Landscape Images in Amazonian Narrative: The Role of Oral History in Environmental Research

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Abstract: *Oral history still plays a minor role in the environmental research disciplines. In this study, I present the richness of Amazonian narrative extracted from oral history, as a source of environmental facts and symbols concerning how Amazonians interact and perceive their ecosystem. Narratives are analysed as a set of structures that reflect on the biological, cultural and physical elements of the Amazonian landscape. The oral history interview process allows Amazonians to reflect on their landscape aesthetics preferences, leading to bottom-up proposals for Amazonian conservation, and reconstruction of landscape changes. Finally, the study proposes the oral history approach as a method that democratises the researching and interpretation of landscapes.*

INTRODUCTION

AMAZONIAN LANDSCAPE CHANGE research is dominated by land cover change, demography and political ecology studies. Oral history and individual memory of the land have not been commonly portrayed as useful sources of infor-

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mation for analysing how Amazonian landscapes change or how these changes affect human–environment interactions, except when the research incorporates ethnographic studies of indigenous groups (Brown 1985; Santos-Granero 1994). There are some studies in other regions that do use oral history (Cross and Barker 1993; Fairhead and Leach 1996; Skaria 1999) and focus groups (Moore-Colyer and Scott 2005; Thompson et al. 2005), but in general the academic discussion rarely explores the use of individual's voices to interpret the Amazonian landscape. Hence this article presents local Amazonian narratives and demonstrates how these narratives are rich in both facts and symbols that can help us better understand the Amazon and other landscapes.

The dominant form of discourse in landscape change research is via numerical evaluation of how landscapes are shaped and transformed through time. The use of remote sensing and geographic information systems has become a very powerful tool to categorise and quantify these kinds of landscape facts. Remote sensing can clearly portray a complex history of change (Rindfuss et al. 2004). The popular image of Rondonia in the Brazilian Amazon is a typical example (Figure 1). This single image can tell a story of colonisation and deforestation (Skole and Tucker 1993). With more detailed analysis, the image provides numerical information about the size of farms, the number of roads and the condition of forests present in the image. However, this approach excludes the human experience in the process of landscape change.

Figure 1

Rondonia 1986
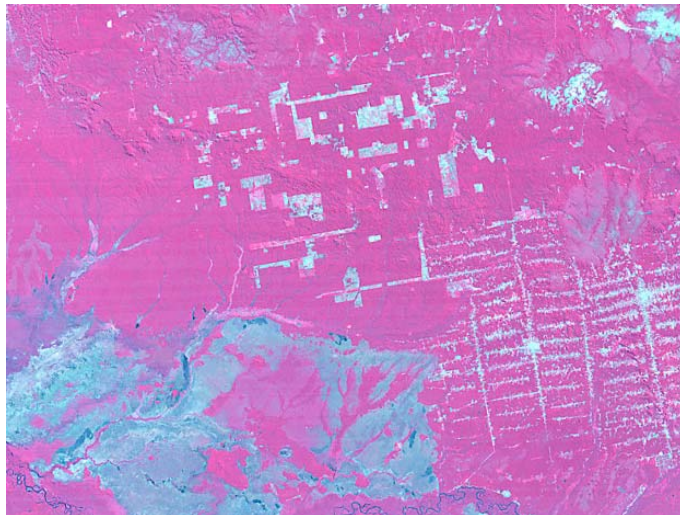
Source: (Global Land Cover Facility http://glcf.umiacs.umd.edu).

At the other extreme, art has also been used in environmental history analyses (Schama 1995; Slater 2002). Art can be full of both cultural symbols and elements of the physical landscape. Archaeologists, historians and anthropologists have used these to describe human perceptions and appreciation of the landscape. An example of an Amazonian image that has been used to portray human–environment interactions is found in the work of Pablo Amaringo (Luna and Amaringo 1999). This painting (Figure 2) depicts the visions of the painter under the effect of the traditional hallucinogenic *ayahuasca*. The image is full of mythological figures and forest species that have important cultural value for the *ribereños* as well as other Amazonian cultures.

Narrative art is an amalgam of symbols that represent stories from the past and the present. To unravel these layers of information, the researcher ventures into the realm of the artist's conscious and subconscious decisions, resulting in debatable conclusions about the work. However, the apparently more objective descriptions based on modern cartography have allowed groups to describe modern histories of deforestation and delineate regions that are also debatable, and can contradict local realities (Orlove 1991; Peluso 1995).

Figure 2

Pablo Amaringo's ayahuasca vision painting

Source: Pinedo–Padoch private collection.

I wish to demonstrate that Amazonian oral history is a blend of factual environmental information and narrative art. This blending is evident in the following section of an interview.

Sergio: *How many years old is this lake?*

Jose[1]:   *This lake has quite an age; this lake was formed soon after we arrived. When we came to live here, this was not a lake, but a small river channel. People from the community of Nueve de Diciembre would pass by in motor boats that would disembark nearby. During a big flood the river raised some soil over there, closing the exit, and hence it remained a pond. And from a pond it started to become a big lake. Now there is even a* Yacuruna[2] *living in this lake'.*

Jose narrates an accurate description of lake formation in simple terms. But this lake formation does not occur in a landscape where only the river, sediment and plants are changing. The narration also presents how these transformations echo in human lives, an echoing that environmental modellers call human–environment feedbacks. The lake formation provoked changes in transportation patterns and community myths. Hence this short narration allows us to understand not only Amazonian environmental change, but also symbols of change that affect *ribereños'* daily lives. Moreover, the speaker demonstrated the Amazonian narrative art style in this short dialogue, which is unfortunately diluted when transcribed and translated to English.

Throughout the interviews and conversations related to landscape change that I conducted in the Amazon communities, access to transportation and mythology appeared as common themes. Although my natural sciences background would bias me towards the discussion of aspects of the physical landscape, interviewees kept returning to these elements. This is not entirely unexpected, as transportation is a major driver of Amazonians' everyday decisions. For instance, Jose decided to establish his house near the channel to have direct access to the river. Now that the channel is closed, he has to walk for almost an hour to get to the port. Myths are likewise inseparable from discussions of landscape change. Myths such as the *Yacuruna* 'suggest not only the uneasy boundary between the human and natural spheres, in which the two inevitably impinge upon the other, but also the metaphoric and metaphysical implications of ongoing transformation' (Slater 1994). However the *Yacuruna* story, which also reminds the community to care for the lake and to be cautious of strangers, might have come easily to mind if interviewees viewed me as a pale, potentially threatening stranger.

METHODS

I used the oral history approach as the method and discipline for collecting and analysing people's narratives in my ecological studies of the Peruvian *várzea* landscape. Compared to other strategies of interviewing in social sci-

ences, oral history gives particular attention to memory and conceptualises the conversation as a result of an interaction between the interviewee and interviewer (Portelli 2001). The collected memories and narratives are the result of these interactions, and each interaction can be considered an experimental result in its own right. The common approach in oral history is to produce an interview that is focused on the individual's life experience. The resulting interview is transcribed and further discussed with the interviewee. The field of oral history has a record of being progressive and interdisciplinary in perspective, encompassing not only recorded interviews, but also multiple sources to understand a historical event or process. This perspective, I believe, is in harmony with the plurality of conservation research, which borrows from a range of sources to understand ecosystems at multiple scales in time and space. Other authors have used oral histories and related techniques to re-evaluate an entrenched view of a landscape's history (Fairhead and Leach 1996; Skaria 1999).

Individual farmers, couples and groups of farmers were interviewed with the purpose of discussing their personal history, the formation of their communities and their perception of culture–nature changes. Interviews with individuals and couples started with a set of short direct questions ('where were you born?', and, 'in what year were you born?'), followed by an open-ended question about how the interviewee's native town used to be. From that point onwards, open-ended questions were used to direct the discussion towards the interviewee's personal history in relation to the landscape, and his or her ecological knowledge. Formulating open-ended questions allowed the interviewee more freedom to express his or her memories. Most individual and couple interviews took place in the farmers' houses. These were taped, transcribed, and later brought back to be discussed with the interviewees.

In total, I interviewed forty-two individuals, seven couples and nine community groups, and conducted eighty-six informal conversations in forests, farms, houses, boats and ports. The selection of the interviewees was performed in the following way. First I interviewed community leaders, which was virtually a requirement. It is preferable to interview the community leader first, in order to inform him or her about the intentions of the research, and to obtain permission to interview others in the community. Next, I interviewed the eldest farmers who were willing to be interviewed and in good health. Finally, I interviewed farmers older than 40 years of age who seemed interested in telling their oral histories. I was also guided by the important tenet of oral history practice to recognise the privacy of individuals who were not interested in participating.

Most interviews were concentrated in towns surrounding the Muyuy–Panguana archipelago. This region is mainly populated by *ribereños*, which are the non-indigenous Spanish-speaking peasants of the Peruvian Amazon. Recorded interviews were conducted in the boat and in the ports. Ports proved to be ideal places for preliminary community interviews, since farmers wait-

ing in the port for the boats to arrive had plenty of free time. Since they often wait in groups, the conversation could start with one of the farmers and the rest would join in to discuss the history of the community and the changes. Boat trips usually take more than an hour to reach to the first destination. These were also suitable places to meet farmers from distant towns and allow them time to discuss long histories. However, these settings were noisy, resulting in poor taping quality.

Interviews in the forest and in the farms were most appropriate for the discussion of land cover change, as the farmer would guide me through a landscape filled with remnants of their land use decisions. These settings would enable them to discuss in detail specific elements of the ecosystem that they saw. These interviews were especially full of local ecological knowledge, and demonstrated how their history is 'written in the landscape' (Santos-Granero 1998). Features of the landscape would prompt memories of the interviewee's life or of Peruvian history in general. Hence the interviewee's answers were prompted both by my questions and by the features that he or she saw in the landscape.

The setting, sense of rapport, timing, and ambient noise are variables that affect the interview and need to be considered in the design and analysis of an oral history project on landscape history (Yow 1994). This study is the result of a 4-year field research experience in the Amazon (2001–2005). Even though at this late stage it is quite difficult to separate the information that I have learned from the taped interviews, from that learned in my other conversations in the field, the following analysis of narrative structures focuses on the taped interviews. Taped interviews maintain the local narrative in a more pure form than my transcription and translation. They also allow me to give textual references to the information and narrative structures gathered from an individual's oral history.

RESULTS AND DISCUSSION

Even when the interviews were directed towards understanding the landscape changes of the Amazon, the interviewees' personal history and perspective was the main topic developed in the interviews. Each personal history is unique. The tone of every interview was different: some were more colloquial, while in some interviews the interviewee adopted the tone of an orator. Many experiences were shared, resulting in similar structures in the narration of life histories. Furthermore, many symbols, images and myths that reflect on culture–nature relations were repeated throughout the conversations. Hence, *ribereño* oral history can be conceived as a set of narrative structures based on topics of shared experience and images of culture–nature relations.

Because my primary goal in using these oral histories is to integrate the information into ecosystem studies, I have divided the structures into different scales: biological, cultural and physical elements of change. Within each

category I also present the unique value that the local narrative represents for understanding the landscape, and how in some cases it contradicts or supports the information obtained through other sources. I give special attention to valuable ecological knowledge and myths that are encrypted in the narrative. Nevertheless, it is important to keep in mind that all these categories are interconnected and in dynamic interaction.

Bio-Narrative

Ribereño memories are charged with images of biotic elements of the landscape. Often the interviewee makes reference to the way places used to be by describing the biological composition of the site. The biotic elements mentioned in their memories are primarily species that can be consumed, sold, used for medicine or for timber, or that grow in monodominant stands. Throughout the narrative, species are named and their characteristics illustrated as symbols of habitat condition and forest history. The use of species in the Amazonian narrative can be divided into three categories: fruit tree memories, land-use/land cover history and longing for past abundance.

Memories of fruit trees probably exist in most of us. For the Dayak of Borneo, orchards are spaces important for the demarcation of land tenure and remembrance of their ancestors (Peluso 1996). In the United States, the myth of the cherry tree that George Washington cut down has become part of a collective memory about ethics. In the Amazonian narrative, fruit trees are benchmarks of human presence and economic power.

> *Fernando: When I came to this land after my father in-law died, it had only two orange trees and four mango trees. What else? Nothing more, very little fruit. This was a* cetical-cituyal[3]. *When I came by boat I cleared everything into a plantain grove: he [the father-in-law] had some plantain. After that, when I had some money, I started to plant the fruit trees that you see now. And I planted the palm.*

The palm that Fernando planted was an oil palm, a tree which in the Amazon is only seen in big plantations. The oil palm and the other fruit trees are a symbol of dominion over the land. They also represent economic stability. For instance, when I was deciding to build my house in the community in 2003, discussions about land value became more frequent. Fruit trees are considered a major land asset, second only to river access, and followed by timber trees. The diversity and productivity of fruit trees on a property are elements of local real estate analysis.

Ribereños plant trees to diversify the production of the household. Fruit trees do not require much management after the tree has reached a certain size and canopy dominance. They even produce fruits in soils that have lost their value for growing manioc, corn and plantain. However, aesthetics and the de-

sire to be remembered by posterity are also motivations for planting a fruit tree. When Carla described her father's forestry practices, she mentioned that he told her that he planted Brazil nuts so that when he died, 'someone could eat this fruit and say, "Don Ediberto Ramirez planted this tree"'.

Through orchards, humans imprint their presence into the far future, especially in the upland forests where *humarí* (*Poraqueiba sericea*) orchards can be maintained for decades, or as Maria told me, 'for eternity'. However, orchards are less stable in the floodplain. During extreme floods, valuable fruit trees are lost. The river may erase orchards from the landscape, but not from human memory, where they last even after the river had eroded the land.

Carla: From here to 100 meters away, it was all a levee.
Manuel: How beautiful that levee was. When the fruit season came, everyone
         had caimitos[4], taperibas[5] *and* guabas[6].
Carla: Zapote[7] *and oranges.*
         And taperiba*, damn, so many and so big that canoes would sink from
         the weight.*

While the river erases the human component of landscapes during floods, at the same time it creates a memory of disturbance. In the cases when I asked settlers which years they remembered as high floods, they would often recall the years when they lost their fruit trees. Hence the memory of fruit trees in the Amazonian floodplain is related to knowledge of river disturbance history; in the Burgundy region of France, anthropological studies of social memory and environmental change reveal a similar link between fruit tree memories and knowledge about microclimates (Crumley 2002). The conversations about floods and fruits in my interviews usually developed into listings of the flood tolerance of different plant species, demonstrating the knowledge that *ribereños* have about flood disturbance.

Land-use and land cover history is often described by the use of biological indicators. As evidenced by Fernando's narrative, species are used to describe the history of a vegetation plot. Fernando uses the vegetation type *cetical/cituyal* (*Cecropia* sp./*Heliconia* sp.) to explain that the area he moved to was a recent secondary growth. *Ribereños* use an extensive list of forest classes, which are usually named after the most common species in the forest class. These class names are used by most *ribereños* and in many instances denote if the forest has evidence of human intervention.

Ribereños have a clear notion of vegetation succession and gap dynamics. Farmers know the possible sequences of vegetation succession in newly deposited soils and in agricultural plots. The description of forest succession is commonly presented within the discussion of landscape change histories. Moreover, most *ribereños* identify specific plant species that appear throughout the forest succession process. They also use relative stem diameter and

wood density to distinguish between what they call a *monte alto* (old growth forest) and a *purma* (secondary forest that has grown after a farm is left fallow).

After visiting Maria's fallows, farms and forests we sat down to record an interview. She had recently cleared a 40-year-old fallow, and she described how even *purmas* differed from *monte alto*.

> *Trees are not so thick when they grow from a* purma. *In the* monte alto *there are immense tall trees, so that when one fells it the ground trembles, boom boom. In the* purma *you only see* humansamanes[8], ceticos[9], sancudo caspis[10], rifaris[11] *and that is all. In the* monte alto *there are hardwoods*.

This description of the difference is extreme, since other species can also be seen, yet the species that Maria mentions are the most dominant species in the upland secondary forest. People use these indicator species and forest characteristics to recognise the history of the forests. The indicator species used in the upland differ from the lowland indicator species. For instance, while many use the presence of big Lauraceaes in the upland to identify a forest as old growth, in the lowland the big *Maquira coriaceae* are used as indicator species of old-growth. Using these elements, most adult *ribereños* and elders with good geographical memory can differentiate a 60 year old secondary forest from an old growth forest. This knowledge of the landscape history is not an exclusive characteristic of indigenous groups, as implied by some Amazonian scholars (Encarnación 1993; Balée 1994).

Indicator species are also used to determine the past agricultural practices in forest sites. In some instances the initial agricultural produce is still present in the field or in the seedbank. This allows the *ribereños* to easily determine the specific agricultural practices that took place on a plot. Places where jute (*Urena lobata*) was planted become dominated by jute after the secondary forest has been cleared to make a new farm. The same happens to forests in the upland where *barbasco* (*Lonchocarpus nicou*) was planted. In this way, the memory of past human land uses is recorded on the landscape and remembered by the farmer who clears the land.

Longing for past abundance is one of the most persistent structures of contemporary *ribereño* narratives. The Amazonian present is a landscape where fish, firewood, timber and animals are not as easy to find as in the past. People who worked in the fur trade give accounts of how easy it was to find animals in the forest, saying that the forest in some instances smelled like rotten meat from all the carcasses that had been left behind, since the fur was the only valuable part of the animal. Now that meat is scarce, people recognise that they had undervalued that abundance.

For riverside communities, fish populations have been so reduced that it is now common for a household to depend on canned fish and to serve species

of fish that used to be rejected. *Ribereños* carry images of fish migrations where fish could be so easily caught that one could catch them at the front door of the house. When asked about how things have changed, the narrative of longing is always present. *Ribereño* images of past abundance are filled with lists of species—usually the ones that people prefer eating.

The comparison between past abundance and present scarcity is usually accompanied by an analysis of the social responsibility of the *ribereños* and the government. Mario describes the patterns of abundance change and the social problems together.

> *I wish that at least once we could see ourselves in a mirror, and be shown that all this is ours for us to care for. If we cut down a tree, then we plant one. If we catch a fish, we can then make it reproduce in a fish farm or pond. How is not the issue, but we need to take care of things. And I say there will come a time that if we do not farm, we will not have anything. Our children will not know the* Paiche[12]. *Now there is no* paiche. *I knew the* paiche, *I would go to the lakes and the* paiche *would even try to flip my canoe. I knew the* gamitana[13], *the* paco[14], *but not anymore. Before, fish migrations would travel through that river.* Paiche *migrations. The* dorado *catfish was all around the edges of the river. It was everything a paradise should be. What is green is disappearing. How do we stop it? I don't know. But the scarcity grows continually worse, much worse, much worse.*

The local narrative of land use change describes beautiful edenic images. Many of these images are not recorded in historical documents or photographs. These images are a valuable source of information for the generations to follow. As in the United States, where the image of a sky darkened by clouds of passenger pigeons is a symbol of conservation, these narratives of past abundance are strong images that can promote conservation in the Amazonian communities and should not be forgotten.

Cultural Changes

The personal history of every Amazonian interviewed is tied to a history of economic and social changes. These changes have affected individuals and family interactions with the landscape. The narrative of cultural change discusses economic changes that can be inferred from the regional history, as well as other changes that occur at community and household levels.

Even though the history of regional events can be understood through published historical studies, it is still valuable to understand how individuals experience changes and how these changes have affected their ideology. The narrative of present market instability is the most common discourse of the *ribereño*. This discourse is usually developed in a longing tone and a desire

for the return of an agro-extractive boom or the agrarian bank. The time of
booms and government credit has been identified in other Amazonian work as
the *belle époch* (Pinedo-Vasquez et al. 2002; Winklerprins 2002), and
ribereños describe those years in that tone. These *ribereño* discourses oscil-
late between a longing for the *belle époch* and a present-day *lamento borin-
cano*. The *lamento borincano* is a popular Latin American song that describes
how a hopeful farmer goes from the rural area to the city market to sell his
produce, but at the end of the day has not sold anything. This discourse can
even be repeated several times in the same interview. The ubiquity of the *la-
mento borincano* narrative demonstrates the present economic landscape of
the Peruvian Amazon. Currently, the market oscillates daily and economic in-
formation transfers slowly from the city to the town (Agreda 1994; Alvarado
1995; Pinedo-Vasquez et al. 2002).

Javier: *What did your parents do when they came here?*
Luis: *In farming, they would farm corn. Then the time…well before that they
worked with* leche caspi[15]*, which they worked far into the upland forest.
After that* barbasco *appeared, afterward rosewood, then comes jute, to-
day there is nothing. Everything has ceased. People want to work. Peo-
ple work with corn, with rice and it is not worth it. They can not sell it.
When one wants to sell it, well, one goes to Iquitos and takes a lot of
grains, and they tell you 30 cents, and you can't do a thing, and in that
way people come and go. They can not live, and it's even worse now
that there are no* mitayos[16]*.*

These narratives clearly demonstrate the conditions and desires of the
ribereños. These narratives may contradict the official story. For instance, a
macroeconomic analysis demonstrates that there is a market for local rice
(Santos-Granero and Barclay 2000), while the local perspective is that there is
none. The two descriptions are contradictory, but one is not more correct than
the other. The first describes the state of supply and demand, while the local
version expresses the risks of rice production and the unequal transfer of mar-
ket information. All these stories, while based on individual or family experi-
ences, reflect regional cultural changes. Narratives also reveal experiences
that pertain to the community level.
    Multiple community-level processes of change and management of the
landscape would go unnoticed if not investigated through oral history. For ex-
ample, the local narrative discusses the presence of NGOs and small govern-
mental agencies that promote new management strategies that affect the
community. These organisations usually do not report on their projects on the
field, and when they do, these reports are incomplete or difficult to obtain.
They are best documented through oral history. Several interviews described
how in the 1990s, NGOs supported certain agro-extractive activities. One of
the activities promoted was the use of chainsaws for the production of char-

coal. This support has resulted in observable economic benefit to those who participated, but also in obvious deforestation. Another NGO supported the formation of fish farms. These did not result in any economic benefit, but disturbed local hydrological systems and might increase the probability of malaria in the region, an effect observed in other regions where fish farms have been left unmanaged (Matthys et al. 2006).

Land tenure policies and community management are discussed in the community narrative. Each community in this region has a policy for the division of the land and for managing its natural resources. For instance, in the community of Gran Perú one may not harvest the *aguaje* fruit by felling the tree, as is common in other communities. For this reason, natural groves of productive *aguaje* are still seen in the Gran Perú community. Many of these local laws and land division agreements are orally maintained and never written down.

Transportation routes and changes in these routes are also rarely documented data, so the local narrative is the only source of this information. From the local narrative it can be learned how transportation changed from canoes to motorboats. This narrative also describes the emergence of fishing boats with freezers and public transportation boats. Both of these changes have transformed the landscape in various ways. Fishing boats with freezers are one of the primary causes for the reduction of fish populations throughout Amazonian fisheries (Almeida et al. 2003). Public transportation allows farmers to reach the market easily, and the routes affect people's decisions about where to live. Transportation has been demonstrated in the academic literature to be a major driver of land conversion (Pfaff 1999). Locals also see this pattern. When *ribereños* describe their life history, they often evaluate their decisions for migration, which in many cases are related to transportation.

Roberto: *In this place the ability to move and exchange communications with the people and the family is a beautiful thing. There is always constant movement of boats, so in case of an emergency you are in the city of Iquitos. Also you can go upriver via the paved path to the town of Tamshiyacu, which has a nice hospital.*

Ribereño narratives of change also describe the transition from unpaved paths to paved sidewalks. This is especially found in the narratives of the people of the Centro Industrial community, who previously had to walk half a kilometre through a swamp to reach the port. Now a new route has promoted more traffic from the Maniti River to the Amazon River, and increased immigration.

The narrative of community changes such as land tenure, local policies and transportation is reflected in the landscape, and it is therefore an important source of environmental history information. However, the ultimate decisions over the landscape are made by the family or the individual. Families and individuals have dealt with the cultural and environmental changes in particular

ways. As the markets change and natural resources become scarce, individuals have experimented with different alternatives to deal with the changing conditions. These alternative pathways for interacting with the landscape are in some instances creative land use practices, full of ecological and marketing knowledge. These personal and family decisions about how to interact with the landscape are presented throughout the local narrative.

Other social changes such as trends in religion and problems of alcoholism are commonly part of the local narrative of change at the community, family and individual level. The relationship of these changes to landscape management and environmental change is not yet obvious. Nevertheless, religious disputes and the problems engendered by alcoholism affect community cohesiveness, collective work projects and family interactions. These effects can result in eroded community natural resource management policies.

Every individual has experienced change differently and his or her reactions to history are also inimitable. This is the principal value of oral history, and underlies the observation that personal experiences do not fit into a matrix of possible responses. However, it complicates the presentation of results, as every person not only has exclusive experiences, but also produces a narrative with its own rhythm, tone and set of symbols to describe change. Here I have outlined some of the images of cultural change that are repeated in many narratives and which reflect the common experiences of the region or the community. These are not to be undervalued, as they represent new information and comprise both contradictions and corroborations to official stories of environmental change. Considering these images enables a space for a dialogic process that results in a more comprehensive understanding of Amazonian history in general.

Physical Narrative of Change

Narratives devoted primarily to physical aspects are those that relate to the description of river changes. River dynamism is central to the *ribereño* narrative of environmental change. Descriptions of changes in water flow, flood frequency, erosion, deposition and lake formation are common images of the local narrative of change. These memories are especially valuable for the analysis of landscape change. Locals are the only observers that have registered entire processes of physical change. They have seen how their fields are eroded and how sediment is deposited in new places. All these river changes are continuous and dynamic.

The narratives of river change can be so detailed that through oral history the processes of change can be reconstructed. In contrast, popular scientific methods such as remote sensing cannot observe the entire sequence of transitions. For instance, the first aerial photograph of the Muyuy–Panguana region was taken in 1948. In that year the Panguana river channel spanned a width of 320 m. It now measures 550 m across. From two snapshots, one taken in 1948

and one in 2001, we can describe certain changes in the channel. However, oral history reveals more interesting information. Until the 1960s, or perhaps later, the river could completely dry out during the low water seasons. From local memory we gain an understanding of the channel depth, useful for ecological studies such as metapopulation research or studies of species dispersal between the upland and the islands (Figure 3).

Often embedded in the narrative of physical changes are elements of mythology, like those introduced by Jose in the beginning of the article. These stories are especially told in regions of dynamic changes such as the island archipelago of the Muyuy–Panguana region. Mythological figures like the '*madre de la cocha*' (mother of the lake), an enormous boa-like creature that mainly lives in oxbow lakes, are related to how the local population interprets the creation and destruction of the land by river dynamics.

The traditional stories about mythological creatures linked to the Amazonian landscape are shared not only by indigenous groups and shamans, but also by most Amazonians in rural and urban areas (Slater 2002). The landscape change myths demonstrate the local interpretation of ecosystem dynamics and *ribereños'* appreciation for particular elements of the landscape. The

Figure 3

Sequence of snapshots of the Panguana–Muyuy archipelago
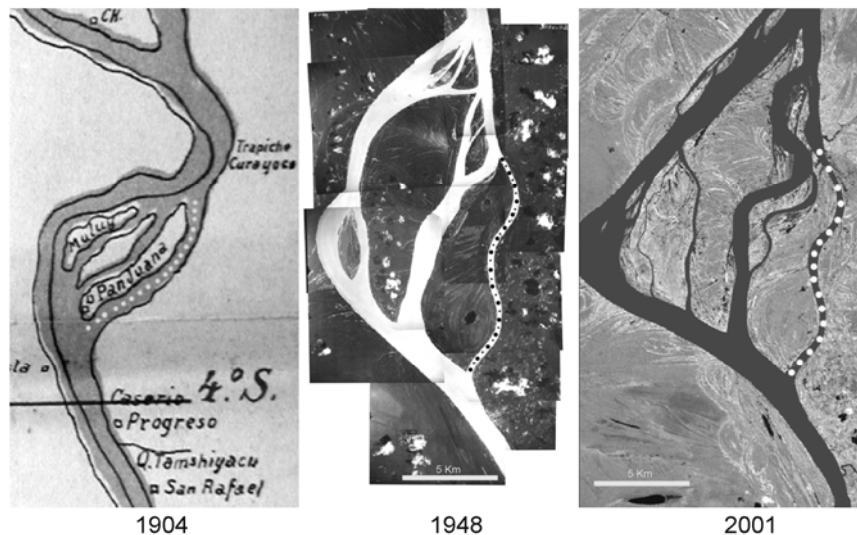
Notes: The first image is a 1904 map by Colonel Portillo, the second is a mosaic of aerial photographs taken in 1948, and the third is a Lansat satellite image taken in 2001. In each image the Panguana channel (marked with a dotted line) appears, yet oral histories suggest that before the 1970s the area used to be dry during the low water season.

Amazon River greatly affects the order by which rural Amazonians organise their life. The river meanders can change direction, destroying land and provoking the emigration of entire communities. It is common, yet daunting to observe that large tracts of forested land start to fall as a result of river erosion. A great thundering noise commences as the mature trees start falling into the water, breaking and pulling down other trees that are connected to them by vines. These types of common changes seem not to elicit myths. However, if a drastic change in landscape is observed, such as the draining of a lake when a natural dam breaks, or if a community has been displaced, myths become more common in the narrative of landscape change.

The prevalence of such myths in the *ribereño* and indigenous communities of the Amazon indicates the challenges of life in the floodplain and the events that most affect Amazonians' livelihood. To us, they can suggest new directions for future research and deeper understanding of the Amazonian floodplain dynamics. After hearing the '*madre de la cocha*' story repeatedly, I became attentive to the environmental features where these mythological events had occurred. I found that these are events that alter the organisation and interactions of many landscape elements including humans, and that they represent alternate succession pathways not described in the scientific literature (Kalliola et al. 1993).

In a way, these myths revealed fundamental dynamics and events that affect the environment. As concluded by Samuel and Thompson (1990) in *The Myths We Live By*, '[Myths] admit to us a rare view of these crucial processes, which we have so far neglected: to the possibility of a better understanding of a continuing struggle over the past'.

The dynamism of the floodplain has daunted explorers and scientists, who are still trying to catalogue its complexities (Raffles 1998). The *ribereño* narrative embraces this complexity. In some instances, it includes precise descriptions of change. In other cases, the narrative of the floodplain's dynamism and its significance in culture–environment relationships is intertwined with mythological figures. Myth can arise alongside a conventional story of succession, or to account for more drastic and inexplicable changes.

Aesthetics and Conservation

The *ribereño* oral narrative reveals how the landscape was before, and depicts how it is now. Through the process of describing the patterns of change and elements in the landscape, the interviewees analyse how they prefer their landscape to look and which elements they value the most. The aesthetic of a landscape is one of the factors determining the planning of communities and the organisation of individual properties. Oral history is especially capable of collecting this type of information, since people are allowed to explore their memories and evaluate their experiences. Through this freedom, preferences and aesthetics can enter the interview.

Each individual has singular aesthetic preferences for the landscape. However, the conservationist's task is to portray the collective landscape arrangement that humans and non-humans deserve. Terborgh (1999) would like extensive forests of the Peruvian Amazon to be safeguarded by elite armed forces. In *Requiem for Nature*, he clearly contrasts the features of a landscape he dislikes with the ones of which he approves. This is the usual narrative of modern conservationist texts. The conservationist will often use published research to argue against or in favour of a certain arrangement of space. No matter how scientific and economic models are used to demonstrate the outcome of each landscape arrangement, the selection of an ideal landscape arrangement is a subjective decision.

Giving space to explore and express individuals' local landscape appreciation is a conservationist effort in its own right. It is a bottom-up approach to conservation. In the excerpts above, *ribereños* use both their firsthand experiences and external sources to define their preferences in the landscape. Although I never asked directly 'which landscape features do you like?' interviewees often presented certain landscape features as aesthetically praiseworthy. Naturally, they were not all of one opinion, but some trends could be observed.

Some of the most cherished memories are those related to orchards, and people describe orchards as beautiful landscapes. The images of animal abundance are also some of those most prized by *ribereños*. Biophilia is present in the local narrative, but it is not only biodiversity or agrodiversity that *ribereños* admire about a landscape. They appreciate the image of extensive sugarcane farms and grasslands. The beaches that appear in the summer are described with great joy. A well-kept soccer field and cleared or paved paths are symbols of a respectable community. Some symbols of disturbance are also admired. Most farmers admire when a forest has been cleared in an organised way and burned properly. Hence the landscape arrangement that contemporary *ribereños* want to conserve cannot be promoted by simple prescriptions, such as the planting of a given species or the farming of something. The landscape that *ribereños* admire is complex and dynamic. To conserve the vistas that *ribereños* prefer requires a landscape approach, a prescription that considers all of the elements and dynamics of human and non-human spaces.

CONCLUSION

Regardless of the way in which the history of the Amazon is told, the stories of its natural resource extraction and its impressive forested frontier are always present. Even the most urban approach to the history of the Amazon touches upon the environmental history of the region (Browder and Godfrey 1997). These descriptions of the culture–nature interaction are also present in cultural expressions such as music and paintings (Santos-Granero and Barclay

2000). Each one presents culture–nature relations in diverse ways. The oral history of Amazonians is not an exception.

The recorded narrative of Amazonians is a profound data set of environmental history and images of culture–environment relations. The images that arise from the narrative are useful for comprehending the processes and historical events that occur in the Amazon landscape at the various social and biological scales. Because oral history allows the interviewees to analyse their experiences, *ribereño* oral history results in a complex set of symbols that express how an individual interprets the landscape, and how he or she evaluates personal interactions with the surrounding landscape. Hence, the *ribereño* oral history is not only useful for understanding ecosystem dynamics and environmental history, but also for promoting a more inclusive conservation agenda for the communities of the Amazon.

Acknowledgements

Notes

1. Names of participants have been changed.
2. The Yacuruna is a mythological figure similar to the pink dolphin of the Amazon: it is a creature that likes to steal young ladies. In this town it has stolen a pot from a woman who was doing laundry at the lake, and has visited some houses. It is a tall, pale creature that wears a hat.
3. *Cetical–cituyal*: vernacular classification of a patch dominated by *Cecropia* sp. and *Heliconia* sp.
4. *Caimitos*: fruits from the *Pouteria caimito* (Sapotaceae) tree.
5. *Taperibas*: fruits from the *Spondias purpurea* (Anacardaceae) tree.
6. *Guabas*: fruits from the *Inga edulis* (Fabaceae) tree.
7. *Zapote*: fruits from the *Matisia cordata* (Bombacaceae) tree.
8. *Huamansamanes*: *Jacaranda copaia* (Bignoniaceae) trees.
9. *Ceticos*: *Cecropia sp.* (Cecropiaceae) trees.
10. *Sancudo caspis*: *Alchornea triplinervia* (Euphorbiaceae) trees.
11. *Rifaris*: trees from the Melastomataceae family, mainly from the genus *Miconia*
12. *Paiche*: *Arapaima gigas* fish.
13. *Gamitana*: *Colossoma macropomum* fish.
14. *Paco*: *Piaractus brachypomus* fish.
15. *Leche caspi*: *Couma macrocarpa* (Apocynaceae) tree.
16. *Mitayos*: fish migrations.

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