Maps, Kn and Terr Intergeneratio

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An important aspect of colonialism is the way in which forms and classes of knowledge, important to members of the subordinated group, are devalued and may be displaced. This process occurs over time, but by looking at different generations in a community that is midway through an intense process of colonization you can get a snapshot view of the process. The information base of an older person is different from that of her or his children, reflecting changing activities and differing ways of life. Looking at territorial knowledge, crucial to defining land rights, I am trying in this article to understand and convey the potential significance of one such snapshot. Working as an intern on a land claim in a specific South American community positioned me as an outside viewer of such a process of inter-generational change as it became manifest in the making of maps.

Background

The Ayoreos are an indigenous group in Eastern Bolivia and Northern Paraguay that is making a *demanda territorial* : basically, a land claim on a very limited scale. Until forty years ago they were nomadic gatherers, hunters and warriors. However, since the 1950s they have been settled into

11 far flung communities by Catholic, Protestant and Baptist missionaries.[1] Today, the basis of their economy is a combination of subsistence farming and wage labour by males, only occasionally supplemented by hunting and gathering activities. The communities range in size from 150 to almost 500 people. Although there are important differences between them, there are certain basic commonalities between the communities: all are very poor and few have any significant economic resources. In particular, despite the widespread redistribution of land under Bolivian land reform since the 1950s, almost none of the communities own land in their own name.[2] The land that was formerly theirs is scattered throughout what is now prized agricultural land. The majority of their former territory is now privately owned or subject to timber concessions.[3]

Two basic rationales exist for recognizing the territorial claims of the Ayoreos or other native groups in a similar situation.[4] The first is historical: recognition would mean a long overdue legalization of a claim that use and occupation of the land have made legitimate over generations. This legalization should protect against the kinds of dispossession that have been a historical norm. The second is future looking: Bolivias indigenous people are among the countrys poorest and, in the absence of other forms of social safety, a more just distribution of land is meant to provide an economic base for healthy subsistence and growth.[5] The demand for territory rather than just land is a demand to be given cultural space, and a demand for control over natural resources and political decision-making as an important part of culture.

Like Canadian land claims, a *demanda territorial* is relatively complicated from a legal point of view. There is no established process for making this kind of demand. However, typically the claims include four components: a sociological survey (including demographics and community histories); a survey of natural resources with some kind of plan for their use; a legal analysis of the ownership and rights in the land being considered; and a detailed, accurate map of the area being claimed. There has to be cooperation between members of the affected communities and professionals from sociology, resource management, and cartography as well as law. Lawyers who participate must be aware of every step in the process since they

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1 J. Reister and B. Suaznabar, *Pueblos Ayoreodes, Chiquitanos, Guarayos* (Santa Cruz: unpublished, 1990) no page numbers.

2 Miguel Aragón, *Informe sobre la propriedad de tierras en comunidades Ayoreodes* (Santa Cruz: unpublished, 1995). See also, A. Zarzyncki Orlow, Estudio de delimitación de areas especiales de comunidades indígenas en el departmento de Santa Cruz (Santa Cruz: Corporacion Regional de Desarrollo de Santa Cruz, 1992).

3 World Bank, Proyecto de Tierras Bajas de Bolivia, *Informe Preliminar Sobre Los Ayoreos* (Santa Cruz: unpublished, 1993).

4 See for example, Confederacion Indígena del Oriente Chaco y Amazonia de Bolivia, *Propuesta de Ley Indígena* (Santa Cruz: CIDOB, 1992); Central de Pueblos Indígenas de Beni, *Hacia una Propuesta Indígena de Decentralización del Estado* (Trinidad: Central de Pueblos Indígenas del Bené / Centro de Investigacíon y Documentacíon por el Desarollo del Bené, 1995).

5 See W.C. Theisenhusen, "Introduction" in *Searching for Agrarian Reform in Latin America* (Routledge Chapman & Hall, 1988); see also *Ley de Reforma Agraria* (02-08-53 / 29-10-56).

generally draft the final demand.

I worked with the Ayoreos in a community called Rinc n del Tigre (Tiger s Lair) in Eastern Bolivia, near the border with Brazil. This remote community is the site of the Ayoreos largest claim: they are trying to establish a claim to some 96,000 hectares of land outside the main agricultural zone in the region. The land they are claiming takes almost half an hour to fly over in a small plane; to drive there takes five days in a land cruiser across the rocky, iron rich pampa. There are few communities anywhere nearby, and you can drive for hours seeing only red earth, waist high scrubby trees and occasionally, fabulous wildlife condors, armadillos, and road runners as well as endless varieties of parrot. Because of its isolation, there is relatively little geographic information about the area, and no established markers to use in determining precise coordinates of the boundaries of such a claim.

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For indigenous people claiming land in South America, one of the biggest advances in the last five to ten years has been the development and widespread use of a technology called Global Positioning System (GPS).[6] A type of geographic information system, GPS is a network of 24 satellites circling the earth that allows someone on the ground to identify their precise location on the globe with only an inexpensive hand-held receiver. The receiver gets signals from three satellites from which it can calculate its position, which it displays as a set of coordinates.[7] This technology can be used to make maps that are accurate to a distance of less than 30 metres.[8] In the context of land claims, the great advance of GPS is that it allows for a very participatory method of recording the extent of indigenous territory and patterns of land use in terms that external authorities, like governments and local land title offices, recognize as legitimate. Native people s

6 See P.E. Zorogastua Cruz, "La Percepción Remota en la Evaluación de los Recursos y La Demarcación de Territorios," in *Reconocimiento y Demarcación de Territorios Indígenas en la Amazonia - Las Experienceias de los Paises en la Región* (Bogota: CEREC & Fundacion Gaia, 1993).

7 P. Poole, *Indigenous Peoples, Mapping & Biodiversity Conservation: An Analysis of Current Activities and Opportunities for Applying Geomatics Technologies* (Washington: Biodiversity Support Program Discussion Paper Series, 1995).

8 Poole, see note 7 at 10. Higher accuracy — to as low as one meter — is possible through a process called "differential GPS," where images from four satellites are used. See also, D. Sprague and A. Woo, *Global Positioning System Fundamentals* (Austin: Trimble Navigation Ltd., 1993).

knowledge of their own land is applied by having indigenous guides (or cartographers) identify the limits of their territory, based on their actual on-the-ground patterns of use.[9]

On balance, the technology was very impressive: highly portable, it allowed our cartographers to record information generated by our guides and produce the maps that will be essential to the claim. But unfortunately, I was left with some severe doubts about the way we applied the technology and our original use of it to delineate territorial boundaries. The ostensibly technical tool of a map, transformed through legal processes, actually defines the rights and ownership of a whole community. It is crucial to ensure that the whole people s knowledge is involved.

Snapshot

The guides who went with our topographers had been chosen by the communities as particularly responsible people who were to be trusted in the important matter of defining their territory. Each man is a fluent Spanish speaker who reads and writes, and for that reason, has taken a leadership role in community affairs. Such a role more and more often requires contact with outside organizations to seek funds, market crafts, or get legal recognition for different community structures. None of them were older than 25; all of them had been educated in their community at the Spanish unilingual school run by the Baptist mission.

Unfortunately, in the course of learning those skills, the traditional education of Ayoreo youths has fallen behind. These men have spent much more time farming than their fathers, and they only hunt for something closer to sport than subsistence. They are simply unfamiliar with the hunting and collecting routes which were used extensively right through the early years of settlement by the missions. Although the Ayoreos are living within the area they once used, unlike many native groups they do not identify it as an ancestral homeland. Further, the missionary presence has significantly affected not only where they live, but the relationship between land use and the livelihood of the Ayoreos as well (that is, cultivation versus nomadic gathering and hunting, concentrated communities rather than scattered extended family groups, distant cropland versus nearby gardens,

9 For an excellent book on the significance of Native-controlled cartography, see H. Brody, *Maps & Dreams* (Vancouver: Douglas & McIntyre, 1981), based on his experiences in the Canadian arctic.

increasing wage labour for the mission itself). As a result of all these factors, our guides misidentified the outer limits of their traditional territory. They effectively short-changed themselves of up to 12,000 hectares of land, the area between the perimeter identified by our guides and the set boundaries of their nearest neighbour. Because of the extent of the mistake, it was noticed before we left the community and the outside border of the territory became a subject of discussion in a community meeting.[10]

The neighbouring proprietor, an engineer with a mining concession, had proposed to the missionaries that he and the Ayoreos should split the difference and divide in half the 12,000 hectare parcel of land that was not, until we arrived, considered anybody s property not his, not the missions, nor the Ayoreos . His proposal became the accepted basis for a slightly surreal discussion in the meeting. Rather than attempting to define what they considered their territory, the communities discussed whether it was worthwhile to include in the claim the 6,000 odd hectares that had been offered, and whether it would be necessary to go out again to use the GPS system to mark the boundary suggested by the engineer.

The apparent arbitrariness of the decision was quite shocking and left me disoriented. I had assumed that the strength of GPS was that it would allow native groups to define what was theirs, rather than accepting whatever offer traditionally powerful interests chose to make them. It seemed the system had failed and I was at a loss as to why, and depressed over the apparent absence of a knowledge that I had assumed was vested in the community.

In the end, the engineer s proposal was accepted. It was determined that sufficient information to delineate the community s territory could be gathered if the topographers flew over the two geographic points that marked the straight line proposed by the engineer.

Though the Ayoreos agreed on the boundary, for me, that was not the main event in the meeting. At one particular moment, a speaker stood up, went to the outline map we had been using, and made a speech in Ayoreo explaining the exact entitlement of their community to the land being discussed. He is just under sixty years of age, and had been considered an adult in the time before the communities were settled. Well into the 1970s,

10 Notes by author, Rincón del Tigre, Bolivia, 23 July 1995.

he had provided the family s protein by bringing home game. He explained that the area being discussed also has amethysts in their rock formations. He stood before us, in a very worn suit of scotch plaid and a baseball cap, and with his finger traced an irregular loop on the map representing his old collecting trail. The path extended significantly beyond the boundary that was accepted in the meeting. His loop stretched into the territory the engineer considers unequivocally his. The surface area he delimited although not on the same places on the map was approximately the same area as that accepted in the community meeting.

This incident proved to me that the knowledge I had assumed would be applied in the use of the GPS was indeed within the community; but, logically enough, it is not evenly distributed across the generations. On one hand, the very structure of Ayoreo communities like many others with an oral tradition is premised on elders accumulation of a special wisdom throughout their years of experience. However, the methods of transmitting that knowledge must remain relatively intact. Settlement, the involvement of churches, and interaction with national society means that there is a fundamental interference with the way knowledge is both transmitted and valued in communities.

At the level of knowledge transmission, education in Ayoreo communities was mostly informal and relied on the simple mechanism of always having the children near their parents.[11] The supposedly beneficial advent of schooling in their communities ruptured this pattern of knowledge transmission by separating kids from their families for most of the day. Perhaps more insidiously, the type of knowledge that is being deemed useful and valuable is also changing. Clearly, there are excellent reasons why young people might want to learn more about the world outside their formerly isolated communities. Such knowledge is eminently practical, as so-called modernization seems inevitable and the presence of colonial institutions like the church and unilingual education is a fact. Logically, it is the young people who are learning more of this new kind of knowledge. But unfortunately, this pattern can present a serious disjunction between the roles of older and younger people as representatives in their communities,[12] and a displacement of traditional knowledge. Because it is not recorded, some

The trinity of accuracy, cert participation – meaningful if is not used in allows relative realization of geographical

11 Reister and Suaznabar, see note 1.

12 See for example, W. Molina, *Informe preliminar sobre los nuevos lideres jovenes en el TIPNIS* (Trinidad: unpublished, 1995); A. Triana Antorveza, "El Estado y El Derecho En Frente a los Indigenas," in *Entre la Ley y Costumbre* (Mexico City: Instituto Indigenista Interamericano / Instituto Interamericano de Derechos Humanos, 1993).

communities like Rinc n del Tigre are facing a permanent loss of knowledge that, in this case very literally, is their birthright.

Obviously, this discovery has some significant implications in terms of the manner in which territory is claimed.

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Implications

First, there are clear implications at the level of practice. Teams who are working together to develop land claims should be very careful when they are selecting their guides. At the very least, they should attempt to ensure that different generations are represented so as to capture the differing areas of knowledge between young and old. The trinity of GPS virtues in this context accuracy, certainty and participation are not meaningful if the technology is not used in a way that allows relatively full realization of the community's geographical knowledge.

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When the *James Bay and Northern Quebec Agreement* was signed in 1975, it was one of the first comprehensive bilateral land claim settlements between government and a native group, the Inuit of Nunavik, and it set a precedent world-wide. Since that time, Canadian native groups have played a leading role in using geographic information in both land claims and the resource management activities that follow the resolution of such claims. Mapping has played a crucial role in the development of information self-sufficiency by the Inuit, who have been described as information-rich as a culture but data poor as a political group. [13] Generating their own maps has been a key project for indigenous people in trying to control their knowledge base and ensure that such information is not treated merely as a historical relic but as a vital part of present day culture to be respected and revitalized.

One important difference between the Canadian and Amazonian projects is the scale of the resources invested in such projects. It is self-evident

13 W.B. Kemp and L.F. Brooke, "Towards Information Self-Sufficiency: The Nunavik Inuit gather information on ecology and land use" (1995) 18:4 Cultural Survival Quarterly 26.

that there is more money available in Canada. However, other factors may be relevant. In Canada, it is notable that projects undertaken by the aboriginal peoples themselves, over an extended period of time, had a tendency to emphasize the preliminary step of identifying elders or harvesters or knowledgeable people as the key aspect of transforming knowledge into data. Interestingly, in documented Canadian community-run mapping projects there is a clear acknowledgement that focusing on the information held by community *elders* specifically is an important part of the political struggle to maintain culture and land base.[14]

Outside lawyers, involved in preparing land claims here or in the South, must recognize that native participation in all aspects of the claim must amount to more than the provision of information. Specifically, it has to include a definition of what data will be relevant and how such data can effectively be collected using the differing skills of different members of the community.

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A second consequence following from the snapshot is a reminder of the potential economic value of indigenous knowledge. Seeing disrupted knowledge transmission result in a loss of land for the Ayoreos provides a literal and relatively dramatic way to value in economic terms some indirect effects of colonization that usually are considered too diffuse to measure. In the context of a *demanda territorial*, the application of territorial knowledge corresponds directly to the potential extent of the land that is to form the communities future economic and cultural base. The debate over the economic value of indigenous knowledge is not limited to the land claims context, but is raised most often in the context of intellectual property.[15] In that framework, the value of local knowledge is often marginalized due to the technical nature and

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14 Poole, see note 7 at 37-46; also "Geomatics: Who needs it?" (1995) 18:4 Cultural Survival Quarterly (special issue on geographic information systems); and D. Denniston, "Defending the Land with Maps" in *World Watch* (Washington: Worldwatch Institute, 1994).

15 See, *People, Plants and Patents: The Impact of Intellectual Property on Diversity, Conservation, Trade and Rural Society* (Ottawa: International Development Resource Centre, 1994); or, T. Greaves, ed., *Intellectual Property Rights for Indigenous Peoples, A Source Book* (Oklahoma City: Society for Applied Anthropology, 1994).

ideological limits of the discipline.[16] In the area of land rights, there are fewer ideological barriers to recognizing the value of indigenous knowledge. Territorial information, gathered with the participation of native people and codified into maps, is used as evidence of occupation and use, which gives rise to a claim to land title that has widespread theoretical acceptance.

Third, the emphasis on the accuracy of map-making in this context often is a demand for primarily historical accuracy. It can lead to an emphasis on traditional boundaries rather than on the adequacy of the proposed land as an economic base.[17] In this case, a successful process would result in ten of the eleven Ayoreo communities (excluding Rinc n) not owning sufficient land to maintain a nomadic lifestyle without degrading their natural resources. Yet, they have not moved fully into the patterns of settled agriculture of other native groups in the area.[18] I do not deny that the historical claim is crucially important, especially given potentially conflicting claims of native groups and later settlers, and the historicist bias of the court system.[19] But as this snapshot should suggest, given that both young and old will be affected by the outcome of such a process, and that inevitably, needs of individuals and groups within the communities will differ, any historical claim should be considered as well from the point of view of the present, and should represent a claim for a future that is culturally, economically, and ecologically sustainable.

Afterword

The future of the Ayoreos land claims in Rinc n del Tigre is not entirely certain. There is funding for two non-governmental organizations and a government department to see through the process of preparing a land claim for them. However, the biggest stumbling blocks are not related so much to the knowledge within the community like mapping or reconstructing a community history as they are to the bureaucratic processes outside it, through which every claim must pass. Even though no one is opposing the claim in this case, the Ayoreos know it has been five years since any community title has been recognized by the responsible body, the Agrarian Reform Office. They will be joining a long line of indigenous peoples across the Americas who are waiting until the governments under which they live are ready to recognize and affirm their rights. ■

16 For example, under existing intellectual property law, what can be patented (and therefore remunerated) is determined on the basis of the so-called value added to a natural resource by individual innovation. Collective knowledge (usually held by elders) about, say, a plant's usefulness for healing does not change the plant in any way, and results in non-compensation for native groups even where they have identified a use generally capitalized upon by western scientists.

17 This problem is by no means universal. In many cases, this map-making technology is just used to define broadly drawn territorial limits with *certainty*. An example is the application of GPS to delimit the indigenous territories in the east-central Bolivian departments of Beni and Cochabamba. See: C. Navia Ribera in *Reconocimiento y Demarcación de Territorios Territorios Indígenas en la Amazonia - Las Experienceias de los Paises en la Región*, see note 6; or K.A.Jarvis and A.M. Stearman "Geomatics and Political Empowerment: The Yuqui: '...that master tool, geography's perfection, the map'" (1995) 18:4 Cultural Survival Quarterly 58.

18 Based on figures contained in: Coordinación Ayoreode Nacional del Oriente de Bolivia, *Demanda Territorial Preliminar* (Santa Cruz: CIDOB, 1993).

19 A particularly egregious example of this bias would be the test in Canadian land claims jurisprudence, which only recognized native proprietorship if it has been established "since time immemorial". See comments of Justice Lambert in *Delgamuukw v. R.* (1993), 104 Dominion Law Reports (4th) 470 (British Columbia Court of Appeal) at 630-631.