not to bend. Guayacán fulfills both requirements, length and resistance, but it is today a threatened species.
The corrugated zinc laminae is nailed through one of its "crests" and not one of its valleys, in order to avoid circulating rainwater entering through free space in the perforation made by the nail. The nailing is carefully calculated because each single one is final. If failed, that means an extra hole in the zinc that will invite water when it rains. Another aspect that is taken care of is the meeting point of the upper ends of sheets coming from opposite sides. In order to avoid rainwater entering through the gap that exists in that meeting point, the sheets of one side of the house are displaced on top of the others by at least 0.20 m. This means that, in a zinc roof system, the sheets of one side are not symmetrically located in relation to the other, because the ones that overlap need to be installed both higher and displaced to one side. However, that license to asymmetry saves the extra investment in two or three more sheets that should be folded horizontally to cover the gap.

In the Zinc House, the process towards the Cartesian geometry initiated in the Pa'pa Hu'ë'e is consummated. All remnants of the Tui'que Hu'ë'e's geometry are gone. The empty central space becomes an aleatoric fragmented area, and radially oriented rafters become parallel trusses. Cartesian geometry facilitates precision, and now the builders have technical means to secure it. Measuring tapes substitute measuring with human body references or with sticks, or strings. All of the wood is scrupulously sawn and standardized. Every zinc sheet is exactly like the others. All the opportunities for precision are now available.
4.5. Building Technology

The inbuilt precision in materials and tools makes the building process much less problematic. No visual adjustments or special care in choosing the wood pieces are necessary as they were in the Tui'que Huë'e. An acceptable roof can be produced without a lot of training. Adding this to the fact of the overall simplicity of the structure, the result is a house that is relatively quick and easy to build, while not requiring as much experience, in building or in life, as the other two did. Zinc does it all. No matter what supporting system is supporting it, no matter how good or bad is the material that system is in, no matter how it was built or the skills of the builder, Zinc will invariably do the basic work of protecting.
Final Remarks

The Zinc House is the *modern* Secoya house. It can be characterized as such because it is the result of a market, individual-based economy, and it has no particular features to make it distinctive from similar houses in Ecuador and the world; also, because of the exclusive use of industrially transformed materials.

The Zinc House closes the cycle of change the Secoya building has undergone so far. The thesis will explore in Chapter 5 the historical context in which that change has occurred.

---

Fig. 4.7. A perspective view of the Zinc House structure.

Part Two – Description of the Three Secoya Building Landmarks
Part Two Final Remarks

The second part of the thesis described the three main types of the Secoya building sequence. The descriptions categorized the Tui'que Huë'e as the traditional type, the Pa'pa Huë'e as the indigenized one, and the Zinc House as the modern type. There are sensible differences between the three of them. However, they relate to each other through a process of evolution rather than ignoring completely their predecessor. Part Three of the thesis will detail such evolution from an ethnohistorical and ethnoarchitectural perspective, providing the background for the appearing of each of the types (Chapter 5) and then explaining what their transformation meant at a social and cultural level (Chapter 6).

Fig. 4.8. A perspective of the three Secoya historical building landmarks.
Part Three Initial Remarks

Part Three of the thesis will examine ethnohistorical and ethnoarchitectural aspects of the Secoya building.

This part combines the descriptive approach of Part Two with the analytical focus of Part Four. It is descriptive when presenting the historical facts surrounding the appearing of the three types in Chapter 5 and providing explanations about the ethnographic context of these buildings in Chapter 6. The analytical focus appears when speaking about the necessity to demystify the apparent unchangeability of the Tui'que Huë'e that is mentioned in Chapter 5, and when analyzing the serious implications of the abandonment of the traditional types in Chapter 6.

The objective of this part is to demonstrate that the three houses were elements that evolved over time, and after that demonstrate the importance that such building evolution had over the Secoya culture. The conclusion is that there was a huge impact on cultural aspects related to ethnicity and community togetherness, but change was necessary after the culture stopped migrating. That conclusion inaugurates the analysis of the reasons for the change that takes place in Part 4, Chapter 7.

Fig. 5.1. 19th century illustration of the burial of a shaman inside of a structure that resembles the now inexisting Huetara Huë'e type (After Payaguaje 1994, 119).
CHAPTER 5
Ethnohistorical Aspects of the Change

Initial Remarks

This is a historical chapter focused in three moments, those surrounding the appearance of each of the building landmarks.

The importance of this chapter goes beyond situating the types historically. It shows how all of them were a variable of change. This means, for instance, that neither the Tui'que Huë'e was static, nor the Zinc House appeared abruptly, two presumptions that are commonly hold. In order to demonstrate this, subchapter 5.1 holds the position—based on historical trends, mythical narratives, documented references and my own observation—that the Tui'que Huë'e had been changing probably from the very beginning, and until the last moment. Subchapter 5.2 details the factors that motivated the emerging of the Pa'pa Huë'e. This subchapter is longer than the other two. The reason is that there is not bibliographic evidence I know of, nor narrative evidence I could collect from the Secoya, about the origin of this house type, so I have to develop this topic in more depth. I do it by presenting arguments to support my assertion that this house aroused as a consequence of the missionization process. Those arguments detail, first, what was the role of the Quichua people in the implementation of the house (5.2.1 and 5.2.1.1); then, why and how the urbanization of the Upper Amazon was tackled in the form of religious-oriented missions (5.2.2) and why missionaries themselves had to act as builders (5.2.3). Finally, how the alternative of the double pole resulted (5.2.4), and how the presence of other double pole structures in the world could be derived from the same process (5.2.5). Subchapter 5.3, for its part, is a put in scene of the historical presence of iron in the Upper Amazon, showing how as a building material it showed up almost as quickly as it became revolutionary in the building context of Europe.

While it was necessary to set a historical context in the thesis, by being this history focused in demonstrating the change, rather than simply being an enumeration of historical facts, this chapter becomes a good source of arguments to support the idea of change that the thesis upholds.

5.1. The Ethnohistorical Context of the Tui'que Huë'e
(From an uncertain date of origin, to circa 1941)

The Tui'que Huë'e fits well in the recently contested stereotypical image of Amazonian way of life. According to this image, these were people who had not changed much in relation to pre-contact times. The idea was shaped mainly on the basis of a simplistic association that, since these groups looked so primitive when documented by ethnographers in the early 20th century, they had surely been in the same condition throughout ages (or returned to it after a brief
contact with West). In other words, they had not followed the patterns of evolution the rest of civilization had.\footnote{Humboldt himself, back in the early 1800s, had warned that, although such nomadic hunter-gatherer belief was widespread throughout Europe, it was a mistake. He said that agriculture was known in the Amazon and Orinoco forests and informed, furthermore, about the existence of agriculture in forest openings where there had never been missionary influence (Humboldt in page 93 of his "Travels to the equinoctial regions of the New continent," cited by Triana y Antorveza 1993, 159). However, more than a century later, the first classic ethnographies on these peoples were produced (Tessman 1930, Steward 1945). Their authors ignored crucial evidence against the nomadic hunter-gatherer myth (Golob 1982, 1-2, 13-15) despite sometimes it appears consigned in their work. Why, it is not known. It was probably in an effort to make the statement of the primitive people clear and strong, and that way universalize their well-formed pre-conceptions.}

Since they had been living in such a parallel world, their social organization, as small migrant groups that practiced hunting and gathering and a primitive horticulture while living in a single structure, was a good example of how life looked like in the dawn of civilization.\footnote{It is actually hard to imagine communities untouched by civilization after the aggressivity and speed with which Spanish and especially Portuguese militaries came into the Amazon in the 16th century in search for gold. Then the insistence with which Catholic missionaries stayed in during the 17th and 18th centuries in search for souls. Then, the passion with which explorers and adventurers traveled in the 19th century in search for fame. Finally, the fervor with which scientists, Christian missionaries, journalists, tourists, industrials, armed groups and traffickers have occupied it during the 20th and early 21st centuries in search for everything they can find. It is hard to believe that, after waves and waves of passionate outsiders looking in every corner things they can benefit of, there is still somebody they missed, a culture no Westerners ran into before. Exoticizing the other could be a human need, and some say it could also be a good business. Mass media knows how fond we are of stories of pristine forests and untouched peoples. The case of the Korubo, a group of Northwestern Brazil near the border with Colombia is remarkable. They were featured on National Geographic in 2000 as the most recent uncontacted group the Society had found. Not only the Korubo had been in contact—and struggling a lot—with Brazilian colonos for a few years before the claimed contact, but they could have been the people Father De La Cruz saw and documented in his trip to the area in the 17th century. It is, in fact, interesting how unequivocally coincident are the descriptions that De La Cruz and National Geographic made of their houses with three centuries of difference. Both descriptions coincide in talking about houses that looked like canoes upside down. In many cases the apparent primitiveness could have just been a mere return. Something like this could have happened to the famous and now extinct Tetetes, a group linguistically related to the Secoya. When a group of three of the last survivors was contacted in 1966, the contactor, an oil company worker, described their house as similar to those of the Huaorani (Cabodevilla 1997, 30). Huaorani’s is, in fact, one of the most amazingly "primitives" amongst the Upper Amazonian malocas. However, very likely the Tetetes had been missionized in the 17-18th century and then re-entered the forest (Cabodevilla 1997, 216), where they hid for a couple centuries until a few of them were being found living in a totally "primitive" house. What is most interesting is that one of them was carrying an old metallic manufacture knife (Cabodevilla 1997, 209). Also the Secoya had their own kind of return back to primitive, when they had to carry a nomadic strategy of life for five years, while escaping to the crossfire between Peru and Ecuador in the 1940s: "Ése Peruano también cuarenta y uno quitando Peruano nosotros casa quitando todo. Otro para acá otro para allá, atajado, no se puede salir, por éso nosotros ahora viviendo nosotros toda parte regado viviendo dice toda parte, así contando." (Cesáreo 2003).}
The building of Amazonians was essential in the stereotypical frameset. It looked so primal, so basic, yet so powerfully symbolic that architecture historians made passionate analogies between these and pre-historical buildings.

All this is changing for good. The myth of the immutability of Amazonian building is being debated from many perspectives, from historical (Golob 1982) to archaeological (Heckenberger et al. 2003) to even journalistic (Tierney 2000). This thesis challenges that myth from the point of view of architecture.

Regarding the Secoya, it is commonly said of the Tui’que Huë’e that is described in this thesis was the first and original Secoya house. However, there is enough evidence to demonstrate that even that first house had been changing. Form itself provides clues: the door, the house geometry, the space use and its carpentry are among them.

Mythical Secoya narratives are handy when trying to support the idea of change in the Tui’que Huë’e. They, in fact, describe a house that does not completely coincide with what the Tui’que Huë’e is, especially in the space distribution and elements. Regarding the door, myths describe a Jaihuë’e with two doors rather than one, these being located at the center of each of the semi octagonal ends, aligned in relation to the longest central axis of the structure, and highlighting the importance of such axis.

---

82 Golob affirms that historical documentation describes large villages by the major rivers before the missions, and suggests that the life in isolated malocas could have just been a self-defense strategy after the first Spanish attacks (1982, 5-6). For his part, Heckenberger has found revolutionary evidence of densely populated villages from circa 1250 to 1600 A.D. in the sector of Mato Grosso in Brazil.

83 For the meaning of the generic term Jaihuë’e, see the glossary.

84 The significance of the longitudinal axis is highlighted in at least three myths. One of them (Payaguaje 1994, 82), describing Repão’s heavenly maloca, locates her resting area in one end and in the other the nest of a mythical bird. A second myth talks about the wonderful capacities of a shaman as a prey-caller, and mentions hundreds of tapirs coming into the house through one of the doors and leaving through the other. Finally, Fernando, in his visit to Nañe’s maloca in heaven, describes how the central space, although empty, has to be crossed through a central overpass that separates the house in two sections, one for God and the other for his wife.

Part Three – Ethnohistorical and Ethnoarchitectural Aspects of the Secoya Building
However, just as important as mythical evidence is the fact that Tessmann was described by a Secoya informant, back in 1930, a Tui’que Huē’e with two doors located in the way described by myths today (112, 122-123). It is possible that the use of space also changed. In the mythical descriptions, it is not the empty central space that is important but the whole central pathway between doors. The pathway would section the mythical house spatially in two. The use of these spaces in the myths, with God living in one side and his wife in the other, leaves the possibility open to the fact that in early times the Tui’que Huē’e was gender-based, rather than organized as hearth families living around the center. Antecedents of this type of division in which men live in one side of the house and women in the other side existed and were documented in other Amazonian groups (Schneebaum 1988, 86).

Related to carpentry, the desire to make the house geometrically perfect but having no tools or materials to accomplish it is noteworthy. It makes us wonder if this was a house that was in the process of that perfection or just the opposite, a house whose builders, in some moment of history, learned geometric perfection standards from somewhere and were here trying to translate them into raw materials. In other words, we can wonder if the Tui’que Huē’e’s was a technology in progress or in decay. This is a dilemma that could be hard to solve, but it is there, pointing to the fact that the house was a house in evolution, in one of two ways.

5.2. The Ethnohistorical Context of the Pa’pa Huē’e
(From approximately 1636 to circa 1999)

Explaining the development of the Pa’pa Huē’e can explain well the history—and drama—of the whole missionization phenomenon in the Upper Amazon. Spanish displaced populations to the lowlands in the same way the Incas had customarily done in the past. Their intention was to establish new settlements, the missions, with their help. They declared the Quechua—and not the Spanish- the "official" language in the missions, and very likely they also unified the building system in a territory in which there could be as many housing types as languages. The unified building, the Pa’pa Huē’e, would be a mix between American roofs and materials, European and American techniques and the European bed, among other curious elements.

5.2.1. The Quichuization of the Upper Amazon

When inquiring about the origin of the Pa’pa Huē’e, the common answer of Secoya builders is not only that it is not Secoya, but that it is the house of the Quichua (Elias, Marcelino, Esteban, conversations with author 1997; César, conversation with author 2001; Cesáreo 2003).

85 The change in the number and location of the Jaihuē’e doors could have occurred for strategic reasons. In times of conflict, a not-so-visible door would give extra protection from those who wanted to access the house and attack by surprise during the nights. As a strategy, however, that surely rendered ineffective once the practice of setting the malocas on fire from the outside became custom.
Cesáreo characterizes the Quichua house as one of a raised floor. This is coincident with Fernando's assertion (Payaguaje 1994, 36) that the houses with platform were Quichua and Vickers's observation that the small scale poled houses are a new style (1989, 181).

How did the Secoya end by preferring the Quichua house to theirs? Secoya interactions with the Quichua (and the emerging of the Pa'pa Huē'e itself) are, evidences suggest, a result of the strategy of colonization of the Upper Amazon. The Quichua could be considered as that "new" culture formed from the interaction between Quechua, Upper Amazonians and Europeans, after Spanish missionaries moved from the Andes to the lowlands thousands of indigenous of the former Inca Empire. That the Pa'pa Huē'e is the Quichua house means that it is a house that resulted from a mestizaje between building techniques and necessities coming from three different cultural sources.

Curiously enough, the Spanish decided, for their Upper Amazonian enterprise, not to use their own conquest tactics—not even their own language—but those of the Incas they had subjugated. This phenomenon, known as the Quichuization (Hudelson 1987, 7-10, 157-58), was essentially the re-cycling of the Inca colonization system of mitimaes. The mitimaes strategy consisted in repopulating each new conquered place, moving a considerable amount of its residents to several distant established Inca colonies, and taking people from some other of those colonies in. That way, a two-fold purpose was accomplished: first, insurrections among the new conquered people were neutralized, and second, the Inca culture would quickly spread into the new territory, through the newcomers.

Part Three – Ethnohistorical and Ethnoarchitectural Aspects of the Secoya Building

---


87 The system, one of the flags of the Inca empire, had such scale that, tells the Spanish chronicler Juan de Betanzos ([1557] 1996), when in Inca villages it was learned that the emperor Atahualpa had been put to death by Pizarro, the mobilization was so huge that Incan roads seemed like ant tracks, with of thousands and thousands of people walking back to their places of origin.
The second aspect was particularly appealing for the Spanish. In fact, they implemented the mitimae strategy with a particular bias. Instead of their own culture, they would continue promoting the spreading of the now post-Incan, Quechuan cultural values, by declaring the Quechua lingua franca of the Upper Amazon. The intention was that, along with the spreading of Quechua practices, Spanish practices that the Quechua had already internalized would spread too. That was an efficient alternative to re-teaching their particular ways to every new group they made contact with, especially considering that there were dozens of them, each with their distinctive language and customs. The Quichuization should not be a so-complicated task, since, first, Spanish had already learnt Quechua, and second, historically the Quechua had appointed themselves as the natural leaders of the Upper Amazonian cultures, having considered, although never actually conquered, the Amazon their Antisuyu, or fourth of the Inca realm of four territories.

This is how the Spanish religion and even a bit of the language got to spread to the Secoya and to many other Upper Amazonian communities through the Quechua. However, at the same time Quechuan cultural practices were spread too, beyond some particular nuances of the language that would then be called Quichua. These included the corn agriculture and economic practices such as that of the gift and the mit'a. Finally, and amusingly, practices that combined indigenous customs with the specific customs of the priests got also to be spread, producing curious cultural artifacts such as priest-like tunics with colors and adornments (the Secoya cushmas) and hair styles with resemblance to the Franciscan fashion. The Pa'pa Huë’e would be one particularly interesting of the products of this mix. Its roof would have both Andean and

88 The Quechua language continues to spread "naturally" today throughout the Amazon. (Hudelson 1987, 8-9) In fact, many of the Upper Amazon indigenous groups are just as the Secoya are tri-lingual, speaking their own language, Quechua and Spanish. With more than ten million speakers in South America and the number still growing, Quechua is one of a few Amerindian languages that can be considered saved from extinction.

89 Their contribution in this aspect refers to having widely spread the custom of corn planting. There are some references in missionary accounts that make us think there could have been some pre-contract corn planting in some spots. Probably some of those pre-Columbian corn planters were people related to the Incas and descended to the lowlands.

90 There is a Secoya ceremonial song for a new house's housewarming (Piaguaje Payaguaje n.d., 24). It relates the tunic with the new house, the fact of a house having divisions or being spatially fragmented with that of people having tunics. It would not be so preposterous to think the song is probably stating the historical simultaneity between the new house type and the cushma.

Huë’eca huëhuë’eca,
uhue’eca huehue’eca,
Ju’ica, ju’ica, juju’ica,
ju’ica, ju’ica, juju’ica,

(Room, room, another room, room, room, another room. Tunic, tunic, another tunic,

Part Three – Ethnohistorical and Ethnoarchitectural Aspects of the Secoya Building
Amazonian elements. Its technology mixed Amazonian materials with non-conventional technological decisions taken onsite by European and indigenous. Its structure got a European bed curiously inserted. As for its spreading, Andeans now in the lowland would be in charge.

5.2.1.1. Why is the Pa'pa Huë'e Also Called Quichua House

Different reasons explain why the Pa'pa Huë'e ended up being identified by the diverse indigenous communities of the Ecuadorian Upper Amazon as the Quichua house, or the house characteristic of the Quichua group:

---

91 Cesáreo explains –in a few words that are stronger than a whole treatise I believe- how the Pa'pa Huë'e is actually the result of an interaction between the Quichua and the Secoya building knowledge: the Secoya learned from the Quichua the raised floor, while the Quichua learned from the Secoya the roofing technique:


92 This is a documented and feasible explanation to the origin of the double pole structure (Chantre y Herrera [1799?] 1901, 143). In fact, it could have appeared as an unintended and efficacious result in the process of missionaries trying to guarantee the control of individualized families by making them beds. Beds were a totally new element in the Upper Amazon (and even in the Andes, where the sophisticated Incas used to sleep also in groups, over thick and comfortable layers that, by folding, operated as both blanket and mattress). Beds were necessary because, first, they would help in taking the indigenous out of their inhumane sleeping in the soil, and second and equally important, because with the use of beds it would be easier to control who slept with whom. In that way, the structure of the Pa'pa Huë'e would operate as an individualizer unit.

However, beds were difficult to fabricate. Chantre y Herrera relates the problems the missionaries had when trying to make them. A good bed is a small piece of engineering that needs a very good notch to stand firm. The missionaries did not have the tools to do it, and probably some of them did not have the skills either. At the end, the most practical solution for a low-tech bed could have been to tie the legs of the bed to the posts of the house structure, making the width of bed as long as the distance between columns. This would explain how the bed could have ended in being more a platform. Furthermore, as such it would have been easier to accept by the Indigenous. The missionaries, after all, would have probably risked at the end not succeed in making family members who deeply loved each other sleep in separate, tiny beds. At the end they probably had to negotiate between to continue allowing everybody sleep together in a huge maloca or at least getting to have only the closest family members of a hearth unit sleeping in a platform.

93 The Secoya use both names to identify the house. The say for example "Its name in Pai coca is Pa'pa Huë'e, and it is the house of the Quichua." Sometimes Secoyas even say that the name is Pa'pa Huë'e, which means Quichua House, although its literal meaning is "Palm House."
a. The fact that the Quichua were the main facilitators of the building process of the Pa’pa, translating between the necessities of the missionaries, the know-how of the Amazonians and their own sense of leadership.

b. They were the ones who were given by the missionaries the task of spreading the type, along with their language and other aspects of the Spanish-translated-into-Quichua culture.

c. They were "new" to the Amazon. They did not have a maloca type to be identified with by the other groups, so they would be associated with the type that did not have a group.

d. In post-mission times they kept it as their most used and in some cases their only house type.

These reasons could definitely have made the house to appear characterized as Quichua, despite everybody was using it.

5.2.2. Why Missions and not Simply Towns

Why did missionaries and not other actors involved take charge of the colonization of the Upper Amazon? The Amazon was not immune to the Spanish furor to find gold in every part in the Americas. However, there was a particular sense of frustration in the case of the Amazon because of almost a century (1541 to 1636) of investments in explorations that had rendered no results. In consequence, the Spanish crown turned its interest towards exploiting some other resources that the forest could offer, such as the wood, plants such as vanilla and very especially the vast lands to do cattle and agriculture. However, the environment was particularly harsh to allow a systematic colonization and further exploitation of the territory. Only the clerics were interested in such enterprise because they had a special motivation: saving those souls from their unavoidable fall in hell. They liked sorcery and having two wives, they went naked, they loved killing others. They really needed help.
The Spanish crown gave the missionaries a minimum military support to stay and the right to
govern over the indigenous. What would the missionaries do in order to guarantee their mission
would work with many limitations while facing uninhibited, remorseless, untamed warriors? We
could synthesize their strategies in three:

a. Concentrating the communities, which were migrant (which impacts them at an urban
level with the appearance of the missions).

b. Individualizing the families, trying to break down kinship relationships they considered
incestuous (which impacts them at an architectural level with the appearance of the individual
house).

c. Impacting in other general customs (impacting both urban and architectural space).

Among them:

- Political organization, subverting the established leadership.\(^94\)

\(^94\) Some say the structure of power in the Amazonian communities was so subtle to the eyes of the
Europeans that they simply did not notice it. The "leader" of the group, the shaman, had such a low
profile that the Europeans thought the groups had no leaders at all. They did not understand that not only
the prestige but the survival of the shaman depended on keeping such low profile. It demonstrated not
only virtue through humbleness but it saved him from being too visible and hence exposed to be accused
of doing the sorcery that caused the deaths in neighboring villages ("he is a quiet man, he could not have
done that," as opposed to "he talks too much. Surely he did it").
The Spanish, in fact, expected a more visible and vocal leader to deal with, but especially one that was
more influenceable and who was less compromised with the idea of being a sorcerer, which is how they
saw the healing and prey-calling practices that the shaman had to carry out among his duties.

That is why part of the strategy of the Mission was to subvert the power of the shaman by using different
practices: debilitating his image by embarrassing him with public punishments like lashes, simply jailing
him or sentencing him to death with accusations of sorcery or insurrection, and, the most commonly
undertaken, encouraging young people with natural leadership talents to undermine his authority. These
young people were raised often by the priest. They were like his kids, and were often taken from their
mothers and given to the missionary as an asset by some authority or just taken by him.

Educated in the Spanish values and interests, the Catholic religion and the Quichua language, the young
leader would be called with the military name of "Capitán" (Captain). By being a "good kid," following
what the priest commanded, the life of the Captain was definitely much easier than that of his relatives
and surely he would not like to loose his privileges for nothing. That is how he ended by defending the
interests of the Spanish over those of his own people. He spied on them for the priest and he was in
general a translator of the desires of the Spanish over his community, while having some sort of immunity
in front of them because they would always acknowledge him as one of the relatives and would either
think twice about hurting one of their own, or have arguments about if attacking him or not. In any case,
the Captain was very useful in performing for the Missionary a valuable labor of dividing and conquering.

Although not necessarily in discrepancy, the structure of two leaders survived the times of the Mission in
many indigenous communities of the Upper Amazon, the Secoya among them. There is normally a
young, politically oriented leader who deals with the affairs of the community amidst political or economic
instances (signing agreements with outside organizations, doing petitions for the government and legally
representing the community), and there is a low-profile old man who eventually gives advise not to be
necessarily followed, keeps some of the storytelling to those who want to hear it, represents the
community as an icon in cultural or symbolic acts and, less and less often, performs healing ceremonies.
- Economic issues: Changing the Amazonian indigenous economy in order to make the mission productive. 95
- Cultural issues: impacting, by force (language) or unintentionally (the type of dress) in the local cultures.

5.2.3. How Missionaries Affected Upper Amazonian Architecture

Who would build the mission, if there were no resources to pay for the works, nor enough military to undertake them, or to force the indigenous to undertake them, nor slavery on the Indians was officially authorized, and most of the missionized indigenous were not so motivated to do it, since they were usually suspicious about what was going on? The responsibility relied on the only actors that were interested, the missionaries themselves, and the few loyal indigenous they could get in. These included some of the Quechua with which they had been traveling, and some highly motivated Amazonians.

The clerics, therefore, had to play the builder. The account by Father Chantre y Herrera provides several cases of this. A priest resettles some indigenous and tries to teach them how to build with the technique of tapiales\(^\text{96}\) (Chantre y Herrera [1799?] 1901, 152). Another priest learns that houses in thatch and wood cannot be placed nearby after a fire in one of them burns the whole mission he had built with a lot of effort (465).

They had to be builders, independently if they did or did not know how to. To those who knew, the knowledge seemed not to help much in any case, since they did not have tools or materials to do the type of building they knew, the one of the European tradition. An ambitious priest ordered the building of a whole village in tapiales and white painted walls, but Chantre himself says missions like those were quite a rarity (489). The tapiales were soon abandoned. Knowledgeable priest-builders had, just as the neophyte, to be creative and adaptable. They had to learn how to build emergency churches out of branches (De La Cruz [1653?] 1999, 207), making efforts to lay them with "as much decency as possible," as Father De La Cruz said (222). They had to use the materials the indigenous used: palm, vines, and woods they had never seen before. The indigenous mastered them, they did not, so they also had to learn from the indigenous technology, which they ended by adopting with modifications that came from their own building experience and the experience everybody in the venture developed. They went through a long trial and error process, trying to accomplish a building that served the conditions of durability the missionaries were looking for, with the temporariness of the available materials. The collaborative process probably ended in the Pa’pa Huē’e, after more than a century of attempts, from the moment when the priests arrived to the Upper Amazon in 1636 until at the most 1767 when they were expelled from the Americas.

\(^{95}\) It happened mostly through the use of the gift and the mit’a, the two economic systems borrowed from the Incas, and the encomienda, a Spanish implemented one. These are described briefly in the glossary.

\(^{96}\) Enormous, massive walls of clay.
5.2.4. Implementing the Double Pole Structure: The Problem of the Materials to Build the Mission

Missionaries found at least two practical building problems when trying to materialize their plan. They were lack of tools and lack of materials.

The Amazon was so distant that the missionaries usually ran out of the simplest elements, so regarding building tools, if much they carried a few axes that often had to cede, using them as currency to negotiate the annexing of new individuals to the mission or the staying of others.

The second problem was that there were no building materials they were familiar with available in the area. Not always the clay was good enough to make for instance bricks, and, if it was, creating and maintaining the infrastructure to fabricate them was very complicated. As for stone, the scarceness was so critical that in 1781 no stones could even be found to construct the boundary markers between Spanish and Portuguese possessions, which hence had to be made of wood (Smith 1946, 39).

The limitations conducted to a paradoxical situation in which the missionaries wanted to remain fixed, but using materials that deteriorated. How to keep the indigenous in place but still using degradable material and just a few tools? This could have been the main question the missionaries were confronted with.

Such paradox constrained the building in the mission to several rules: it had to be in local materials, and although using wood, the carpentry should not be as complicated as the European carpentry of the time, because there were no specialized tools available. The structures had to be simple, but very resistant. The double pole, in consequence, would turn out to be the alternative to respond to these constraints.

The handling of the structure itself would be complemented with extra conditions to guarantee its durability, such as to do a controlled burning of the end of the poles that would be stuck into the soil, in order to avoid a fast deterioration. Another condition was never to build the houses one by the side of the other like was customary in Europe, because that amplified the consequences of fires.

Also some ideological conditions were added to be observed. One of them was to locate the houses either longitudinally or perpendicularly in relation to each other following the Spanish manzana (squared housing blocks) logic. Another was to saw the wood in square sections if possible.

97 For sure it was not easy, for example, to keep enough provision of dry wood for the kiln.
98 However, the woods were in fact good. One of the markers was still seen in place 40 years after, (40) despite having been stuck in a wet soil for such a long time.
5.2.5. Spreading the Solution Globally

It is possible that right after proving that it worked, the structure of the Pa'pa Hué'e became popular among the missionaries in other places. Otherwise it is hard to explain the presence of almost identical structures in distant places such as the Chocó in Colombia, Florida and New Guinea. The only common point these places have in relation to the structure is that they were places of missionary activity during the 17th and 18th centuries. If this assertion can be proved, we would be talking about the Pa’pa Hué’e as the house for missionization in the tropical forest, or the tropical forest mission house.99

5.3. The Ethnohistorical Context of the Zinc House
(From approximately 1970 until today)

The caucheria, a rubber business,100 triggered the use of industrial building materials in the Upper Amazon, and boasted Western urbanism in certain spots. However, this boom did not affect indigenous in a positive way. Since wealth from rubber was only guaranteed throughout their endeudamiento (indebtedness), a system that was as perverse or more than slavery, industry emerged in the Upper Amazon as a symbol of tragedy for the indigenous communities.

---

---

99 The lack of walls feature, or the presence of just small ones in the Pa’pa Hué’e may have appeared after the end of the Missions. Eighteenth century images of structures probably corresponding to the Pa’pa Hué’e show it totally covered by what it seems to be panels of either opened Guaduás or a woven fiber (Smith 1946, after 48 [figs. 8 and 9]). It is probably, therefore, that at the beginning the structure of the house was not as transparent as it was in the twentieth century.

100 A historical perspective of the caucheria is presented in the glossary.
Although it is not certain when exactly the Secoya started building with zinc,\textsuperscript{101} it is a fact that metal as a building material reached the Upper Amazon not long after emerging as a building revolution in the 19th century Europe. In fact, it is commonly sustained that the house displayed along with the Tour Eiffel to promote the blessings of the material in the 1889 exhibition ended up in the forest. After the Paris exhibition, it was bought by Vaca Díaz, the partner of rubber baron Fitzcarrald. Vaca had it shipped to Brazil, and sent up the Amazon River in a boat called Perseverança, "perseverance," until its final destination in Iquitos, Peru.\textsuperscript{102}

Iquitos, that by then had become the Upper Amazonian epicenter of the rubber exploitation business, pioneered in the building history of this territory two important facts. The first one was the use of industrial building materials, for the infrastructure to develop the industry and houses for the managers. The second one was the arising of the Amazonian city, as a consequence of the industry boom. In fact, Iquitos, which had begun as a Jesuit mission in 1754, grew from 1,500 inhabitants in the 1870s to having sixteen times more people just ten years after, because of the caucheria.

Rubber was destined to generate a major change in the building landscape of the places in the Amazon where the collection and shipping of the material was centralized. The two most outstanding spots were Iquitos, up the river, and Manaos,\textsuperscript{103} in Brazil, downwards. The two cities boasted displays of building snobbism made only possible by the revenues from the rubber tree.

---

\textsuperscript{101} It is possible that they started using the material with some regularity by the early 1970s.
\textsuperscript{102} Not long after the arrival the house would be sold to another baron rubber, Anselmo del Aguila.
\textsuperscript{103} Founded as a Portuguese military fort in 1669.

Part Three – Ethnohistorical and Ethnoarchitectural Aspects of the Secoya Building
Manaos' municipal market in 1882 was built as a copy of Les Halles Market in Paris, and the construction employed iron and glass imported from Europe. The main streets of the city were paved with stone shipped from Portugal. The floating port was designed by English engineers. The customs house was entirely imported as pre-cut stone from England. As for its most impressive building, the opera house, built in 1896, it was the largest of its kind in South America. Its plans were drawn up at the Lisbon Engineering Lyceum. The building was decorated by various Italian painters and sculptors, and its materials featured tiles from Alsace, marble from Italy, stone from Portugal, iron from England and furniture from France, all of that surrounded by a dense forest.

As for the indigenous, such a spectacular event as industrial cities did not appear to be particularly seductive. Simson (1886, 214-215; [1886] 1993, 208-210) felt very disappointed when he took some Záparos to Iquitos. Despite never having seen a city, the indigenous did not show any particular emotion. The only thing that called their attention was a mechanical band saw. It was understandable. The cities were not only unattractive but they needed to stay away from them. It was the industry that allowed their arising what had originated the death of thousands of indigenous in a matter of a few years because of hunger, disease, torture, or their being hunted as animals (Hardenburg 1913, 217-263).

Fig. 5.7. The corpse of an indigenous who has died inside of a maloca in Putumayo, during the rubber boom era (After Hardenburg 1913, after 52).
Final Remarks

Chapter 5 explored the historical context in which the Tui'que Huë'e, The Pa'pa Huë'e and the Zinc House appeared. It offered historical evidence that type forms, space and solutions were not static but they had been evolving. That is verifiable even in the case of the Tui'que Huë'e. To the stereotype of "pre-historical," isolated people who did not change over the millennia, facts show that there was always an interaction, and house modifications resulted from it. Regarding the Pa'pa Huë'e, the type resulted as the modification of three building traditions that ended in a totally autochthonous structure of double poles, after a long process of trial and error. As for the Zinc House, even thought it appeared in a relatively recent time among the Secoya, it is related to a long history of permanence of zinc in the area, a permanence that is linked to one of the most serious transformations in Upper Amazonian culture throughout history. Given these facts, there is no doubt that in the Upper Amazon change in building has been a historical phenomenon that comes from distant, undocumented times. What has represented this change at a socio-cultural level will be examined in Chapter 6.
CHAPTER 6
Ethnographic Aspects Concerned in the Secoya Building Change

Initial Remarks

This chapter contains a series of notes about ethnographic (socio-cultural) aspects involved in the Secoya building and affected by the change. This chapter is a key conceptual setting for the thesis, along with the description of the types (Part two of the thesis) and the glossary, at the end.

Why is this chapter important? It allows understanding two main situations. The first one is related to the tremendous value, at a cultural level, that the Secoya Jaihuë'e had. This is evident in how deeply was the building related to the mythical beliefs of the group (6.1) and how its particular disposition could have represented a survival strategy, by being the central space an overpopulation controller (6.2). The second situation is related to the consequences at a social level of the Secoya not building this type anymore; these include how the change in the housing type also represents the vanishing of ethnic distinctiveness (6.3), how the fact that the Zinc House does not require as much maintenance as the Tui'que Huë'e has contributed to debilitate social bonds (6.4), and how, although surviving the change for longer than the building, Secoya kinship structures could have started to change as well, doing to natural reasons related to the change in their living conditions and the resulting necessity to renew the genetic material (6.5).

With this chapter I intend to challenge a non-uncommon ethnocentric position that says these buildings were only shacks. This chapter shows, on the one hand, how they were more complex than that, and on the other, what is the tremendous impact for the Secoya not being able to build them anymore. The chapter provides the background for the reasons and justifications of the change that are offered in Chapter 7.
6.1. Tui’que Huë’e's Building Principles, as Expressed in the Secoya Myths

Building in the Secoya myths often goes beyond being a mere mention or a neutral setting for the actions, becoming a protagonist element. In fact, two of the central Secoya myths are related to building, and they actually summarize the reasons behind the characteristic organization of the Tui’que Huë’e.

The two main Secoya myths that involve building (Cipolletti 1993, 267-72) are installments in a series of adventures involving three male and two female characters. Two of the men in the myths are, first of all, Nañé, the moon, the most important divinity for the Secoya, one they associate with the Christian God. The other one is Wekë, the tapir, who is the double-in-law of Nañé, because the God has married his two daughters, the two women of the stories. They are Repao, the younger (50), and Rutayó, the older (51). They are the lovers of the third male character, Mujuë, the thunder.

The general line of both stories relates to how the in-law and the lover, each at his turn, plot to get rid of God. One of God's wives, Repao, remains loyal to him while the other one does not. That decides where would each live, once God's sagacity prevails over the tricks of his antagonists. Repao has two houses in heaven, one in which she receives the souls of dead people while they get adapted to their new state (50), and other which is the house she shares with her husband and God Nañé, living separately in one half of it. As for Rutayó, the unfaithful, she lives underground, in a place the Secoya associate with hell.

---

This is a proof of the fondness the Secoya have for building.
Nañë, the moon, is an interesting character. He creates humanity out of monkeys, and then he
creates the rest of animals out of humanity (Moya 1992, 84). But he is also the proprietor of the
key secret for the Secoya building, one that people just cannot build without, as their houses
would invariably fall. The secret is how to make the proper joints between the poles, so they
can assemble well (Cipolletti 1993, 47). That he knows the secret for good building calls the
attention of both the tapir and the thunder. The tapir wants to be taught. He pretends that he
used to know but he forgot (Payaguaje et al. 2002, 65-66; Cipolletti 1993, 47-57). The thunder
resists being taught until the house he is trying to build has fallen down too many times.

The moon is rather hyperactive, which should be logical for a God who is in the process of
creating. Even when he is teaching the tapir and the thunder the cuts, he does not stop creating
animals. The flakes coming out of the wood being carved transform in new species. Swallows
are formed from the big pieces and sardines from the smaller ones, for example (47, 51). After
their houses are finished, the myths narrate, the tapir and the thunder try to get rid of the moon.
However, they both fail, becoming new animal species, or natural elements after dying in the
attempt. The moon cuts the tapir in two, making him incarnate in three animals: a manatee, a
real tapir, and an invisible one (Moya 1992, 343-344).

The thunder, for his part, ends in the suggestive architectural setting he has prepared for his
decisive trick: the house the moon just taught him to build will be precisely the place in which the
moon will have to die. He defies the moon to fight in a ritual battle, in which each one would take
turns hanging from the roof’s main longitudinal beam (Cipolletti 1993, 54). The rival has to
attempt to cut his hanging counterpart in two. The weapons would be long knives made of Caña
Guadúa (52-53; 56). The moon takes his turn and hangs up first. The thunder’s attempt fails.
The moon’s body is as resistant as rubber, and the bamboo that the thunder had chosen for his
knife was a bad one (53). At his turn in the knife, the moon cuts the thunder right away, making
his body fall east and his head fall west (Payaguaje et al. 2002, 65; Vickers 1989, 167). The
orientation of the Tui’que Huë’e is supposed to commemorate the episode (Vickers 1989, 159).

The two described myths are interesting in that they explain most of the key features of the
Tui’que Huë’e architecture:

a. Precise norms. There are norms in the way a building has to be made, and those
norms have to be taught and learned. If the right way to build is not followed, the building will
collapse. That is what happened to the thunder.

---

105 Beyond being basically the mythical creator of architecture among the Secoya, Nañë also creates the
boats (see narrative in Cipolletti 1993, 76).

106 Transcribing a narrative by Celestino Piaguaje.

107 The ethnographic work by Cipolletti, unfortunately, does not describe with clarity what beam the myth
is talking about.

108 Additionally, the myths imply, people are normally curious about other people’s ways to build, a very
common attitude in the Upper Amazon.

Part Three – Ethnohistorical and Ethnoarchitectural Aspects of the Secoya Building
b. Joints. Above all, there is one essential concept when mythically talking about the Secoya building technology. It is the need for proper joints.

c. Communitarian houses. Extended families live in a single house. Both myths mention in-laws, questionable friends and in, other section of one of the myths, not detailed here, also the moon's siblings, all of them living in the same space.

d. Materials of vegetal origin. This is architecture in wood. However, not all types of vegetal building materials are to be used indiscriminately. Although a very efficient building material, Caña Guadúa is privileged in the myths as a weapon-making material, rather than as a building resource (Moya 1992, 86-87).\(^{109}\)

e. Cardinal orientation. The main axis of the mythical Jaihuê’e is oriented east west, in the direction the two parts of the thunder’s body were thrown to.

The five elements these myths deal with define the main principles behind the Tui'que Huê’e’s building. If we add two more principles, the semi-temporality of the house and the importance of the central space,\(^{111}\) the house is completely defined.

---

\(^{109}\) Cipolletti (1993, 115) mentions a sort of "war mantra" dedicated to the guadúa:

"Wí wáti, wí wáti mamé yi'ýó wëppë
wáñí kë'kö saokëñá koasi'á
wáti pai mañá ru'asaoñi sá ti'á saokëñá."
(The guadúa of the wí wáti, of the wí wáti will appear here, and the wáti will be afraid.
Every wáti that shows up will see the guadúas and will be afraid).
Wáti or "devils" are beings that share a house in the edge of heaven with the defeated Mjjuê, the thunder. The pathways through which they circulate are those through which also diseases circulate. (Moya 1992, 96).

\(^{110}\) Moya (1992, 88): The multi-colored people of heaven abandoned in earth their bamboos to make lances. The Piaguaje lineage found them. She takes a narrative from Fernando Payaguaje. She also makes (86-87) an elaboration on the bamboo guadúa as the element used for war by the celestial antecessors.

\(^{111}\) Referred in a historical context in Payaguaje 1994,35

Part Three – Ethnohistorical and Ethnoarchitectural Aspects of the Secoya Building

The limitations of having only myths available in some cases to explain certain facets of indigenous culture, such as its architectural history, come sometimes as a blessing in disguise. Whereas we can question Levi-Strauss' idea that myths express mental structures and hence a society is "captive" of those structures (so it is impossible for them to change), the sketches he used in order to support his hypotheses provide charts that are valuable for the understanding of how architectural structures work in Amazonia. In other words, if the myths do not express mental structures, they probably do express building structures.

Developed in the 1940s and then contested, Claude Levi-Strauss' structuralism contends that myths are a tool a human group produces to explain concerns its members cannot easily explain in everyday life. For example, who sits where at the dinner table, or who sleeps with whom. He made actual sketches in his aim to explain how the underlying structure of several mythical narratives in the Amazon actually expressed organizational structures in the groups, structures that were reflected in how they used space.

The problem with trying to reduce culture to a mere matter of mental structures was then debated to Levi-Strauss by Harris and other cultural materialist anthropologists. This is today the most invoked alternative to Levi-Strauss to understand the cultures of the Amazon. Human beings change and adapt. We are not captives of our mental structures.

Fig. 6.2. Two typical organizational charts in Levi-Strauss analysis (After Levi-Strauss 1963, 128, 134).
The importance of Levi-Strauss' charting is unquestionable however when it comes to another context, that of building, in particular that of societies that did not keep written records. In his organizational charts, architecture is implied; and if myths cannot completely explain the whole changing culture of a human group, they at least do a good job in explaining the underlying laws of its construction in a given moment.

Indeed, when both approaches combine they do very well in explaining where did, and why, an Amazonian architectural structure such as the Jaihus'e comes from. If Structuralism explains under what mythical presumptions the Secoya organized as they did in the house, cultural materialism will explain what role such disposition took in the survival of the group.

There result is interesting when we attempt such a combined analysis in the Secoya case. A Levi-Straussian\textsuperscript{112} approximation shows how the myth of Nañê living in the same house but separated from his wife can be related with the actual organization of the Jaihus'e. Furthermore, observing such myth from a cultural materialist perspective evidentiates that this organization could have been in relation to the survival of a Secoya Jaihus'e group in that it could operate as an overpopulation controller.

![Diagram of Jaihus'e structure](image)

Fig. 6.3. An analysis of the Tui'que Huê'e under two anthropological perspectives.

\textsuperscript{112} Levi-Strauss did not collect any Secoya myth for the research that he published in the form of three mythological series books. However, since the 1970s over 100 Secoya myths and narratives have been collected and published by other ethnographers.
a. Chart of physical location of the sib members:
Levi-Straussian scheme of how the group organizes or locates physically.
Men sleep separate from women.113

b. Myth:
The myth or myths Levi-Strauss would mention as those who explain the reasons for men to sleep separate from women.
Myth 1: In their visits to the house of God (Ñañë), shamans noticed how he lives at one side of the house while at the other side lives his wife Repáó. They are separated by a big hole in the center. If somebody falls through that hole when trying to cross, they will crash into the earth, an inferior world.
Myth 2: The house in earth is organized exactly like the one in heaven. Their spatial organization has to be identical, so when people die they do not miss what was left and do not want to return as ghosts and scare relatives.

In consequence, the center of the Jaihuë’e cannot be crossed, because if people do it, they will imaginarily fall through a hole to an inferior world, one that is underground. Underground is where hell is located, and the idea of falling there is, according to some ethnographers, one of the most scarying for Secoya children.

c. Plan of the Jaihuë’e:
Relationship between myth, social organization and building structure. The recycling of Levi-Strauss: structural plan of the Jaihuë’e shows how the physical structure of the house expresses and confines a type of social organization that was initially justified through the myth.
The central space is considerably higher. The columns that define it are very visible, hence it is very easy to notice, and socially control, when that center is being trespassed (that includes the corridor between the two doors at the endings). People cannot just pretend they got confused and they did not know when they were crossing.

d. How does that house organization guarantee the survival of the group.
Meet up with a cultural materialist approach.
The myth, and the corresponding house structure, would operate as an overpopulation controller in a forest that does not have food resources to feed a hunter-gatherer group that has grown beyond control. How does it work? If there is a social control about crossing from one side to other, men would not be able to look for women or vice versa in the middle of the night. Reproduction would take place during the day, in the woods, in less comfortable conditions. That way it would less likely happen.

Showing how myth, architecture and survival were related among the Secoya could explain the reason why the structure of the Jaihuë’e was arranged in the way it was.

113 If this ever happened, which is feasible as we saw in Chapter 4.
6.3. Building as a Way to Express Ethnicity

In the progress from Tui’que Huē’e to Pa’pa Huē’e and then to Zinc House, we assist to the loss of ethnic distinctiveness in the Secoya building practices. Among the three types the thesis describes, the only one we can call strictly Secoya is the Tui’que Huē’e. The Pa’pa Huē’e inaugurated a tradition of houses the Secoya did not consider their own. It was, in fact, a neutral type used by many of the missionized communities in lowland and foothill communities in the Amazon and the world. As for the Zinc House, it went even beyond in its globalized character. It did not only appear in lowlands and foothills, but geographically anywhere.

Although often overseen by outsiders, differences between building types were crucial for Amazonian communities. Types were one of the most powerful ways to express ethnic uniqueness. Particular ways of building characterized each culture and were a motive of ethnic distinctiveness and pride.

A builder could just not build the way other groups’ builders did. If he did that, he was considered a poorly skilled builder who deserved to be ridiculed for his clumsiness. Architecture was, in fact, as relevant to differentiate ethnic groups as it was language. In the Amazon, different cultures spoke differently and built differently.

It is precisely because of this reason that the appearing of types that came to uniform building practices from different cultures was very significant. In their cross-cultural affiliation, the Pa’pa Huē’e and the Zinc House were destined to delete a very rich stock of building traditions and to contribute to the loss of them as cultural self-affirmation practices not only among the Secoya but also among other groups. At a cultural level, what these types represented was as serious as the imposition of a unique language. In actuality, it was probably even more serious, because many groups were able to overcome the language imposition, but most of them could just not overcome the house imposition.

6.4. Building Maintenance as a Social Cohesive

A builder could just not build the way other groups’ builders did. If he did that, he was considered a poorly skilled builder who deserved to be ridiculed for his clumsiness. Architecture was, in fact, as relevant to differentiate ethnic groups as it was language. In the Amazon, different cultures spoke differently and built differently.

It is precisely because of this reason that the appearing of types that came to uniform building practices from different cultures was very significant. In their cross-cultural affiliation, the Pa’pa Huē’e and the Zinc House were destined to delete a very rich stock of building traditions and to contribute to the loss of them as cultural self-affirmation practices not only among the Secoya but also among other groups. At a cultural level, what these types represented was as serious as the imposition of a unique language. In actuality, it was probably even more serious, because many groups were able to overcome the language imposition, but most of them could just not overcome the house imposition.

6.4. Building Maintenance as a Social Cohesive

114 Even after several generations of using the Pa’pa Huē’e, the Secoya still call it “Quichua House.”
115 The Quichua, for example, says Cesáreo (2003), used the same palm type that the Secoya to thatch their houses, but they used a different technique:

"[Los Quichuas tienen casa?] Sí así tiene ellos también. Otra forma tiene diferente. Quichuas y ese techo y pajar techo diferente pero no. Poco sabe puro no sabe poniendo así puro ciento puro ciento. Así hace. En cambio nosotros trabajando, igualito para hacernos el ciento. Así, empajando bueno para el techo. [Los Quichuas empajan diferente?] Sí. Todo para otra cosa." The Quichuas, says Cesáreo, do not care about the distances between the main nerves of the fronds in one horizontal line and the line right below, whereas the Secoya take care in making those distances even. The Quichuas do not know, while the Secoya do. This was usually a constant in the Amazon building culture. Independently who the speakers were, they would always consider their group had finer building skills than the neighbors (as in an Amazonian version of Freud’s “narcissism of minor differences” idea). True or not, building always provided an opportunity for cultural affirmation processes.
One of the implications of the abandonment of the Jaihuë’e is loosing the possibilities that the structure offered as a social cohesive. If there is not the necessity—or the opportunity—for people to get together and perform periodic community works of maintenance, social ties tend to break up. Self-centering, individualization grows instead in their place. The simplicity with which a Zinc House can be roofed stimulates individualism over communitarian action, given that users do not need the help of others for the maintenance of the house.

The essential element linked to the economy of slash, burn, hunting and gathering, is mobility. Mobility is so inherent to the way of life of migrant communities that an individual would not need a major reason to leave the group. The maintenance of the Jaihuë’e is high, and it keeps very mobile people thinking in terms of staying together. When something deteriorates in the house, it has to be fixed, and many things deteriorate. Maintenance often involves work that requires cooperation. This cooperative work includes clearing up around for protection from snakes, doing journeys to get new palm fronds, and constantly fixing the roof.

At least twenty persons were necessary to re-roof a Tui’que Huë’e once in a year. Only two persons roof a Zinc House once in the lifetime of the structure, and then they do not need to do major repairs in five to ten years; in the case that they have to, only one person can perform them. Such enormous difference in the attention that has to be devoted to maintenance has to have implications in terms of collective action, too. Something has to happen in a human group when, abruptly, there is not necessity anymore to do community get-togethers to perform a task.

There abound narratives that tell about persons leaving their group with great facility for a big array of reasons: seeking for an enemy, venturing in a long hunting trip, looking for adventure, searching for love, or just because. Those are decisions taken on the go, without involving a lot of preparation. In one of those narratives, for instance, a Siona man runs into a Tetete family. They are partying and invite him to join. They offer him a girl for taking to his group. He says no, because he has to consult with his relatives. They insist, but he leaves without accepting. She cries, because she suddenly wants to go (Payaguaje 1994, 27-28).

The case of a public wall in the Peruvian Andean town of Pacariqtambo (documented by Urton [1988]) provides a striking example of the social implications of suddenly disappearing the necessity to perform community work. A mud wall in the town’s central plaza required constant maintenance, because of the material it was made of. Its maintenance, however, became the catalyst to keep active an old Inca system of work division, the Chut’a, which at the same time invoked an old system of social organization in pan geographic clans, called Ayllu. To perform the works, the wall was divided in a number of Chut’as, or work partitions, equivalent to the number of ayllus that still had representatives in Pacariqtambo. Each ayllu had to perform the maintenance of its wall portion throughout the year. Depending on their resources, time availability and motivation, some would have a great work done while others would just refurnish their portion once in a while. As a result, the wall was like a collage with a different set of final finishes. It looked weird for classical standards.

When doing remodeling works to commemorate the contact's fifth centenary in 1992, the project for the Pacariqtambo’s plaza included the demolition of the wall and the hiring of contractors to build a new one from scratch, with durable materials and State-funded.
The fact that maintenance works demand good coordination turns the building of the house into the building of the community itself. Social life happens under the base of solving common necessities. If the necessities decrease, social cohesion weakens. People isolate, and end by cloistering themselves. It might not be coincidental, but indeed consequential, that at the same time the Secoya changed to zinc, they added tight walls to their houses, separating themselves from their neighbors.\footnote{William Vickers, in fact, relates individualization in the Secoya community with the effectiveness that industrially manufactured tools offer. Metal tools, he says, increased efficiency in garden work. Communitarian help was no longer necessary and hence extended families were able to split into smaller units, each independently cultivating its own crops (1976, 128, 145).}

6.5. Kinship and Building

6.5.1. Kinship in the Process of Change

The process of change from communitarian to individual house in the Secoya case did not involve a special intermediate gender-based structure. It did, however, involve an intermediate phase of temporary living in an individual structure that would eventually become permanent, if social tensions that had originated the moving out of the Jaihuë’e of part of the family could not be worked out, and hence they had to stay away.

Kinship has been routinely important in the ethnographic analysis of change from communitarian to individual house in Amazonian groups. In most of the cases, the process of change went through an intermediate phase. In some of them, that intermediate phase involved the existence of quite interesting intermediate, gender-based building structures.\footnote{The iconic example is that of the Mundurucu in Pará, Brazil, studied in the 1950s by Yolanda and Robert Murphy.} Kinship results important to analyze the change because, depending on if the society was matrilocal or patrilocal, the subordinate gender had to afford the displacements in order to guarantee the biological reproduction. Once the society became individual, the resulting structure derived from a "women's" or a "men's" house.
The process in detail consisted in that, for the case of a matrilocal society, women and kids of both sexes lived separate from men and during adolescence boys displaced from the women’s structure into the men’s one. After marriage, for procreation a man had to displace to the women’s house where his wife lived and then return to the men’s house. When time passed, he returned less and less often to the men’s house, and that settled the origin for nuclear family structures.

The Secoya case was different. They are patrilocal (Vickers 1989, 179). The woman has to move to her husband’s house. However, this fact did not seem to have affected the change from the Jaihuë’e to the individual house. The change amongst the Secoya seems in actuality to be closer to what Jackson (1983) describes for the linguistically related Barasana, in the Colombian Vaupés River basin. According to her, the reason for the Barasana change was that social structure weakened, causing hearth families to periodically split out of the maloca unit. In the particular situation of the Secoya, myths seem to suggest a pattern in which, if social tensions were overcome, the expulsed hearth family members returned to the Jaihuë’e. For example, a man in one myth lives with two women; because of that, he has to move away to live in a tambo; when one of the women dies, he is able to return with the other one to the Jaihuë’e.

Some of the most apparent causes according to Jackson’s observations were tensions and fissions caused by gossip. This coincides with Vickers’ associating the process of separation with availability of resources. He says that having more efficient tools increases productivity. Thinking on Jackson’s assertion, we could say that gossip is also related to productivity. She reports how food distribution was one of the most recurrent motifs for gossiping amongst the Barasana. In that case, gossip was operating as an ecological alert that said it was time for a part of the community family to split out and depart in search of new productive areas. This is also coincidence with my finding that the process of change was for a big part related to access to resources. I will develop this in chapter 7.
The individual house resulted when the tensions could not be solved and, in consequence, staying in the individual structure became permanent. For instance, the mythical two wives of Ñañë fight, and their fight is over men. Repao wants to return with Ñañë, and Rutayó wants to stay with Mujuë, their lover. As a consequence of the conflict, everybody lives in separate houses.

6.5.2. The Stability of Kinship Structures

Despite the change in architectural and urban structures, kinship structures among the Secoya seem to have maintained some level of uniformity, at least until recently. If further research demonstrates that architecture and urban organization in the Secoya have been changing but their kinship structures have remained the same, the change in the Secoya building should be considered at some point superficial, cosmetic. Only until a certain point, however, because building could become in actuality a valuable resource to test the permanence of social organization structures. As a matter of fact, still in 1997 the Secoya individual houses did not have any kind of plot separation nor fences or divisions in between them. They seemed to be operating like the big house, just a bit separated, less strictly organized and with its roof fragmented. But the interfamily relationships continued to be very close. This fact has important implications. It could help in supporting the idea that kinship is one of the things that remain more stable when cultural change happens, while building would be just the opposite, one of the most volatile.

However, it is possible that in recent years also the kinship structures among the Secoya have started to change, when more and more Secoyas are marrying non-Secoya individuals. The motivation varies from moral pressures derived from the Christian faith to a natural necessity to renew the genetic material inside of the group. In fact, the Secoya of the Aguarico come from two families, the Piaguaje and the Payaguaje, that have been intermarrying for at least six decades, since the moment in which they separated from the Peruvian Secoya communities and moved into Ecuadorian territory. In the past, isolated Amazonian sibs brought variety into their genetic material through wars. These ended customarily in the taking of women from the defeated group and their annexation to the family group. Maintaining isolation without war could lead to exhaustion of the genetic material.

121 "Así casando. Piaguaje hombre Payaguaje mujer casando. Así casando antes. Otro raza otro raza casando. Ahora no se puede casar. Puro familia. Porque ahora... por éso Quichuas casando. A Secoya casando. El dirigente, el hijo de mi hijo, César hijo, Firpe, dirigente OISE, Quichua casando." (That way we married. Piaguaje man married Payaguaje woman. That way we married before. One race married another race. Now we cannot marry. Because... because of that, we are now marrying Quichuas. They are marrying Secoya. The leader, the son of my son, César’s son, Firpe, OISE’s leader, married a Quichua). (Cesáreo 2003).
Whatever the reason, when members of outside the structure are increasingly incorporated, impact over the existing kinship system is expected.
Final Remarks

Chapter 6 has explored the ethnographic, socio-cultural factors involved in the building of the Secoya and affected in the change, showing the enormous significance the change had for them.

The architecture of the Jaihuë’e was deeply related to the mythology and survival of the group. Its abandonment strongly impacted Secoya’s ethnic distinctiveness and community action. Furthermore, the abandonment of the house was related to the change in their general life conditions and once it started it could not be stopped in the middle. Using the classic and simplistic scheme to summarize the situation, you cannot continue living isolated without warfare.

The discussion with which the chapter ends announces that of Chapter 7, which examines in detail what were the factors that pressed the change in the Secoya life conditions. That chapter cites each factor and shows how deeply interconnected they were as to basically siege the Secoya, making their change unavoidable.
Part Three Final Remarks

Part Three offered evidence that building change in the Upper Amazon has been a historical phenomenon coming from long ago. The phenomenon, in fact, has affected even those types that are thought of having been static, the traditional Tui'que Huë'e, which changed until the last decades of presence as the house of the group, and the modern Zinc House, which it is not as new in the area as it is commonly believed. Subsequently, it was offered an overview of the crucial significance that the change had for the Secoya life. The abandonment of the life in the symbolically rich and distinctive Tui'que Huë'e had implications in terms of ethnic affirmation, community-building practices and, at a broader spectrum, the kinship system.

This part has enabled us to understand the Secoya architecture as a variable of change and to put in value the impact of that change. With that, we have acquired both knowledge and motives to explore the reasons of the change and the lessons derived from that in Part Four, the final part of the thesis.
PART FOUR
Understanding the Change Between Landmarks

Part Four Initial Remarks

The previous two parts of the thesis showed how different are the main historical landmarks in the Secoya building; how they evolved, and how significant was the change. This chapter is a reflection on that change, directed towards two main questions. The first one is why did the Secoya building change (triggered by what factors and why and how?). The second question is what do we, as architects and people concerned with environmental and social issues today, learn from the Secoya case?

I will provide the explanations to what I believe are possible answers to both questions. First, the main two elements triggering the change were related to economic aspects on one hand and purely building aspects on the other. Second, probably one of the main lessons we as architects and outsiders can learn is related to the necessity to review popular myths and preconceptions on sustainability issues in environmentally and culturally threatened places. With the revision of those urban myths the thesis concludes.
CHAPTER 7
Reflecting on the Change: Economic and Building Related Aspects

Initial Remarks

This chapter will mention and analyze the factors that triggered the Secoya building change. They are divided, for a better understanding, in economically related (7.1) and related to building (7.2). However, they interact and overlap one another. The triggering factors I found related to economy were five, and the building related ones were four. The economic ones were longevity or durability (7.1.1), costs (environmental [7.1.2.1], financial [7.1.2.2], and time [7.1.2.3]) and goodwill (7.1.3). As for the building related ones, they were associated to the language of the material (7.2.1); the technical specialization required (7.2.2), the rigidity in the traditional structures (7.2.3) and the natural adaptability and proneness of the Secoya to take functional solutions (7.2.4).

The aforementioned nine were powerful factors that made change unavoidable. What can we learn from that change will be studied in Chapter 8, with which the thesis concludes.

122 I would like to point up to the narrative under section 7.1.2.2 called "As a Case Example: a Lovely Building." I have been hesitant to include it, but I decided to, despite its tone sounds different than the rest of the writing. The case it presents, that of a huge lodge built for the NGO associated to an oil company, is a good example of how strong are the socio-environmental implications of building today with palm in that area. Additionally, the case refers to the innocence with which the idea of being environmentally sound is received by public opinion. This anticipates the final discussion in Chapter 8 of the thesis, which is dedicated to urban myths on sustainability.
7.1. Economic Aspects

7.1.1 Longevity (In relation to economic system)

How much the house had to last was implicit to the economic system. Hunting, gathering and swidden agriculture supposes mobility. The deterioration of a Jaihuë’e, consequently, was as a good sign, since it was an indicator that in general the resources around were getting scarce (if there were no palm around for the roof,\textsuperscript{123} then it was very likely that the monkeys, turtles and other food were becoming scarce too).\textsuperscript{124} The mobility made the opportunities to build a new house very common. There was not such a thing as a \textit{dreamhouse for a lifetime}.\textsuperscript{125} The house changed when the economic system changed. The Pa’pa Huë’e expresses an economy of semi-stability, one of a group that still moves, but less often. One in which, for instance, the indigenous do agriculture, but they do not own the plantation. The encomienda, mit’a and gift economic systems limit both their natural mobility and their complete stability. The Secoya are forced to settle, but they can be moved at any time by their patron to a different productive site at any time, according to the necessity.\textsuperscript{126} The Pa’pa Huë’e serves that system by its capacity to being semi-permanent: quicker to build that the Tui’que Huë’e, and durable enough, thanks to the double pole, for a longer period of time with less maintenance.

\begin{footnotesize}
\textsuperscript{123} I base on the roof the analysis on durability because roof was the crucial problem. It was, in fact, the efficacy of the roof what set the rules for the type competition among the Secoya. Although structure is crucial, when it comes to wood it is the roof material what sets the duration times for the whole building. The woods the Secoya use in the zinc house are often less resistant than those they used in the Tui’que or in the Pa’pa Huë’ña because good woods are getting scarce. However, the Zinc House lasts more, just because zinc lasts more.

\textsuperscript{124} Added to that, the system of beliefs increased those opportunities of mobility. A good example is how the Secoya idea of death affected architecture. The practice of leaving the house after death because of fears of sorcery stimulated mobility, and it could have been a good ecological device for not overexploiting a site. As for building, this represented permanent opportunities to change types in the movement from one place to another; definitely, this was a powerful factor in the change of building types.

\textsuperscript{125} The system favored mobility in such a way that it is in this time that hard woods like Yaripa and other efficient materials like Guadua are found preferable to make weapons rather than buildings.

\textsuperscript{126} Or they can escape, in which case the Pa’pa Huë’e also serves well. It happens with a previous preparation: the indigenous secretly take time out of the obliged plantation to cultivate their own in a hidden spot, building a tambo (it cannot be a big Jaihuë’e because there is not enough time for that). The house, hence, has to be small, easy and quick to frame. They have to do it quickly and it cannot consume lots of energy in the building because for sure they will need to abandon and look for other place whenever their persecutors get close. However, it has to last enough. The house they have seen and helped to implement in the mission serves perfectly both purposes. When their hidden plantation is ready to produce, they finally escape.
\end{footnotesize}
In the case of the Zinc House, working for a wage or starting up a business demands (and sometimes even offers) some stability. The Secoya need not to move anymore, and durability in housing becomes a priority. Zinc efficiently supports the new necessity because it can last for nearly a lifetime.

7.1.2. Costs

7.1.2.1. Environmental Cost

As seen in Chapter 2, more than 11,000 palm fronds are necessary to roof an average size Tui’que Huë’e. That is an enormous amount of material, but environmentally this is even more complicated, if we consider that, in the past, in order to get the fronds, customarily the entire palm tree was cut, not just the fronds. Just for instance, the building of a 14 by 20 meters Pa’pa Huë’e that Cescreo made little after getting married implied cutting fifty-five palms only for the roof, plus eighteen more for the floor.127

High environmental cost when using natural materials is not only limited to building. Materials that were used in other aspects of the traditional life also had such added cost: a hammock made with the fibers of Chambira palm, for example, required sixty palm sprouts.128 Some of the most used materials in the past are now barely seen around or cannot be found at all: most varieties of Macuri, the plant used to produce the multi-colored tints to dye the old Secoya tunics,129 plus varieties of Yaje for the shamanic rituals and also the Yachana, tree from which up to the first half of the 20th century the Secoya extracted a fiber to make the tunics; these are among the missing materials.

When the best species of roofing palms became harder to obtain because of consumption, the Secoya builders began using less specialized leaves that lasted even less, so the process of fading from one variety to the following tended to speed up logarithmically. That had a palpable


129 "Azul verde curi había. Pero no hay dice. Dos clases sobrado, ya teniendo ya antigua. Dieciocho se ha perdido... si fuera alguno sabiendo cogiendo manteniendo manteniendo todavía tiene... Dos no más... Alguno teniendo, no cuidando perdiendo. No sembrando..." (Cesáreo 2003).
incidence in the building of Secoya types. The now inexistent Huetara Hué’e could never be built in the area of San Pablo because the specific palm for roofing was not available. The situation became much worst when governments, in order to stimulate colonization recognized clearing of forest land as one of the proofs of ownership and good use prior to claiming legal title. The cleared forest used to hold a good reserve in the indigenous building materials.

However, what concerns to this thesis is not who cut more in the past, but the amounts of new material necessary to continue building the traditional types, and which are definitely not available.

7.1.2.2. Financial Cost: Durability in Relation to Returns

The more durable the house, the more expensive it tends to be. This is more or less the logic in our conventional practice. In the building history of the Secoya it has been different. Since durability depended on mobility, regardless if a Tui’que Hué’e lasted one year and a Zinc House ten, the house lasted all it was necessary to last, depending on the economic system. This means that the durability expectations were always fulfilled and, since the house’s duration was always the maximum, the investment made in the building normally offered a comparative return. In other words, none of the houses was too expensive for its historical time. They were also relatively affordable considering that there was time availability to dedicate the building all the labor it demanded, plus the materials to build it were accessible. However, affordability problems arouse when there were attempts to build house types when their economic context had changed. In 1992, the cost of a community house built in Siehuaya with a Tui’que Hué’e’s roof-like was US$ 10,000. The cost of roofing the same area in zinc would have been US$ 500, at the most.

---

131 The phenomenon of colonization is described in the glossary under colono.
132 In the case of the Zinc house, the materials resulted from the negotiations with the oil company.
133 Gustavo, builder of Siehuaya, personal communication, 1997.
134 Based on the 1999 rural Ecuador estimate cost of 64 Zinc sheets, the necessary amount to roof that area. A 3.60x0.85 m. sheet was US $8 dollars. The useful area of a sheet like that is (3,60-0,14 overlap) x (0,75 usable width) = 2,60 m². Delfi’s Tui’que Hué’e area is 165 m² /2,60=63,6. In conclusion, the area of the Tui’que could be covered with 64 zinc sheets. They cost 64x8=US$ 512. This was the cost in 1999. It should have been much cheaper in the 1992 pre-dollarized Ecuadorian economy.
135 There is also the issue of affordability here. In the year of the US$ 10,000 project, the cost of a single Zinc house was about US$ 125.
Even in a very conservative estimate, the relationship between the cost of the materials between a zinc and palm roof today, when there are plenty of palms, can be 1:7.5.\textsuperscript{136} Despite the logic that the house always lasted what it was needed because of its relationship with mobility, today the house that lasts the shortest (Tui'que Huë'e) is the most expensive. This is probably the reason why most, if not all, of the \textit{traditional} Jaihuë'e and modern palm-roofed buildings that were built since the early 1990s in the Secoya settlements were financed by outside organizations. Their exuberant costs would have made it virtually impossible for the community to continue running the traditional constructions on their own. Tradition, under these parameters, becomes a commodity that only wealthy outsiders can afford.

As a Case Example: a Lovely Building

Former Alberta Energy Company NGO's Amazon headquarters are with no doubt spectacular.\textsuperscript{137} This is a huge complex of buildings made with concrete walls with wood floors, and the Pa'pa Huë'e roofs, supported by structures of enormous poles. It has fresh water, clean, beautiful western toilets, electricity, cell phone access and satellite TV. It was completed in 2001 and could probably house the biggest existing palm roof made in traditional techniques in all of Ecuador, at the very least.

---

\textsuperscript{136} A 50-m\textsuperscript{2} construction requires 3,000 palm fronds and costs US$ 400 (Klinger 2002). The same construction could be covered with some 20 Zinc sheets, which at 8 dollars make a total of US$ 160, hence the cost relationship is (160/400=1:2,5). However, considering that the palm roof can last 5 years and the Zinc at least 15, the relationship 1:2,5 triplicates to 1:7,5.

\textsuperscript{137} The company is now called EnCana. The NGO's name, Ñan Paz Foundation, is a mixed Quichua and Spanish that translates "path to peace."

Part Four - Understanding the Change Between Landmarks
The immediate question for a curious mind is how could the Foundation build such an impressive complex that used so much palm, vines, woods, in a moment in which right at the other side of the Aguarico River the indigenous that created that technology complained that they could not build it anymore, because of the lack of materials.

Transportation was the key. Alberta's own building company was able to move the material in trucks through roads that in some cases the oil company itself had helped to lie. They knew where the material was, among other reasons because of their having helicopters for the exploration of oil. For the indigenous it would have never been possible to tackle such large-scale exploration of the vanishing building resources over a vast area of territory, then collect them from so many different spots, and transport them in unaffordable trucks by hire, and finally ending the journey by canoe.

The Ñan Paz complex is often praised for its environmental sensitivity. It is said that it was built only using previously cut and abandoned material that was found in the forest.

It is clear that the parquet for the stairs of the main building is very heterogeneous. As for the rest of the material, it is good that they were so extremely lucky in finding dozens of poles the same size and diameter that had been previously cut and abandoned by nobody knows who and why. Also, to find hundreds of meters of vines, especially considering that they naturally fall only if they start decomposing, in which case they are not useful to build anymore. Furthermore, they were lucky enough as to find a few hundred thousands of already cut palm leaves, still usable, if when these leaves fall they are so dry and breakable that even a small cottage would be impossible to roof, because they basically break as soon as they are raised to be carried.

The luck that allowed the environmental friendliness in the Ñan Paz complex was such that it was almost a miracle, and we should thank God for that. As for the indigenous, let us just say that luck really exists, only that it sometimes seems to be in the wrong side. God bless the eco-innocents.

7.1.2.3. Time

Time was clearly one of the main investments to be made in the construction of both the Tui'que and the Pa'pa Huë' ña. A great deal of time had to be invested in collecting the material through a distant, muddy, uneven land, full of roots, branches, trees, streams, lakes and rivers. Then there came a slow and detailed process of weaving each of the palm fronds to the roof structure.

Not only building was time demanding. The making of one single Macurí hammock usually took a weaver an entire year (Cesáreo 2003).\footnote{Today, only one old Secoya takes the time to do such patience demanding and almost endless job.} Time, that used to be abundant, does not exist in an era in which also for the Secoya it has became synonymous with money. Changed working
conditions—many of them being employed by the hour or running their own business—require spending as little attention as possible on building a house. There is no more time to spend in complicated roof carpentry and weaving.

There is, of course, also a time investment when getting the zinc. Traveling to the nearest urban center and bringing it to the settlement can take at least two days. However, this is a much shorter time span. As for the installation, it is extraordinarily less demanding, being done in as little as half of a day. There is no comparison between this and the time required for the careful process of roofing the palm houses.\footnote{139}{The fact that the Pa'pa Huë’e had a smaller area and required less work in joints due to the double poles made it considerably more time-efficient than the Tui’que Huë’e. This could have been determinant in many of them still being possible to be built until recently. The necessity for more efficiency, however, led the Secoya towards the Zinc house.}

7.1.3. Goodwill

Although the irruption of Western culture is not the only reason why the Secoya changed, it is definitely the reason why they changed the way they did. In this specific way, they were constantly pressed to disconnect from their life style, rather than to become more affectionate to it. Their culture and accomplishments were underestimated in many different ways. They were successively vilified, patronized and finally mystified.

For centuries and until not a long ago, the Secoya were part of an abstract ethnic category to which most of the Upper Amazonian groups were made belong to, that of the Aucas, a pejorative term derived from the Quechua Áukka ("enemy, fighter" [Lira 1944]) with which the Incas referred to Amazonian cultures, and degraded by Blancos to "savage, brutish." The basis for changing the connotation of the term resided on at least four Amazonians’ features that were exaggeratedly highlighted: their gusto for war, their cannibalism, their nakedness and their obstinacy. It is not necessary a deep knowledge of the history and environment of Amazonia to have a feeling that such clear-cut categorization must be surely a stereotype. However, research assists common sense in revealing particulars of that stereotype. In thinking about the warfare, some researchers start to wonder if that was not their natural willingness but their response to the aggressive influence from missionaries, militaries, colonos, and even anthropologists and journalists (Golob, 1982; Tierney, 2000).\footnote{140}{And probably from Incan pre-Columbian campaigns, too} For other part, researchers have also discussed if cannibalism was actually the common norm in the Amazon. The answer seems to be that, whereas there were some ritual cases of cannibalism, they exceptional and occasional ones were over-advertised. As for the nakedness, hot weather and humidity have historically forced not only Amazonians but everybody else living there to wear as little clothes as they can, and that is testified from the accounts of the first Spanish conquistadors. Finally, obstinacy was nothing more than their struggle to keep their autonomous hierarchy, beliefs, economy and, of course, housing systems. Warfare, cannibalism, nakedness and obstinacy, the four stereotypical
features of the Aucas, qualified them, by Western standards, as beings that lived in a pre-human state. As such, they were catalogued and treated even since the 17th century, when missionaries asked to take care of them, until the 1970s, when oil corporation workers had to endure their spears. Then, suddenly, there was a change in the minds of the standard-setters, and something called cultural relativism became popular in the Upper Amazon. The new standard called for a correction of the mistake and the conceptual upgrading of those pre-humans. It considered to passionately demand from them to keep their despised traditions, and it definitely did not seem to consider that a logical response to such exotic petition could have been "nobody wants to go back and be a pre-human again."

A less aggressive form of discrimination than that based on questioning their humanness, but still discrimination, followed the Auca approach. It was a patronizing one that questioned their social well being. Spread by a new wave of religious, those of the Summer Institute of Linguistics (SIL) and still centered in the Western perspective of world, it took advantage of how relative the idea of wealth is when one moves from one system of values to other. The Secoya and other Amazonians did not need a house that lasted in their environment, plus they went barefooted and wore few clothes for the hot weather. Moreover, they had no private property other than a few hand-made tools and weapons. They use their bare belongings to procure their food by moving around a vast, "intangible," mental area they considered their territory, despite the lack of boundaries anyone else could acknowledge. Finally, they got whatever they needed from that territory without having to pay for it. At the other side of the mirror, those were values that defined plain poverty, an extreme one: they were living almost totally naked, in shacks. They had no cars or other vehicles, so they had to walk. They had no land nor important properties, and no cash. Objectively, they had nothing. They needed to learn progress and SIL was there to teach them.

This, however, was not the end of Amazonians trouble with Western definitions. Going from discriminated against to patronized, and in that process remaining equally undervalued, they still had to go under a third phase. It was an academy-coined one that would then be adopted by post 1960s culture. In that phase, they appeared as definitely humans, they were not poor at all since their traditions were important, but they had changed very little over the centuries, remaining in a pre-Neolithic condition. Furthermore, they should not change, because it was their sort-of-duty that of wearing a straitjacket called "tradition," basically in order to please Western perceptions.

---

141 The idea of the proto-humanity of the Aucas was the starting point for the whole Mission institution in the Upper Amazon. The Mission considered them Gentiles, those beings that, according to the oldest Christian tradition, and because of their fondness for idols, blood, things strangled, and fornication (Herbermann et al 1910, 8:537-38) were said by God not to be human: "Now, you are My sheep, the sheep of My pasture, you are Man. You are called Man and gentiles are not called Man." (Ezek. 34:31 OT). The motto of the Mission, hence, became "to make them first humans and then Christians," which meant treating them very roughly and just after they had been tamed display mercy and good Christian values.

142 It is the one this thesis is precisely responding to.
7.1.3.1. Zinc as the Paradigm

The Secoya have gone from a state of legitimization to another, and the process has not happened behind their backs. Everyone who entered in contact with them let them know about the most current judgment, first "you are not human," then "you have nothing," and, finally, "you do not change." At the end, they found that in an interaction in which the West found so crucial to define them in order to be able to deal with them, perhaps it would a better idea to stop creating definition problems to the West and become just like Westerners.

The image of probably the only Western-like house that was in their possibilities was that of the Zinc House. The house, in actuality, offered more than a feasibility to be locally implemented. It provided a sensation of dignity derived from the curious way the Secoya always confronted it. It was curious because, despite that for many educated outsiders zinc is one of the materials most typically related to poverty in the Third World, when the Secoya were faced to it, it was always used by people who were in a privileged position. For them, rather than poverty, zinc meant power.

Their interactions with zinc as a symbol of power had started in the early 1900s when seeing the industry's manager houses and storage rooms that began to be built in the Upper Amazon. Afterwards, in the 1960s, SIL, that pioneered the use of relatively high technology transportation and communication systems to do work with the Secoya, tacitly endorsed the material when having the Pastor's house in Cuyabeno roofed in zinc. Then, in the early 1970s, the colonos, who made the most widespread use of the material, unintentionally sold it as a label attached to living as a city-wise and super-empowered person.

Fig. 7.2. The old and the new paradigms.

143 Its former relationship with storage rooms could explain why the Zinc house is normally conceived as so sealed.
Coming from cities (even though the poorest areas of cities) they often behave as if having rights of administration by default over the Secoya assets. They trespassed their properties, cut their trees, and defied them. The colonos' set themselves in such position of superiority-by-default under the basis of the aggressiveness which tends to be common to the urban experience, but also based on their considering themselves ethnically superior to the indigenous, and, finally, based on their own desperation, because after all they were in worst conditions than the Secoya, being in a forest its ownership was not totally granted and, even worse, with which they were not familiar with.

Zinc, in consequence, appeared to be all about power. Customarily, people who managed to set themselves in an advantageous position, no matters how advantageous, in front of the Secoya had a house in zinc, from wealthy industrials to economically O.K. pastors to much poorer colonos.

After the Secoya obtained zinc from the negotiation with the oil corporation, unexpectedly and unintentionally they came to form part of a sort of elite between indigenous communities. Zinc began marking a difference between wealthy and poor indigenous groups or individuals. After zinc, there would be those Indigenous who could afford paying for zinc and those who could not. The latter would need to continue walking the forest in search for more and more scarce and less and less efficient, fast rotting palm leafs. Palm would, consequently, become

---

144 That situation was always the origin of strong tensions between Secoyas and colonos, situations that still subsist, as it is testified by the following narrative by Cesáreo:

"Aquí aquí arriba estaban mi madera sacando ellos. Y mi poste, yo corriendo voy a ver corriendo. Ahí está la canoa... El Laurel, un árbol grande el Laurel, han cortado pelando.
- Cuántos palos tiene usted yo voy a comprar, dice,
- No me diga usted, usted no más viniendo muriendo.
Bueno, ahí, tocando bravio, yo también yo bravio gritando yo también gritando. Ahí viran mi gente, viniendo..." (Cesáreo 2003).
synonymous to poverty in the indigenous context. However, since zinc was in reality not completely unaffordable, it would become a possibility, a seduction, and a trend. In other words, it would become a paradigm.

Zinc came to the Secoya in the context of an indigenous culture that had been—and the slang fits perfectly here—"spammed" for four centuries or more with the idea that in order to have a successful relationship with outsiders, they needed to be legitimated by them. Zinc was normally used by some of those outsiders who set themselves in situations of power in relation to the Secoya. That could have been the reason why it ended being a symbol of that power. When the Secoya finally had access to the material, palm automatically went on to symbolize the opposite, being poor and powerless, for those individuals and communities that could not have access to zinc. However, since zinc was not totally unaffordable, it would become a hope, a paradigm for everyone.

7.2. Building Aspects

7.2.1 Language of the Material

Building materials have an implicit ideology that makes them reflect and maintain a cultural affiliation with the context they come from. This played a definitive role in the building history of the Secoya. When change happened, there was a statement related to what the buildings said in terms of their cultural ascription.

Contradictorily, at the other side of the spectrum it happens the opposite phenomenon: only the wealthiest people from cities can afford palm, so palm becomes a synonymous of opulence and cultural sophistication among them.

To have an idea of what its cost represents, by 1999, when the cost of one 3.60 Zinc sheet was US$ 8, the daily wage for a specialized builder was US$ 4, and US$ 3 to 3.50 for a non-specialized one.

New paradigms are appearing, however. It is because of another group of people they have also constantly faced in situations of power, that of eco-tourists, journalists, environmentalists, researchers, etc, that the Secoya are aware of tents. Tents were made in canvas before plastic made its appearance, and Amazonians have been in contact with them since the second half of the nineteenth century as we can see in Simson’s narrative. However, probably just know they can have access to a material with which they can form tent-like structures, plastic that is easy to get in the nearby towns. Plastic could even be more convenient than zinc and, while it does not last that long, it is cheaper, lighter and even easier to fold, which makes it easier to carry. So far, plastic structures following the logic of tents are used like a reconceptualized tambo, a big plastic laid out for a temporary staying. If this process were consolidated, an interesting ethnographic cycle would be closed, since tents were precisely implemented in the 19th century following the model of an indigenous temporary building structure, the tee pee of North-American prairie indigenous. It would become a very interesting knowledge exchange between cultures not usually in contact and through a completely different one, after almost two centuries of having taken the knowledge from one place and unintentionally depositing it in another.
The mission declaredly aimed to change the Tui'que Huë'e, as a way to help erase the memory of the Secoya on its use. Tearing down the architectural landmark to help forgetting was, after all, a logic that had worked quite well with Andean and other indigenous temples. The Jaihuë'e model was intended to be substituted by one recalling the Spanish house. That was the expectable complement for an urban plan that followed the Spanish grid by mandate of Viceroy De Toledo and others (Málaga Medina 1993, 291). However, although the mandates described in general terms how the organization of the spaces in the main buildings should be, they did not detail much about how the buildings themselves had to look. The few times, for instance, De Toledo made indications, he suggested following Spanish or European models, but only if that was possible. It was not possible in the Upper Amazon, because of the lack of stone or clay. This explains how the essential layout of the Spanish town was observed in the missions, but the house, the Pa'pa Huë'e, looked pretty different than Spanish houses. Lack of materials and freedom to choose the type explain why, in their campaign of Europeanization, the missionaries ended by promoting and spreading a house that, despite not being Spanish nor indigenous, looked definitely more indigenous than Spanish. This was, however, more an eventuality, a "Plan B," because the Pa'pa Huë'e was not supposed to occur. Had there been the materials to make a different house, surely Upper Amazonian settlements would look today different. They would probably look like the colonial villages of the Andes. There, Spanish had been able to find building materials that were more like those they wanted.

There was not, however, any political or cultural bias to force the change from the Pa'pa Huë'e to the Zinc House. However, the Secoya made the change. When I asked back in 1997 why not make the same Pa'pa Huë'e but in Zinc, they invariably said it would not be a Pa'pa Huë'e anymore. The Pa'pa Huë'e was one entity. The Zinc House was a completely different one. It was as if the Secoya house types had unmistakably been allocated different slots in the building convention of the Secoya. The Tui'que Huë'e was the traditional house, the Pa'pa Huë'e was the Quichua one, and the Zinc House was the colonist's. No mixes were possible, despite the fact that all of them were now their cultural assets, their houses.

---

148 Since the materials of the destroyed temples were used to build the Catholic churches, why not just use the old temples to perform Christian rituals? Because what they represented would have made very hard for the Christianized indigenous forget and get rid of their original worship.

149 Furthermore, legal provisions demanded indigenous houses be pulled down as soon as the indigenous were moved to the missions, in order to prevent their return to the old homes and stances, and also to press them to finish very soon the new house building inside of the mission. Some of those provisions were among De Toledo's Disposiciones. (Francisco de Toledo [1575] 1989, 1:246-7, 1:466).

150 See De Toledo's indications for the model of a church ([1575] 1989, 1:220) and a warehouse (1:249).
That the Pa'pa Huë'e and the Zinc House belonged to two different worlds was traceable even in the very same building practice. The same builder that made careful and organic double-poled palm structures was able to make a totally schematic and rational and fragmented structure for a Zinc House right away. It was as if builders had the capacity to shift from one brain hemisphere to the other in their building praxis. Both resulting buildings yielded no relation or similarity. It was not possible to find a "trace of style" relating them. The builders did that voluntarily and with a perfect awareness. It was like they spoke two different languages. Why? Probably they were, purposely or not, making a statement with that differentiation.

7.2.1.1. Different Slope to Purposely Express Difference?

Roof slope was perhaps the main factor in making such critical aspect difference between the Zinc House and the traditional types. In other words, it was the slope, more than the material, what made the Zinc House look so non-indigenous. It had to happen, if we consider its 27 percent (15 degrees) slope in comparison to the 100 percent (45 degrees) one in the Tui'que and the Pa'pa Huë' ña.

It is a fact that zinc allows a freedom in choosing the slope angle. The palm roof does not. However, if there existed that freedom, why did the Secoya builders stick to using the material in its very minimum working angle? That sounds bizarre since the flatter the roof, the less alike would the house look indigenous. Perhaps that was precisely the reason.

Fig. 7.3. The slope factor.
In the past, it was physically impossible to build any single traditional house with a low-pitched roof. Water would have filtered throughout the natural separations of the frond leaves. High pitches, because of this reason, were so obligatory that they became like a morpheme in the language of indigenous architecture, that is, a strongly and unavoidably characterizing element. Zinc allowed the opportunity to get rid of that limitation. With zinc, the slope could be minimum. It was clear that zinc meant non-indigenous.\footnote{151}

A low-pitched roof could appear for outsiders as precarious and not graceful at all, more so when it is compared to the elegant thatched roofs. However, in the indigenous context the low pitch could have been taken as a modern sophistication, a luxury they now had access to, something they really wanted to experience. The luxury of the low pitches would make them have a break from the past. It would make them modern.

7.2.2. Technical Specialization

That everybody had to know the building norms and not only the shaman was required in order to respond to the increasing necessity of housing, in a community that was splitting in individual families, while at the same time it was growing. When other aspects of the Secoya life such as their economy changed, their demand for housing increased. Many individual houses would substitute one single communitarian one, so rather than building one single structure every five years to house an entire community, new structures for every family were required all the time. The future of the Tui’que Huë’e was compromised after that change because building it demanded such a specialized knowledge. Customarily, there was only one super-specialized builder who knew not only the conventional basics about building but also the arcane knowledge of where to install the poles, how to orient the house and what rituals to perform. This knowledge was not available for everyone who needed to build.

Despite the fact that many learned how to build the much less specialized Pa’pa Huë’e, making a Pa’pa Huë’e in zinc, in order to conserve its structural and ambiental advantages, demanded a skill that was still not known. It was how to cut zinc sheets in diagonals to form the trapezoidal sides and triangular ends of the Pa’pa Huë’e’s roof. Only manipulating the zinc they received from the corporation with no modifications at all to the laminae caused many accidental cuts and injuries to the many builders that had no previous experience with the material. Being a simple installation complicated enough at that point, the option of a Pa’pa Huë’e with zinc was hardly considered.

Once the initial difficulties were overcome, building with zinc became easy, fast, even pleasurable. Since it offered immediate results while not demanding any specialized knowledge, it became the preferred one.

\footnote{151 Additionally, the textures of the roofs also diametrically differ. The thatch is textured and opaque per se. Zinc is smooth and shiny.}
7.2.3. Rigidity in Structures: The Difficulty to Change that Led to a Deeper Change

The fact that the structure of the traditional types was so intricate was one of the main facilitators of the change. The main challenge to continue using the Tui'que and the Pa'pa Huē' ūna in a settled culture was how to expand the houses given the rigid nature of their structures. In fact, in order to add space it was necessary to basically dismantle them structurally. It is because of this reason that the Secoya housing unavoidably started to change to a small urban complex made first of Pa'pa Huē'e ūna around a Tui'que Huē'e, then Pa'pa Huē' ūna around themselves, then Zinc Houses around them, and finally only Zinc Houses.

Could it have been possible to continue using the Tui'que or the Pa'pa Huē' ūna in spite of the change in the economic systems and in general the culture? In the times of the Tui'que Huē'e, when the extended family group grew, a portion of it would move far away, build a new Jaihuē'e, and become a new independent group. In a settled culture, how could the house be expanded when the family grew, considering that they needed not to move away anymore, since under agriculture there was no more competition over what the nature produced? Would it have been possible just to add new individual spaces inside the houses? Probably not.

Fig. 7.4. The degree of complexity to make additions to the traditional type in relation to the modern one.

---

152 Not only physically, speaking in terms of construction but also in terms of the use of space.
One of the main problems to continue using the same structures was related to the structural features of these types. The structure in both cases actually confined and imposed a fixed use of the space, one that forced division across the center in the Tui'que Huë'e and one that forced small families and individualization in the Pa'pa Huë'e. If the Secoya wanted to add a new space in both cases, they were forced to change the whole structure. Being both structures so intricate especially in the roof, in order to make any addition it was necessary to dismantle at least half of them before adding the extension, and then adding again what had just been removed.

Having to destroy half of the structure to make an addition and then build that half again meant, in terms of effort, basically the same as building a new house, whereas not having the benefits of owning a second one. Being equivalent, they just opted to make the new house, leaving the original Tui'que Huë'e untouched. The new house, however, was smaller because moving out of the Jaihuë'e in the new phase of their economy happened individual-by-individual, and not as whole portions of the extended family all at once. This is how mini-housing structures, the Pa'pa Huë' ŋa, started appearing around the big one, the Tui'que Huë'e. When each family inside of one of the Pa'pa Huë' ŋa grew, they repeated the process, building new Pa'pa Huë' ŋa around the original one. That explains the appearing of packs of Pa'pa Huë' houses around a big communitarian Jaihuë'e.

Had they not moved by force from Peru to Ecuador in the 1940s and their house evolution disrupted, there would have probably existed a moment in which the oldest people living in the big house would have passed away or moved to live in an individual Pa'pa Huë'e with their direct siblings. The structure, thus, would have become an empty structure, operating for a while as a symbolic entity, or re-cycled as a meetinghouse or a guesthouse, before finally falling down.

A key moment in the evolution of the Pa'pa Huë'e packs happened when the new structures around the Pa'pa "root" house began to be made of zinc. The new added Zinc Houses began to outnumber the Pa'pa Huë' ŋa, which in turn started falling out at the end of their structural cycle.

---

153 That could explain the existence of an (also vanishing) Upper Amazonian typology, the Jíbaro (Achuar) house, one of whose ends is polygonal like in the Tui'que Huë'e, and the other one is flat. That model would easily accept additions just by making it longer.

154 By the end of the 1990s, most of those structures were made of Zinc. One Pa'pa Huë'e with a few Zinc Houses around was a very typical image by then. In part, since the palm roof spoils relatively quickly, opportunities for change happened basically every day, and that, summed to the money from the oil exploration permit, is the reason why soon after the Secoya villages were mainly built in Zinc.
In the case of the Zinc House it was not necessary to build a new structure when more space was needed.\textsuperscript{155} If adding new walls inside was not enough, it was easier to make the house longer by simply continuing the structure. The packs started to disappear and single Zinc Houses tended to follow their longitudinal direction, getting close to each other. When the empties between them got close to being filled, the form of the Western town based on streets was finally outlined.

One of the main instigators of the change was the difficulty to make changes in the structure of the Tui'que and the Pa'pa Huê'ña, in order to make these houses expandable for new space necessities. However, the structural rigidity made adaptation impossible and it actually led the process of house change, from one single house to house packs to a line of houses.

![Diagram](image)

Fig. 7.5. Tentative phases in the process of change from the Tui'que Huê'e to the village.

\textsuperscript{155} Neither they could afford to build a new house added to the existent one every time a change happened in the family number.
7.2.4. Adaptability and Functionalism

The strong external pressures to make the Secoya change found them naturally predisposed. Probably because of environmental reasons, they already knew how to make the most of imposed situations.

In 1969, Tobias Schneebaum, an American adventurer who became famous for his modern deeds among cannibals, published the story of his first contact with the Harakmbut, a southeast Peruvian Amazon group he had been living—and eating—with. (Schneebaum 1988). Thrilled by the oddness they were confronting, the naked Harakmbut anxiously began undressing Schneebaum. In the rush, the explorer’s matchbox accidentally opened, spreading matches all over. Curious about the new finding, the warriors raised some of them and, delighted, proceeded to take the piercing Chonta palm sticks off their noses, inserting in their place the just-discovered, industrially-assembled matchsticks (67-68).

Schneebaum’s narrative makes an interesting metaphor of how fast cultural change can happen in an uncontacted group, but it also exemplifies an element commonly overlooked in the Western mythological constructions of the unchanging, noble savage. It is, in fact, readiness to change, justified probably in a mix between environmental factors and how overwhelmed they were by the outsiders who contacted them. I will speak a bit about each of those two factors:

7.2.4.1. Environment Demands Fast Change

Environment transforms noticeably fast in the rainforest. Day after day, the rainforest naturally produces tons of organic material, in the form of fallen leaves, vines, branches, old trees, etc. However, this is not material that stays in place for a long time. It is a perishable, wet material that soon after is produced, begins to be re-absorbed by the very same species that generated it, becoming their main source of energy in the forest’s understory. The process happens so

156 Schneebaum began his journey in 1955 at Pilcopata, in the right slopes of the Andes. Following some vague instructions he had received, he took the left margin of the Madre de Dios River until reaching the mission of Shintuya. There, he stayed until the moment he heard about the Harakmbut, at that time known as Amarakaeri, the name of their territory (which is the name they are more commonly found by in anthropological literature). The now missionized Harakmbut are settled in the village of San José de Karinne, in the periphery of the Manú National Park.

157 It is because of this reason that trees in the rainforest do not lay their roots deep into the soil but extend them superficially, making the most of this fallen material. It is also because of this process of absorption that the organic layer in the rainforest does not grow, going hardly beyond 4 inches, and being only one inch or less in large areas. Underneath this bare layer, there is a totally unproductive, for agriculture purposes, thick layer of red or yellow soil. This is the reason why clearing the rainforest to do agriculture soon becomes a frustrating activity. It is understandable how settlers make a connection between such an exuberant forest and a very fertile land, but the reality is that the forest produces most of the nutrients for itself. Once the forest is gone, the soil has nothing for planting, and in order to make it productive it is necessary to create a hand-made organic layer that demands a lot of constant work,
fast and at such a vast scale as to make huge portions of landscape appear transformed within weeks. That includes the cultural landscape. The change soon hides, for example, paths that were not long before journeyed through or houses that were formerly easier to see at a certain distance.

Flooding in the Amazon adds another element that is a major contributor to the environment change. The natural floods of the river and some of its tributaries make huge lakes out of the forest for several months in a year, and that happens for example in the Cuyabeno, the Secoya area of occupation before they moved to their present site by the Aguarico River. Floods may have been affecting cultural change for a long time. In one of the earliest accounts on the use of platforms for housing in the Amazon (De La Cruz ([1653?] 1999, 352-355), back in the 17th century Omagua indigenous had to learn about change the hard way. Apparently they had just settled in a new area, that of Caraute (near to what today is Leticia in the Colombian Amazon).

They had crops planted when suddenly the river flooded and their crops were lost. In order to survive to a three-month flood they had to implement a detachable platform affixed to the poles of their houses, and use boats to fish and catch coconuts and other fruits. The fast adaptation of their house (which could have been one of the sources of the origin of the Pa'pa Huë'e) was merely motivated by an environmental necessity, and this makes a good example of how sudden environment changes force a fast response.

The rainforest is all about change. Whoever wants to survive to it has to go at its same pace. The fact that Amazonians groups learned over the centuries to adapt to a changing environment probably had them well prepared when having to manage Western impositions.

7.2.4.2. Human, Cultural Reasons that Pressed the Change

Western culture often approached its Amazonian counterpart in a significantly vicious way, either innocently (through innocently spreading diseases) or on purpose, under the assumptions of a moral superiority that made it their duty to transform Amazonians in different human beings. It was in general terms the same case during the Catholic Missionization of the seventeenth century as during the interaction with the part religious, part scientific SIL three centuries later.
Imposition that came from these big institutions was also a determinant in making the Secoya change quite quickly. Institutions had the capacity, funds, and organizational support; they were linked to the State in their own moment; in one word, they had the power to impact change in a short period of time. Consequently, they were able to make the Secoya re-define their use of space, both exterior and interior. In terms of exterior space, both of the civilization campaigners re-located them according to accessibility criteria, the Catholic missionaries looking for the rivers, the SIL for the feasibility to build airstrips. As for the interior space, both clearly defined architectural types and materials, the mission being crucial in implementing the Pa'pa Huë'e, and the SIL providing a clue for the new technology by using zinc for their own infrastructure.

However, both institutions faced the moral dilemma of forcing change without forcing people. To that, the Catholic mission responded by trying to negotiate, but ended by imposing it by stimulating religious fear. SIL's Christian mission negotiated and ended by persuading them by their use of economic, political and even technological power.

After trying to fight the impositions and finding they could not, the Secoya went from one stage to another of adaptation going from taking their aggressors' strategies as their own when using fear in their ambushes to Colonial missions or negotiating in the second half of the twentieth century, but in any case they ended by being displaced from their territory and finally changing their living ways. Once the Secoya culture had considerably changed, it was a fact that the types that the institutions promoted were quite efficient for the new created necessities. In fact, each model was simpler, faster and required less specialization to build than the previous one. Those were determinant criteria by then.

\[160\] In order to convince the Secoya to move from the Cuyabeno to the Aguarico, SIL missionaries gave a free airplane ride to the Secoya's more influential figures so they could verify the land was good. Although the Secoyas wanted to settle in another place, SIL pressed the decision under the consideration that the flying time to get to the present site was much shorter (Payaguaje 1994, 190-91).
In conclusion, although the decision to change was pressed, the change was consolidated on the basis that each new type was more convenient. There was not a moral issue in that decision. It did not matter how the typology came, they decided to keep it because it worked for the changed culture. Function, rather than tradition, seemed to be the main point in question in that moment.

7.2.4.3. Function as Opposed to Tradition?

Functionalism in traditional cultures is a concept that does not fit so well in Western stereotypes. However, had they not adapted, they would not have been able to survive in such a harsh environment, with such harsh pressures from the outside world. Only good spirits or evocation would not have been enough to overcome those external demands.

Is it, therefore, possible to think about function as the indigenous response to the Western delusion of tradition? Is it possible that predilections are based on functional features more often than we think, and that in that logic there would be no hesitation in adopting new technologies, models, examples, if they offer advantages over the traditional solutions?

Probably it is not too crazy to think so, if we keep in mind that only after the late nineteenth century our culture began opposing the idea of function to that of tradition. Many traditional cultures such as the Secoya do not seem to counterpose them and even the so-symbolic myths have functional value in themselves. 

Figs. 7.6a and 7.6b. Cesáreo’s indigenized crown.

---

105 The eclecticism in the Secoya architectural panorama today, with many types coexisting, can be partly explained by this.

106 Levi-Strauss could probably be read as all about proving this assertion.
Interestingly enough, far from functionality having meant the total destruction of the indigenous culture, it could actually have been just what has guaranteed its continuity in the middle of such strong outside influences. In the metaphoric story of Schneebaum, the Harakmbut got rid of the Chonta sticks, but that did not mean getting rid of the custom of nose piercing. They adapted some matches that, from that moment on, would not be matches anymore, but indigenized nose sticks.

Remarkable displays of indigenization were until not long ago quite common also amongst the Secoya. They had implemented headbands made of colored plastic bags and plastic tiaras. Also, wristbands made of plastic beads, and head ornaments (they call "crowns") shaped out of such as sateen ribbon, enamel paint and a gas filter (Figs. 7.6a, 7.6b).

7.2.4.4. The Newest Functional Options

a. Indigenizing the Zinc

What are the functional reasons that made the Secoya so fond of zinc? It is light, its installation is easy and it lasts. Plus it glitters. However, as they know, zinc may create as many problems at it solves.¹⁶⁴

---

¹⁶³ These were first brought by the end of the 19th century to be sold to the Amazonian indigenous. They were manufactured in France.

¹⁶⁴ These include health and comfort problems (at the interior of unventilated houses because of the high temperature it can accumulate and at the exterior of new ones because it dazzles passersby whenever sun projects light on it). Also, its installation implies risks that traditional types did not bring (it cuts as a knife and it is a big electric transmitter, so it cannot be accidentally in contact with non insulated cables). Additionally, it confronts people with dependency problems (after all, Zinc cannot naturally grow in a backyard as a palm does), economic problems (it is relatively expensive) and serious cultural and social problems (there is a clear cultural differentiation with traditional palm roofs, and a social differentiation between those indigenous who can afford buying the Zinc, and those who cannot).
By far, the biggest functional challenge for building with zinc is the heat that a metallic roof generates in an environment in which a normal day temperature averages 85°F (28°C) and humidity 80%, all year around. Since at the beginning of their using this material (by the 1970s) Secoya spent most of the day outside of their houses, the problem could not have been considered as critical. When the culture became more private, the time of staying inside the home increased. In order to cope with the high temperatures, two-story structures with no walls in the second floor were attempted, but the trend stopped when social problems increased. Secoya were forced to go back and stay enclosed. Recently, new roof models for two-story enclosed houses are attempted. These are models that section the roof, allowing vent to let off the heat. This ongoing evolution around the design of the Zinc House is a good sign that zinc is going through its own process of indigenization amongst the Secoya.

b. Reengineering the Tradition

It is a matter of fact that the perfect Secoya housing type today should be somewhere in the margin between tradition and industry. It should offer the best of each option. Zinc laminae that are installed with the slopes of the Tui'que Hué'e, for instance, would make the roof more durable, because it would remain drier and cleaner most of the time. On the other hand, the vertical scale of the traditional types would make zinc high-pitched houses fresher and more illuminated. Furthermore, keeping the double poles of the Pa'pa Hué'e would allow the structural use of Caña Guadúa instead of resistant woods, that are now hard to get and threatened of extinction.
However, functional issues still need to be solved for a proposal of this nature to be acceptable. In current conditions, for example, it would take longer to build a model like that than a Zinc House since it can be more complex, at least minimally. Also, it would probably be more expensive. On the other hand, there is no confidence in the structural properties of a material such as the Caña Guadúa, because no examples exist of its use as building poles in the area. The resistance that this incertitude can generate has to be overcome. Additionally, there would be still an environmental cost, as hard woods for foundation poles or otherwise cement would be needed, due to that Caña Guadúa poles will rot if are put in contact with humidity. Finally, having to purchase material outside the community, even if it is the zinc produced in Ecuador, it will continue creating some dependencies.

c. Reviving the Old Types

It would not be surprising at all if functionalism even brings back the interest of the young Secoya for their traditional types in their most pure form, and they still build a few in the areas of their territory such as Lagartococha, where there are still materials available.

If the logic is that taking what is more convenient for survival makes tradition or culture not so determinant concepts, this logic breaks in the moment in which tradition or culture represent a concrete possibility of survival.
This possibility could be, for example, in the form of a three hundred dollars month wage plus some free tallarin, pasta as a manner of payment for keeping the tradition. It might sound tempting, even if it is only political speculation.¹⁶⁶


Final Remarks

Chapter 7 studied the reasons that triggered the change in the Secoya building. The reasons were both economic and building related. Both were powerful. On the one hand, the change was a consequence of the change in the Secoya economic systems. Depletion of resources connected to the economic change made building with palm an enterprise that carried tremendous environmental, economic and time costs. Tradition, in consequence, became only affordable by wealthy Blancos, and zinc turned into a seductive option because of representing the power of industry while being relatively affordable.

On the other hand, the possibility of using slow pitches became a statement of change in the new Secoya life, in which building could not be a shamanic art anymore. Added to this, the traditional types were structurally impossible to adapt to the increasing demand for new housing. However, it was not hard to adopt the new type, as the Secoya were historically prepared and open for the change.

These reasons were too powerful, too many and too unavoidable as to make the change in the Secoya building completely understandable. The change, given these reasons, was very hard to avoid, hence it does not make sense to lament it. We need to learn from the lessons it offers. The ones I learned will be detailed in Chapter 8, the final chapter of the thesis.
CHAPTER 8
Concluding on the Change: Change in Relation to Sustainability

Initial Remarks

This chapter details the lessons learned from the Secoya case. They point to one crucial topic in architectural theory today, that of sustainability. The Secoya case, in fact, denudes the many popular myths about sustainability in building.

The chapter describes six pop myths. The first one, immutability, relates sustainable to unchangeable. The second one, naturalness, holds that natural materials are by default more sustainable than industrially transformed materials. The third one, productiveness, overlooks the social implications that the concept sustainability involves. The fourth one, holism, imagines 100 percent sustainable solutions. The fifth one, nostalgia, likes to think about sustainability as respect for tradition. Finally, the sixth one, absoluteness, believes that the concept sustainable operates as a standard for every circumstance, when it in actuality depends on location and historical settings. Each of these myths is contested with a counterexample based on Secoya situations studied in the previous chapters.

167 Or urban myths, as related to the parallel Secoya mythical forest beliefs.
8.1. The Urban Myths on Sustainability

The Secoya case confronts us with our own expectations about the perfect ideal for sustainable living in a traditional group. It exposes in some cases the naïveté and simplicity of those expectations, and shows how some of them are merely urban myths. This subchapter is dedicated to explore and respond to some of those myths.

**Myth 1. – Immutability: If indigenous groups such as the Secoya had not changed, they would still be living under absolutely sustainable conditions**

The Secoya teach us that continuing to live in the same houses, with a growing population and dwindling resources, would have been the most unsustainable decision. Choosing zinc definitely reduced the pressure over palms that were straight in the way to extinction. Our aspiration of going back to idyllic stages in which supposedly sustainable ways of life occurred may simply not be feasible or not for a long time; it will not be sustainable. The best-case scenario for the Secoya future is one in which they find innovative alternatives, as they are currently doing.

**Myth 2. – Naturalness: Natural materials, like palm, are per se more sustainable than industrial materials, like zinc**

This myth derives from the simplistic fact that natural materials can be planted at home. However, we have seen how palm thatched houses, which are popularly considered as a paradigm of sustainability, can become a drastically unsustainable material, both at economic and environmental levels. Resources are too scarce today in the Ecuadorian Upper Amazon as to continue building any kind of eco-vegetal houses. Some palm trees take up to three decades to grow, and the demand for leaves for each house is so huge that natural production could never supply the demand. In consequence, in order to sustain enough palm for the growing Secoya population, probably there would appear at some point the necessity to plant huge and unsustainable monocultures of palm.

Industrially produced materials, zinc included, could be in some situations more sustainable, or at less pose a minor environmental impact, than natural materials such as palm.\(^{168}\) One single average-size, zinc-roofed house saves in roofing material an amount equivalent to at least thirty palms.\(^{169,170}\) These are palms that, by the way, are today more important for stabilizing the

\(^{168}\) The scope of the thesis did not allow field experimentation to counterproof this assertion. Because of this, I just want highlight it as an important point that is, however, based only on the general impression I have based on the Secoya experience plus some very rough numbers. It is necessary, because of this, to do more scientifically oriented research that considers environmental impact versus productivity of the two materials and confirms or discards my assertion.

\(^{169}\) The leaves from one palm cover approximately 5 square meters (280 m\(^2\)/55 palms, according to Cesáreo’s estimate) and last, optimistically, one third of what a Zinc sheet lasts. A 48 square meter house
threatened Upper Amazonian ecosystems than for roofing a house. Additionally, there are now local producers of metallic roofs in Ecuador. The material is not imported anymore, so there is less dependency on external markets, plus it is widely distributed and relatively cheap.

That something built with organic materials will always be more sustainable than what is built with industrial ones is a mere appearance.

Myth 3. – Productiveness: Sustainability is all about performance and resource saving.

Reducing sustainability to a mere problem of performance may also be a mistake. We do not go too far by just proposing environmentally efficient solutions that are not socially inclusive.

If "green" solutions are efficient, energetically, environmentally, economically, but do not propose anything to change the unequal distribution of the resources they are helping to save, the logic will continue. With the rich getting richer and the poor poorer, the planet, as an abstract, will be saved, but social disruption will continue increasing. Sustainable development is "meeting the needs of the present generation without compromising the ability of future generations to meet their own needs" (WCED 1987, 54). Guaranteeing that those resources will exist is just the first step. We still have a lot to do about guaranteeing the fair distribution or access to them.

Myth 4. – Holism: Sustainable solutions are one hundred percent sustainable.

Probably sustainability is not such a universal and comprehensive fact, and few things can really be totally sustainable. An element or system can offer a sustainable solution to a certain aspect, but still be detrimental to others. That happens, no doubt, with zinc. It seems to be positive in socio-environmental aspects, while not so much, at least not by default, in ambiental (comfort) aspects. Finally, it does definitely badly as a culturally wise device.
Myth 5. – Nostalgia: Sustainable means to be respectful of tradition.

In actuality, the concepts of culture and/or tradition do not seem to be the critical ones when looking at the feasibility of technologically sustainable solutions. Seeing again the Secoya living in traditional palm-based houses is a mythical image that often delights us. Recreating for them the Jaihué’e as some organizations have done since the early 1990s has an extraordinary effect. It helps them think about the collective memory, becoming a motive of reflection for the new generations, plus it is handy when introducing or "selling" the group to visitors. However, pretending that the Secoya will live again in those houses in the present circumstances may not be realistic. Those newly built malocas cannot be, as we saw, used in the way they used to be, because the family structures have changed. Given that nobody inhabits them, performing maintenance is not a priority, and the malocas fall down in a relative short time after their building. In sum, the building of those demonstrative malocas could well qualify as highly unsustainable: it takes a lot energy, money and environmental resources, while offering results that are not sustained because, just to begin with, we are talking about re-building temporary structures. Respect to tradition is something everybody agrees with. However, if a non-cultural wise solution as the zinc results more sustainable, everybody seems to prefer it, even the concerned traditional group.

Myth 6. – Absoluteness: The word sustainability says it all.

The concept "sustainability" does not seem to be self-contained but a relative term. We normally do not define anything when saying "sustainability," but we need to establish in what context we are talking about it, or what specific circumstances we are applying the concept into:

a. Relative to place

If zinc, properly used, works in the Upper Amazon rainforest, that does not mean that it will infallibly work in every possible environment. In the same logic of ideas, outsiders can find the idea of using zinc in traditional communities an intolerable concept, but the acceptance of zinc by the communities reflects that they have powerful reasons to use it in their particular environment. Outsiders might not be able to understand those reasons a priori, because they do not face that environment day after day. Local circumstances that press a decision must be understood before making any judgment.

---

172 The one of San Pablo, built in 1992, fell down in 1997. The one in Siehuaya, built in 1993, ended by 2001, and the most recent, Delfín’s, built approximately in 2001, has already visible signs of deterioration in the roof, which is filtering rain inside of the house.

Part Four – Understanding the Change Between Landmarks
b. Relative to time

The idea of what is, or what was, sustainable is probably also relative to time. In other words, what is or is not sustainable changes over time. We all agree in that, among the three Secoya housing landmarks, the Tu‘que Hu‘e was the type that corresponded the most to our ideal of sustainability: strongly community-oriented, full of symbolic value, deeply related to availability of resources around, and one hundred percent biodegradable. However, as this thesis shows, despite all those plus points, the house is not sustainable anymore. As for the Pa‘pa Hu‘e, the missionaries pressed its embracing. When they left, the Secoya kept it although they were not obliged to, because they found that for their new necessities it worked. Its presence, therefore, became sustainable, but just until a moment in which due to environmental, social, economic and other causes it could not be sustained anymore. Through industry, the Zinc House type appeared introduced. Resources from SIL and then from the negotiations with the oil corporation helped the type to stay for a while. Then the type definitely stayed because the Secoya saw that it worked. Now it was it the one that was sustainable. In sum, each of the Secoya housing stages was sustainable in its own historical time setting.

Precisely because of this relativity to time, there are no reasons to believe that the Zinc House type will stay forever among the Secoya.

Final Remarks

The one thing all the factors that pressed change in the Secoya building point to is sustainability. The Secoya case, indeed, challenges our preconceptions on sustainability, making us realize how particularly problematic it is to talk about that in the context of traditional communities in environmental hotspots. At the very least in that context, we need to do some re-thinking on what sustainable means.173

173 I mean literally re-thinking, not formulating new theories on sustainability (since there seems to be so many already). I say thinking again on the many facts that have supported bringing up the idea of a sustainable development (and that are documented in UNCHD 1972, WCED 1987, UNCED 1992). There is a claim there for a socially based sustainable development, not an environment-centered one. We need not to forget that sustainable development is one that protects people, so these people can protect the environment.

Part Four – Understanding the Change Between Landmarks
Part Four Final Remarks

Part Four has established nine main reasons for the Secoya having had to change their building and ending in the Zinc House. Those reasons responded to economic pressures and building constrains and opportunities. They included the logical response to a change in the economic system and increasing environmental, financial and time costs. This took off the Secoya hands the possibility to continue building the traditional types, while the availability of zinc offered them an opportunity they did not resist, as it solved a growing necessity for social legitimation, as well as for practical and affordable housing solutions. The fact that the elements that forced the change were so powerful does not leave room to lament it, because it was basically unstoppable. The option left is learning form it, and we learnt how the Secoya case denudes our own myths and prejudgments about what sustainability has to be like in traditional communities.
Conclusion

This thesis has provided the elements to understand the change in the building structures of the Upper Ecuadorian Amazon Secoya as an option to just mourn it. In addition, it has developed a set of lessons to learn from this change, and that are related to what the thesis calls the urban myths on sustainability.

In order to facilitate understanding and lessons, the thesis began by defining the context of the topic in Part One, Chapter 1. That definitional context included an introduction that explained the motives for doing research on a group that is not exotic anymore for research purposes and whose architecture cannot compete in technological spectacularity with that of the Western tradition. Following that, the goals were defined, and at the end of the chapter the thesis was outlined.

Then, in Part Two, Chapters 2 to 4, the thesis described each of the three landmarks that characterize the Secoya building change. These are the Tui’que Hué’e, a communitarian, semi-permanent, traditional house; the Pa’pa Hué’e, a grouped set of houses with the capacity to last more and which results from the indigenization of multicultural knowledges, and finally the Zinc House, an individual, durable, modern house.

Having done the descriptions, the fact that the three types were essentially different and the change was deep was established, but it was also established that there was certain continuity between type and type. The historical context of the typological evolution was explained in Part Three, Chapter 5. The Tui’que Hué’e is the result of a process in evolution that comes from pre-contact times; the Pa’pa Hué’e is the result of the encounter of indigenous with the urbanization necessities of Spanish missionaries, and the Zinc house is the result of an early presence, as early as it was in Europe, of metal in the building of the Upper Amazon.

Then, in Chapter 6, the thesis explained from an ethnographic perspective why this change was crucial for the Secoya community. It first developed the idea of how important was the Tui’que Hué’e for the Secoya culture by exploring two main aspects: the Secoya myths were written in the spatial organization and structure of the Jaihué’e, and the house operated as an ecological device, being an overpopulation controller. Following that, and in the same chapter, the thesis explored the implications related with the abandonment of the Tui’que Hué’e. One of them was loosing the possibility of having in the building technique an element that helped affirming the Secoya ethnicity. The second one was the debilitation of social bonds because collective action was not so crucial after the Zinc House required much less maintenance. The third one was the recent phenomenon of change in the kinship structures of the Secoya as the natural consequence of their staying in one place, abandoning the migration.

The analysis of these implications aimed to show the magnitude of the change. Provided that background, Part Four of the thesis was dedicated to the understanding of the change itself. Chapter 7 explored what exactly were the aspects that forced the Secoya to change their
building structures. The thesis identified nine changes in the economic system, depletion of resources that made the traditional building costly at both environmental and financial levels, less time availability, goodwill in using industrial materials, the rightful necessity of the Secoya to express themselves as modern, the easiness to build and then reform the Zinc House, and finally their natural pre-disposition to change.

The thesis concluded in Chapter 8 with an appeal to go beyond lamenting the change in the Secoya building and instead re-thinking our expectations about how life is for a traditional community. Six popular myths that express those expectations were enumerated and contested: it is not true that if traditional groups had not changed, they would still be living under absolutely sustainable conditions. It is not true either that natural materials are per se more sustainable than industrial materials. It is not convenient to think about sustainability as all about performance and resource saving. It is inexact to think that sustainable solutions are one hundred percent sustainable. It is questionable that sustainable means to be respectful of tradition, and, lastly, the word sustainability does not define anything as an absolute concept.

Why is this research relevant for architectural concerns? The discussions on sustainability have come late to architecture in comparison to social sciences, and unfortunately arriving late did not mean they arrived with the level of maturity they reached in economics or in sociology. Professional practice not uncommonly echoes popular naiveté when dealing with sustainability issues. Everywhere, building has a very strong environmental and social impact and, because of that, we as builders cannot afford simplicity. Our decisions, after all, have to do with one half of the energy that is being consumed in the world, and affect one half of the world population who are today living below the poverty line, the Secoya among them.

Further research should develop some of the thesis topics that require special consideration. For example, new ethnographic fieldwork is necessary to update the one made by Vickers and others in the 1970s and 1980s, and to establish how deeply have the Secoya kinship structures in reality changed. This will establish if the change in their building structures was merely aspectual, or if it was as deep as it looks to us. It is necessary, on the other hand, to write a Secoya building history over a broader perspective, looking for more evidence that the Tui'que Huë'e was not the first house and detailing step by step the change from each of the types to the next. Additionally, it is required to verify with numeric data the assertion that using zinc in the Upper Amazon supposes a lower environmental impact today than using palm fronds. In the case it proves true, it would then result necessary to explore along with the Secoya design options that involve a more culturally sound use of zinc while still being easy to build and affordable. Finally, there must be a follow up to the future building evolution of the Secoya, especially in relation to the expectations that a group of them, that includes Cesáreo, has about moving to Lagartococha, near the territory they left in 1941. There, they plan to re-run many of their traditional life pieces, including the building of the Jaihuë'e.
Afterword

"The Secoya people may not recover their lifestyle," the famous Secoya leader Elías Piaguaje told recently to the Ecuadorian newspaper El Comercio (El Comercio 2003). Whereas Elías' assertion will very likely render true, that might not necessarily represent the end for the Secoya culture. Although very often—and very informally—Secoya's is spoken of as a culture in extinction, the moments in their history in which accelerated transformation happened were also the moments that resulted in their most splendorous re-flourishing, as when they appeared with tunics and new houses after their 17th century interaction with missionaries, or when they grew as a strong community in Ecuador after having to leave Peru because of the war in 1941. As for today, Secoya—with the help of remarkable non-Secoya people—are fighting to keep alive the most classical expressions of their culture, while once again reinventing themselves, indigenizing what comes from outside and results convenient. Their necessity to do it is teaching us lessons. Those are lessons that talk about the urgent necessity to compensate the right way environmental and societal issues today, the necessity to slice down that contrast of extreme poverty in one of the wealthiest places in this planet in terms of resources, the Upper Amazon.
Glossary

Some terms will be used so often in this thesis that it is necessary to make clarity on their meaning so the reading can flow easily. I have taken the liberty to organize them in a non-alphabetical order, to allow a logical interconnection between terms.

Secoya

The Secoya are today approximately 400 people. They are part of the Ecuadorian branch of a group that used to be numerous and scattered throughout a vast area of more than 30,000 square miles (Vickers 1976, 25), occupying parts of Southern Colombia, Northeastern Ecuador and Northern Peru. They live in the northeastern corner of the country, in three small settlements, San Pablo de Kantesiya, Siehuaya and Eno. The three villages are located by the Aguarico River, one of the main tributaries of the Napo, which, along with the Marañón, are the main water source that creates the Amazon.

Contrary to what it could suggest, the name Secoya is not related to Sequoia, the majestic coniferous tree. It is, in actuality, the castellanization of one or several Pai coca words that vary according to the consulted source. One Secoya "official" version says the word is Siecopai (or Sieköya pai), "people of many colors," and that refers to the colored adornments, made from bird feathers, that characterized them (César Piaguaje, conversation with author, 2001). An anthropologist, William Vickers, says the word is "Sekoya," a stream in Peru from where they had to displace in the 1940s (This stream is called Wahoya in Pai coca, language in which the Secoya are known as the Wahoya bai [1976, 23]). Another researcher, Ruth Moya, relates the name to Nañe Siecopain, "people from heaven with multi colored tunics" (1992, 86). In any case, the association of the name with colored adornments is the most common.

The Secoya arrived to their present area of occupation throughout a series of pre-contact migrations that led them to separate from the Eastern branch of the Tucanoan group in the

---

174 I will use Secoya when I refer to the group as a whole, and Secoyas when referring to Secoya individuals.
175 Secoyas of the three countries maintain occasional contact by crossing the borders to visit relatives. However, this is an area of constant border tensions and that has an impact on their relationship. In the war of 1981, to cite a case, each country took Secoyas for their armies and relatives had to fight each other.
176 After four generations of intermarrying, sharing a similar mythology and speaking mutually intelligible dialects with another group, the Siona (Vickers 1976, 23,25), the Ecuadorian Secoya came to be classified as one single group, the Siona-Secoya, in the ethnographic literature.
177 The San Pablo settlement was inaugurated in 1973. Siehuaya was settled in the early 1980s (1980-81, according to Moya [1992, 163]; 1983, according to Wood [1998, 19]; 1984, says Celestino Piaguaje [Payaguaje 1994, 190]). Eno, much smaller than the other two, was also established much later.
178 Actually, it is the tree that is named in honor to a remarkable indigenous, North American Cherokee Sequoyah the writer.
179 The name could actually be in actuality Wahoya pai, "people from Wahoya."
Orinoco River basin, and moved a few hundreds of miles southwest, until getting to the Napo River. There, compensating ferocity and negotiation, they got to impose over local inhabitants. They were often mentioned in 17th and 18th century chronicles of Catholic missionaries with the name of Encabellados, longhaired (Vickers 1983, 453) because of their hairstyle. The missionary accounts highlighted their being so feared by other groups, due to their powerful and effective sorcerers. At the same time, however, those accounts narrated how they had a particular ability to make the most of situations in which they were in disadvantage, including, of course, the missionization itself.

Blanco

Any outsider, independently of his/her status, origin or political affiliation. It can be an environmentalist or an oil corporation representative, or a wealthy Ecuadorian Andean politician, or a poor colonist. Blanco (white) does not express a racial, nor even a social category itself, but a cultural attitude, that of the outsider, the non-indigenous person, generally prone to see the indigenous world under his or her perspective, despite if it is to sub-or-over-value it. In some parts of the thesis I will also use "us," "we" "outsiders" and "Western" intending to mean the same.

Quichua

The Quichua are a widespread Upper Amazonian group, originated from displacements from the Andes of Quechua people that had been under the realm of the Incas until the early 16th century. They were forced to move by the Spanish to help colonize the forest. They joined Inca descendants that were very likely already in the lowlands before the contact, and to many Andean indigenous that continued displacing down the mountain, spontaneously, over more than three centuries. Because of their historical origin, the Quichua embody for the Secoya a curious ambivalence between being their own people and being foreigners.

---

180 Some authors such as Weiss, Chantre, Tessmann and De La Cruz have suggested that the naked Amazon warriors that Orellana assured to have been attacked by, and who were never found afterwards, could have been in actuality longhaired men. By 1541 the Secoya populated the area of the attacks, but it would be adventurous to state that they were those warriors.

181 Their hairstyle would change later to a somewhat Franciscan-looking fashion, probably as a consequence of their interaction with the missionaries.

182 Travelers in the nineteenth century (Simson [1886] 1993, 177) and ethnographers like Tessmann in the early 20th century ([1930] 1999, 120-121) called them Piojé, a sound relatable to the Pai coca peoji, "there is none" (Piaguajes and Johnsons 1992, 100, 101, 224). That was their common response at that time when they were asked for food (Vickers 1976, 22).

183 "Perucho the Conqueror" one of the first Secoyas with a name recorded by history, became noticeable amongst first missionaries after having stuck a cross by a riverside and waited patiently for weeks, until calling their attention. Then, after having convinced them to start a mission but having found they would not actually get so much from that, Perucho just left (Chantre y Herrera [1799?] 1901, 351-54).
Quichua, in the thesis, will be used to refer to both the people and their language, which is a particular variation of the Andean Quechua.

Colono

The phenomenon known as colonización ("colonization") began around the 1940s. At first, it was mostly an informal phenomenon of self-displacement of poor people from urban centers who would leave the Andes in search of a better life in the forest. However, there were official initiatives to encourage these people to populate the Amazon both as a nationalist gesture and as an opportunity for a new life in rich, "empty" lands. By stimulating that, the Ecuadorian government sought to create a "living border," where settlers would become a natural barrier to new foreign invasions.

Colonization was facilitated by one main and novel thing, roads, which had started being built by industry. That was only the beginning of a long relationship between colonization and industry. Although never interrupted since it began, colonization boasted after oil exploitation started in the Ecuadorian Upper Amazon in 1967. As oil companies opened more roads for exploitation of new fields, colonos would use them to look for new territory, settling by the roads themselves, because of the obviously higher market value of those plots.

After the space available by the roads was taken, some colonists ventured to take space by the rivers that they could take out of the indigenous. Then, when that space also became scarce, newcomers would occupy the space behind the already taken. That conformed a second line of properties behind which new colonists would settle at their turn, forming a third line when no more land was available.

---

184 With this declaration, the government was somehow sending the message that, officially, the indigenous that occupied these lands were invisible.
185 It was actually in the period 1962-1974 that the growth rate of the population of the Ecuadorian Amazon grew the most, up to, in some areas, three times its normal levels. (Bilsborrow 2003, 74). Then it would go back and stabilize in the same rates of the 1960s until the 1990s.
There was a moment in which there were up to 6 to 8 colonization lines in some places, going as deep as 7 miles far from the roads. Most of the occupied territory was to be cleared. The land takeover and clearing happened in what usually were the indigenous hunting and building material pickup areas. That triggered a scarceness of resources that put in many occasions the colonos in direct confrontation with the indigenous communities. Having the indigenous been seldom considered in the initial plans, the authorities did little to prevent the confrontations.

In an attempt to manage the way the space was taken, several initiatives to control colonization were made by the government.\textsuperscript{186} All of them consisted in providing ways to legalize and restrict the tenure over the lands the colonists had. As the indigenous saw it, what the State was doing was officially giving away their territory to the colonos. In the mid-seventies, each colono in the Ecuadorian Amazon owned in average 30 hectares (75 acres) while the indigenous communities pulled back into the forest.

Looking at the reason why it was initiated, that of a population strategy to provide security for the borders, the colonization does not seem to have been much of a success. There has not been a considerable increase in the growing rate of the population of the Ecuadorian Amazon since 1960. The colonos did not move to the border but stayed by the roads, and crossfire with Peru continued until as recently as 1995.

However, the impacts of the colonization have been very apparent at environmental levels. Even having such scarce population, representing today only 4 percent of the total of Ecuador and populated only in a number of three individuals per square kilometer, 15 percent of the Ecuadorian Amazon appeared deforested by the end of the 1990s (Perz, Aramburú and Bremner 2003, 15-20). The colonos, however, should not be considered the "bad guys." They have just been victims of the same generalized situation of unfairness that has affected the Secoya.

**Upper Amazon**

The area called "Upper Amazon" varies according to the researcher, while still being geographically right. Some, for example, refer with this name to the Beni and Upper Madeira River basins in East Bolivia and West Brazil. I am taking the approach of other authors such as Golob (1982). By Upper Amazon I am meaning the area formed by the basins of the three main tributaries of the Amazon's headwaters. Cited from North to South they are the Upper Putumayo River in Colombia, the Napo River in Ecuador and the Marañón River in Peru. The main facts and analysis in the thesis refer to the sector of the Napo basin, in particular the Aguarico, Cuyabeno and Napo Rivers. Often, when I talk about "the Secoya area of occupation" I am meaning that specific area. When I refer to "Upper Amazon" I am mentioning the whole area between the three big rivers, and when I talk about "Amazon" I am referring to a fact that can, to a certain extent, be valid for the forest sector that comprises ten countries.\textsuperscript{187}

\textsuperscript{186} Some of the most notable initiatives took place in 1964, 1973, 1977 and 1994.

\textsuperscript{187} Ecuador, Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Paraguay, Bolivia and Peru.
Community, Group, Tribe

The term "tribe," which is as complex as over-utilized, does not make justice to the patterns of inhabitation and socio-political organization of most Amazonian communities (Jackson 1983, 7), Secoya included. Because of that, rather than speaking of them as "tribes," we should use the much less biased "community" or "group."

Typology - Type

I use this term in its most liberal and still acceptable meaning, that of any type of architectural classification. The classification here is that of different types of houses that are or were repeated as models or themes with some variations during a certain period of time in the Amazon.

Maloca

Maloca is a Spanish (and Portuguese) synonymous for house, in particular for an indigenous traditional, communitarian house in thatched palm and raw poles. The word is linked to a very strong entity in symbolic and social terms in anthropological literature. Although it is possible that the word originated in one of the many Amazonian languages, perhaps the Arawak, it was common in Latin-American Spanish until the first half of the 20th century, and defined such negative thing as maldad, "evil intention." Maloquear meant to attack the indigenous by surprise, setting their longhouse in fire and causing as much damage as possible, usually as a revenge for a previous indigenous raid. For some reason, intentional or casual, the word that was used to destroy the house historically ended by defining the house itself.
Some anthropologists oppose the term to another forest indigenous typology, the Tambo, which will be defined below.

Jaihuë’e

This is a synonymous of Maloca used specifically by the Secoya, who in some cases do not recognize the Arawak-made-Spanish word. Literally, Jaihuë’e means longhouse, "casa grande" (Vickers 1989, 180). Cesáreo defines it as house on the soil, as opposed to houses on platforms: "Jaihuë’e. Tierra casa dice." (Cesáreo 2003), I will use the word in the context it appears in ethnographic literature, substituting the word Maloca. In fact, I will use both terms, Maloca and Jaihuë’e, interchangeably.

Tambo

The tambo is a small and temporary structure for hunting journeys, protecting from rain, healing from disease or combat injuries and alternative living in situations related to rituals or to disputes inside of the extended family. The concept tambo is usually understood as opposed and complementary to maloca in anthropological literature. Different than the big house, the tambo is small, individual and temporal, although still essential. As a name, but not exactly as a concept, it is related to the Inca tambo, a structure that was different in materials, use, and geographical location, but which was also built to assist travelers. The Inca tambo, however, was a permanent structure, and it was normally a warehouse. The specific tambo structure among the Secoya seems to have been called Huetara Huë’e and there was not an existing example that I could document during my stays.

Tui’que Huë’e

This is the oldest known example of Secoya housing types. The Tui’que Huë’e portrays exactly what a classical maloca is for anthropologists. It was probably living in this type of house that Catholic missionaries that accompanied the Spanish colonial armies found the Secoya living.

---

189 The word is spelled out as Jaihu’e in Payaguaje Trujillo et al (2002, 213) and Hai wë’ë in Vickers (1989, 180).
189 When I asked Cesáreo (2003), after some time and considerations he concluded that Maloca could be a word used by the Quichua.
190 Jai is a prefix that works in Paj coca as an augmentative (Piaguajes and Johnsons 1992, 58). Consequently, Jai Huë’e means "big house."
191 To represent the Secoya sounds, Vickers used in his work the linguistic alphabet. I am using the easier to understand alphabet Johnson calls practical (Piaguajes and Johnsons 1992, 7).
192 However, Cesáreo eventually uses the name as a generic with which he also names the Pa’pa Huë’e. Accordingly, he interprets Jaihuë’e as Casa de Hoja, "leaf house," surely referring to the common point between both houses, the palm fronds. In other words, he seems to use the word in the context of their house, the more indigenous one, and excluding the Zinc House.
193 Some of the Inca tambos, however, were expanded and became citadels, including shelter.
After the contact, they started progressively abandoning it. The last Tui’que Huë’ ña were used as housing structures until approximately 1941, a key year in the Secoya history because it was then when the group this thesis studies decided to move from Peru to Ecuador.\textsuperscript{194}

**Pa’pa Huë’e**

This is the second landmark that will be studied in the thesis. It is unclear when the Secoya started to implement and use it. It was very likely about 1636, in the midst of their struggle with missions and displacements. It is clear, however, when they stopped building and using it. This happened between 1998 and 2000, in the midst of new conflictive situations after indications that there could be oil near the Secoya settlements.

**Zinc - Zinc House**

I will often use "Zinc" as a synonymous for "corrugated metallic laminae." Not only it will be convenient because of its shortness, but this is a common way the word Zinc is used in the building context of the Secoya (and in general of people in rural areas in Latin America). In fact, builders like Cesáreo always use it and also use the common expression "Casa de Zinc," "Zinc House," which is the one I take to refer to the third type in this discussion, the house that is covered by metallic corrugated roofing.

**Huë’e**

This common noun appears in both the names of the Tui’que Huë’e and the Pa’pa Huë’e. It is the Pāi coca (Secoya language as it will be explained in note below) for House. It is interesting to notice how the Secoya use the Pāi coca word to name the two palm-roofed types, but they do not use it for the metallic roofed one. In my conversations with Secoya builders I never heard them saying something like "Zinc Huë’e."

**Huë’ ña**

Plural of Huë’e, "houses." In order not to be repetitive, sometimes I will say "The Tui’que and Pa’pa Huë’ ña."

\textsuperscript{194} They displaced Secoya were in a hunting and fishing journey when they got caught in the crossfire of a war that suddenly broke out between Ecuador and Peru (Johnson and Levinsohn 1990, 7; Cesáreo 2003). This war has curiously been described as a remote-control war between two countries sponsored by two oil companies, American Standard (now Exxon) standing behind Peru and Dutch Shell behind Ecuador. The dispute would settle basically with the American acknowledgement of Shell concessions in Ecuador (Stoll 1985, 406-07).
Pai coca

Literally meaning "the language of people," this is the mother tongue of the Secoya. The Summer Institute of Linguistics, that calls it "Secoya," estimates that 290 persons only speak it today (Grimes 2003). After the Záparo, Pai coca is the indigenous language with less living speakers among the 20 different languages spoken of Ecuador. The Secoya are in general trilingual, mastering Spanish and Quichua besides Pai coca. In a normal conversation, they can shift with great facility from one language to other, depending on the level of privacy they want in the conversation. However, more and more young Secoya opt for having their conversation in the more widespread Quichua or Spanish languages.

Shaman

There are different versions about the origin of the word shaman but it certainly did not come from the South American indigenous tradition. This is a word often used by outsiders to describe the healer or head of an extended family group in the Amazon. It is not used at all by the Secoya (they may use "drinker" or "old man"). I take the liberty of using it here because of the effectiveness and expressiveness of its meaning, that allows us to form a mental image when hearing it, just as we immediately do when hearing a word like "house."

Yaje

Yaje (Banisteriopsis caapi), also, and often, called by the Secoya with the Quichua name Ayahuasca ("vine of the soul"), is a powerful psychedelic that they, as many other Amazonian cultures, use in ceremonies with the main purpose of helping those who master its use, the shamans, in divination tasks. Under its effects, they say, shamans can see the cause of disease in a person, as well as to know where is most likely possible to find the prey, what can be the solution to a problem the community is going through, and even know how the whole "matrix" of the universe works. Yaje is deeply linked to the Amazonian culture and is taken with a lot of respect by indigenous people. One of the main alkaloids Yaje releases is DMT, which has been found to be ten times more powerful than LSD. The plant was patented in 1986 in the United States by Loren Miller, from the International Plant Medicine Corporation, claiming it as his invention. The patent was rescinded in 1999 after pressure from indigenous communities of nine South American countries with the help of American environmental groups.

---

195 Probably it comes from the language of the Tungus in Siberia, although some say it could come from the Sanskrit "saman", which means exalted or ecstatic.
Cesáreo

Cesáreo is a notable man, whose age is not clear to me. He used to be 99 years old back in 2001, but in our last meeting in 2003 he was only 89 (after all, time, or age, are not that important in the Amazon). Cesáreo, one of the oldest Secoyas alive, is the living history of his people, and has suffered as no one else the many complexities that have been the life of this group for a long time. He witnessed his grandfather’s death because of a disease contracted from rubber dealers. He had to escape from the Peru war in 1941. He was the first Secoya in the Ecuadorian army in the 1950s, and he has an oil exploration site behind his house. But beyond being an exceptional historical source for the knowledge of the Secoya, he is a barefooted architect with a splendid portfolio he carefully keeps in his memory. He has an extraordinary amount of valuable knowledge on the Secoya traditional building. Hopefully that knowledge can survive, for the benefit of the new Secoya generations, and for people interested in building.

Mission

I use the term mission mainly in the context of urban planning: the mission is a town. It is the major Spanish attempt made in the 17th and 18th centuries to urbanize in the European fashion indigenous communities that were living dispersedly in their own "urban" entities, those inner cities in one single house called maloca. The mission was in the Amazon the physical accomplishment of the policy of reducción, which meant to reduce to a few acres, say five, the territory of tens of thousands of acres that indigenous occupied. This did not only convey the purpose of controlling them, their insurrections, their escapades and ambushes, but it sought to make them produce for the Spanish. That reducing and urbanizing attempt was carried out by Catholic missionaries that came from Europe (mostly Spain, Portugal, Germany, Italy) and the recently formed urban colonies of the Andes (such as today’s Ecuador, Peru, Colombia) and even some who came from today’s United States.
They received the support from mobile troops from the Crown when indigenous became unmanageable. Since normally there were not enough troops to set posts in every mission, the quietness of the town relayed in the priest and his capacity to persuade the indigenous to stay calmed. Sometimes the troops did not get on time to pacify a rebellion and the mission ended with the priest and his aides fleeing or being killed and the houses and church being burnt.\textsuperscript{196} Then, the indigenous escaped deep into the forest where they tried to form a new maloca unit. Eventually they would be re-captured and punished.\textsuperscript{197} Or they would return by themselves, begging for pardon after finding they had gone unaccustomed to the maloca life, or that their survival in such impenetrable places was too difficult. Some of them, however, may have succeeded and loose contact with Blancos for more than a century.

Encomienda, Mit’a and Gift Economic Systems

These were the main economic systems operating in the mission. They had the common norm that indigenous would not be paid, but they would be taken care of by the missionary. None of them was specific to the mission, but they were generalized over the South American Andean colonies.

Under the \textit{encomienda} one individual, in this case the missionary, would receive from the colonial government a number of indigenous he would use as workforce, generally in agriculture. As for the Inca originated \textit{Mit’a} or labor-tax, indigenous had to contribute with work in designated spots that in the case of the Upper Amazon mission were farms. The idea of \textit{gift} was based on the Inca economy of retribution that set special holidays in which distant relatives (members of the same \textit{ayllu}) from different geographic areas would get together to exchange presents. This provided the occasion for the trade of goods from different ecological areas. The system was adapted as compulsory, not necessarily linked to celebration and not involving indigenous from distant places. Simply, if indigenous failed in handing gifts to the missionary, for example, they could be punished.

Summer Institute of Linguistics (SIL)

SIL is a Texas-based organization that defines its work as faith-based research. It was established in 1934 as a summer training school by William Cameron Townsend, a talented linguist. Its purpose was that of serving, in association with his students, indigenous peoples in the world. They would focus their labor in three main areas, scientific, material and spiritual. Accordingly, they would first learn and systematize the indigenous language of the group to work with. Then, they would translate the New Testament into their language. Finally, they would proceed to convert them.

\textsuperscript{196} The first Franciscan church built in Peru was also the first one the indigenous put in fire (De La Cruz ([1653?] 1999, 234-236).

\textsuperscript{197} To the credit of the Jesuits, probably the brutality on the indigenous would have been worse if the colonization had been run by militaries, as it was the case of Brazil.
The consequences of their mission have been paradoxical. At the same time they are accused by many of having ruined an impressive amount of the indigenous knowledge, the fact that they created writing systems for the groups that had not a written language, the Secoya included, further allowed the compilation of some of the knowledge in writing and, hence, its permanent availability. Also, given that before destroying they documented, SIL constitutes today one of the major sources for the knowledge on these cultures.

In the particular case of the Secoya, the interaction rendered the embracing of a new religion, the end of Yaje ceremonies and the body paint among other losses. However, it also got them legal titling over their land. Legal ownership probably provided the Secoya more representativity than their having lived in the area for centuries when the dispute and further negotiations with powerful oil companies aroused.

Cauchería

Cauchería was the name given to the rubber exploitation business that blossomed particularly during the last decade of the 19th and first of the 20th century in the Amazon, as a response to the increasing international demand of rubber for the emerging car industry. The cauchería is a historical landmark in Upper Amazon indigenous studies, because of the impact it had on them. They were the workforces that made the business possible, and they were forced to it through a system called endeude ("indebtedness").

The endeude was a derivation, or better said a perversion of an old practice of goods exchange among indigenous communities. The system worked for centuries very well, until opportunistic Blanco dealers implemented their own variations.

---

198 What ended was in actuality the public exposure of body painting, since many old Secoya continue to have it underneath their clothes.
They started by redefining it as a compulsory in-kind payment: no money would be received from indigenous in business transactions even if they had it, but they had to pay with natural resources, such as animal furs, in exchange for what they were offered: guns, ammunition, pots, tools. Then, the amount of what was offered decreased, while the payment was increased. Within a few years, indigenous were receiving, for instance, one piece of cloth in exchange for two years of work collecting rubber. Since their necessities went beyond what was offered and the only channel to get the products were the rubber dealers, the amount of time indigenous had to work for what they needed increased geometrically until a point in which it did not matter if they worked for their rest of their lives, they would never be able to pay for their debts. If they tried to go out of the system, threats, displacement, chains and death would convince them it was better to go back.

Not only endeude was disastrous at a social level but also environmentally it was completely unsustainable. When rubber started being planted in the Far East in 1876, the end of the just emerging industry of collecting natural rubber in the Amazon had been signaled. The first important consignments of rubber from plantations in Asia started to appear in the market in 1905. The last year in which rubber merchants from Peru, Bolivia, Brazil and Colombia made considerable profits was 1910. That year rubber raised to the highest prices ever, but by the end of the year its price was the lowest in many. Things had became complicated already for the business when in 1909 a denounce by American engineer Walter Hardenburg was published in the British newspaper "Truth," revealing the horrors the indigenous were subjected to in such exploitation. In 1913, Julio César Arana, the lord of the rubber merchants in the Upper Amazon, was called to declare in the British parliament, due to his partnership with British investors. His company was cancelled. Two years after, rubber planters had more than twenty times more plantations than what they had ten years before. The Amazonian rubber dream had ended for most of the dealers, but the most powerful, Arana included, managed to have a second chance. By 1920 he had recomposed his company and pursued his large-scale exploitation of the indigenous, defying all legal and humanitarian considerations until the end of the 1930s (Pineda Camacho 2003). In the 1940s, when the Second World War increased again the demand for rubber, endeude re-grew in areas such as Southeastern Colombia.
References


Chantre y Herrera, José. *Historia de las Misiones de la Compañía de Jesús en el Marañón Español, 1637 – 1767*. [1799?]. Madrid: Imprenta de A. Avrial, 1901.


