

**DEVELOPMENT ASSISTANCE
AMONG JALQ'A PAPEROS IN POTOSI, BOLIVIA:
FROM TROJAN HORSE TOWARD STRENGTHENED RESILIENCE**

by

SUSAN WALSH

**A thesis presented to the University of Manitoba
in partial fulfillment of the requirements for the
degree of Doctor of Philosophy in Anthropology**

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FACULTY OF GRADUATE STUDIES

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ABSTRACT

Quietly, albeit unintentionally, non-governmental organizations (NGOs) at work among Indigenous potato farmers or *paperos* in Bolivia's Southern Cordillera are contributing to the erosion of community resilience. Acting within a largely positivistic development enterprise built on a deficit theory of social change (Rahnema 1992), a homogenizing, utilitarian concept of producer, and a belief in the superiority of Western understanding (Escobar 1995; Purcell 1998; Sachs 1992), these NGOs have failed to take seriously the very different worldviews and knowledge systems of their indigenous *beneficiaries*. Nor have they attempted to reconcile the inherent power imbalances in their interaction that always privilege the Western point of view. Their aid strategies are consequently weakening centuries-old resilience systems that have enabled survival in places where the natural world usually has the upper hand, the conservation of plant genetic resources being one of the most important examples.

Through a first-hand treatment of the world of aid within the little-studied world of Quechua-speaking *Jalq'a paperos* of Northern Potosí, this dissertation challenges the ethnocentric promotion of Western *capacity-building* programs – from literacy to agricultural extension training – as the foundation for the achievement of sustainable livelihoods among rural peoples on the margins. It also turns the deficit – the poor are lacking – argument for development intervention on its head by arguing that it is not what indigenous peoples lack but what they already have or had that requires our support. Finally, the thesis proposes a new, albeit work-in-progress, model for interaction between development actors in the centre and those on the periphery: intercultural reciprocity, building on the Andean concept of interdependency and mutual gain. Based on participatory action research principles, the Latin American notion of interculturalism, and cooperative conflict transformation methods, it is a composite model of cooperation that considers attention to cultural identity and to the insider-outsider dialectic as fundamental for just and meaningful social change.

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- **The people of Chimpa Rodeo and Mojón, Bolivia.**

They not only put up with a *gringa* peering into their lives, they also shared their time, traditions and points of view to a degree well beyond my expectations. There are too many individuals to list their names but I would like to offer a special thanks to Don Angel Yucra, his wife Doña Desideria, and their eldest daughter Lucia for their especially warm hospitality when I needed a place to stay for a few days at a time. When I think back on my time in Chimpa Rodeo, their wide and welcoming smiles are still vivid. Leandro Choque was also very helpful with interviews and translation. In Mojón, the then local schoolteacher, Doña Elvira Soto was a great support, also sharing her food, lodging and friendship. Our conversations about the challenges of life for rural people often lasted late into the night. Widowed young with two children, her life has been difficult. Her courage as a single mother expected to teach six grades in one crowded classroom was inspiring.

- **The local union authorities in Chimpa Rodeo and Mojón.**

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CHAPTER ONE

INTRODUCTION: THE PARADOX OF WESTERN AID

Where is the wisdom that was lost in knowledge?
Where is the knowledge that was lost in information?

T.S. Elliot¹

True knowledge is full of politics and dreams and actually arises from rebellious struggles to change the world and ourselves... [W]hen people are masters of inquiry – the owners of the questions under study – their research becomes a means of taking risks, of expelling visible and invisible oppressors, and of producing actions for transformation.

Paulo Freire²

Paperos for the City

The Andean highlands of Western South America are an imposing, at times merciless, landscape of arched-backed ridges, yawning gullies, sculpted rock faces, quilted shades of brown that turn green, purple, red and gold at harvest, and ribbon-thin roads connecting scattered villages of adobe. When the early morning sun creeps over and down sleepy mountain ridges, their beauty takes your breath away. But their splendor reaches beyond a commanding appearance. Residents can also lay claim to one of the world's greatest shares of cultivated plants (Zimmerer 1996:10). The Indigenous farmers of Ecuadorian, Peruvian and Bolivian highland hillsides and valleys are particularly distinguished for their stewardship of potato diversity. Scientists with the

¹ Cited by the Reverend George Carey, past Archbishop of Canterbury, *Tapestry*, CBC Radio, December 1, 2002.

² Freire 1997: foreword.

International Potato Center (CIP) in Lima, Peru have gathered an ex-situ collection of over 4000 Andean native potato varieties (Hermann 2002:2). Thanks to the innovation and skill of generations of Quechua and Aymara-speaking indigenous farm families, the plant genetics resources essential to the long-term survival of the potato species are also alive and well in-situ. In Bolivia, for example, researchers have found over a hundred cultivated varieties in farmers' fields (June 13, 2000 interview with Research Associate, Alberto Salas, CIP, Lima, Peru). With protein values as high as 12.9%, these native potato varieties have held the highest proportion of protein for potatoes anywhere in the world (Dandler and Sage 1985:130). Pigments including yellow carotenoids and red and purple anthocyanins are nutritionally important antioxidants (Hermann 2002:2) and their amino acids, vitamin C and calcium levels are also significant sources of nutrition for their consumers (FAO1995:34; CIP 2002:1). As late as the mid 1980s Andean potatoes were heralded as one of the world's most nutritious sources of plant food for human consumption (Horton and Fano 1985:32 in Dandler and Sage 1985:126).

Within Bolivia's southern cordillera ranges are thousands of potato farming communities who share this proud heritage. Fewer and fewer of the Llamero and Jalq'a farm families of this *puna baja*³ – lower highlands between 3100 and 3600 meters above sea level – can individually speak of an abundance of potato biodiversity. Still, most families maintain at least a handful of native varieties for consumption, with some boasting between twenty to seventy varieties⁴. The potato fields of Bolivia's most southern department, Potosi, are in fact considered to be one of the centers of biodiversity for the potato species (Programa de Autodesarrollo Campesino 1996:11). In Ravelo, Potosi, one of four regional municipalities within the department's northern province (political district) of Chayanta and home to the two Quechua-speaking Jalq'a communities that welcomed my research, agronomist Regis Cepeda catalogued as many as 53 varieties (Cepeda 1995).

Ravelo's Jalq'a farmers, however, are not generally recognized for their contribution to the domestication and conservation of this primordial foodstuff. They are known

³ Spanish and Quechua words will be italicized throughout this document. Italics will also be used to indicate emphasis or to denote the use of a popular expression.

⁴ Don Emiliiano Colque of Tarhueque, Potosi, just outside the village of Ocuri, displayed over 60 varieties during an agricultural fair in near-by Qhara-Qhara. He explained that it was through the collection of varieties from neighbours and from farmers within nearby communities that he was able to gather the tubers for his diverse harvest (in conversation, June 24, 2000).

instead for their production of commercial potatoes that help to feed the roughly 120,000 residents of the country's constitutional capital, Sucre, a three-hour potato truck ride from Ravelo's municipal capital, also called Ravelo. On Sucre streets, Ravelo's rural folk are often referred to as *los paperos* – the potato producers. Ironically, though not surprisingly, Ravelo's commercial potatoes appear to be of greater benefit to their urban consumers than to their producers. Nicole Bezençon (1994:1), a Swiss anthropologist who, in the early nineties, studied Ravelo producers on behalf of the country's national potato research centre, Proyecto de Investigación de Papas (PROINPA), argued, in fact, that the surpluses from Ravelo farms serve to maintain the non-productive classes of the city. As with capital-driven frontier development elsewhere, and like that of their displaced *compañeros* from the silver and tin mines that once drew the wealthy to Potosí (see Nash 1979), the story of the peoples of this region appears to be a "rags to riches" tale with a nasty twist. The rich of the metropolis maintain their comforts because there is a hinterland of producers "in rags" (see Frank 1966; Wallerstein 1974; Watkins 1977).

Nor is this purposeful exploitation unique to the 20th century Indigenous farmers of Ravelo's home province of Chayanta. As British anthropologist Tristan Platt (1982:28) discovered during his research on the Macha from a sister municipality, during the 18th and 19th centuries, a greater Chayanta – consisting of five provinces that now form Northern Potosí – was the principal supplier of wheat⁵ for three of the nation's departments: Potosí, Oruru and La Paz. Chayanta's Indigenous farmers were in fact among the richest in Bolivia until the termination of protectionist policies at the end of the 19th century. Lower priced Chilean and Peruvian wheat imports grabbed important shares of the market. This liberalization of trade, Platt notes, together with the sacrifice of this region's agricultural wealth to the highly extractive mining industry, contributed to the area's rapid return to subsistence. Platt's (1982:14) analysis of past policies captures the long-held pattern of manipulation that informs the situation today:

The marginalization of the regional *ayllus* [indigenous socio-economic and political organizational structures] was the work of the government and does not represent an original state of premercantile poverty... [T]he *ayllus* of Northern Potosí, along with other regions, were

⁵ Wheat actually occupies the largest surface of cultivated crops in Ravelo, amounting to 38%. However, because its surpluses for commercial sales are much lower than those of potatoes, it is considered to be the second most important crop (CIPRES-IPTK 1997:60).

sacrificed to ensure the survival of the “nation” and the dominion of the ‘*capa criollas*’ [land owners] who managed the state apparatus.

The family farm economy in Ravelo’s 104 villages is thus best described as one of subsistence and semi-subsistence agriculture (Bezençon 1994). There are a small number of successful petty commodity producers on primary transportation routes. But they are the notable exceptions. For most of Ravelo’s indigenous farm families cash earned from market sales is rarely enough to cover costly agricultural inputs let alone supplies for school-aged children, health care needs, or household goods which cannot be produced at home, such as the kerosene to fuel make-shift lamps when darkness falls. It is not, therefore, their direct link to the market economy that sustains Ravelo’s *Jalq'a*. Rather, generations of risk minimization and resilience strategies have kept these subsistence communities and their people alive. But the conditions of their semi-subsistence now are such that migration to cities for cash remuneration, however temporary and integrated into their resilience strategies, is growing more and more important and frequent. And permanent migration to urban slums or rainforest settlements is also on the rise. According to the 1992 national census, population growth in Ravelo was a negative 1.25% (Municipal Development Plan, Ravelo 1997:19).

Census data for Ravelo highlight, in fact, living conditions that are consistently among the lowest in a country considered to be the poorest in South America. The official poverty rate – representing an income below a satisfactory standard for the department – is 98.63% (Quiroga 1999:364). The United Nations’ Development Program’s (UNDP) human development index (HDI), a development-needs assessment indicator based on life expectancy, literacy and educational enrolment, and GDP per capita (UNDP 2000:144) is 0.258, placing Ravelo near the very bottom of the heap of the nation’s municipalities, 305th out of 311 (UDAPSO cited in NOVIB, 1999:6; IPTK 1999b:14). If Ravelo were a country, it would fall alongside nations within the UNDP’s lowest HDI category. Given Western perspectives on sufficiency and *development* guiding these indicators (see Sahlins 1972:1-39; reprinted in Rahnema 1999:3-21), and the considerable challenges of data collection among the scattered communities of the Andean highlands, one should treat such figures with a healthy skepticism. But even a quick trip through the region makes it all too clear that people are undernourished, housing is sub-standard, life expectancy is five years lower than the national average

(NOVIB, 1999:6) and formal education is generally of poor quality, inaccessible for most after the fifth grade. In 1997 roughly 70% of the municipality's citizens were unable to read or write either their mother tongue or Spanish (Quiroga 1999:364). Only 34% of the members of the 25 families surveyed in some detail for this thesis had a comfortable command of their country's language of power and leverage.

In addition to food policies and commercial production practices favouring urban consumers, factors offered to explain deteriorated community and livelihood conditions over the past half century include the climatic extremes attributed to global warming, competition from foreign potato producers, the growing popularity of rice and pasta, the collapse of mining-community markets, and *minifundismo* – land shortages and soil infertility due to the land's continuous sub-division among male consanguineal kin. At the heart of this last problem, of course, lies Bolivia's 1952 Agrarian Reform Act. In one paradoxical stroke of the legislator's pen, this legislation put an end to both the quasi-feudal land holdings of colonial rule and to the territorial usufruct rights within the indigenous *ayllu* governance system. Ignoring long-held indigenous practices, such as the rotation of shared lands and collective land-management strategies for example, legislators sanctioned individual land titles and the concept of individual peasant producers (NOVIB 1998:16; Rivera 1992:153; Platt 1982:18-21; Uriost 1981:167). Nor should one be too quick to accept the *minifundismo* argument as a principal factor to explain the land's increasing inability to sustain its population. As Platt (1982:43) has argued in his studies of petty commodity production in this region, given that "land fragmentation is counterbalanced by mechanisms of reunification [within a dual ecological landholding system]... the fragmentation of holdings should not be labeled too hastily as *minifundismo*. Still, *minifundismo* continues to be the most commonly cited reason for permanent urban migration, a convenient rationale perhaps for policy makers anxious to pass the buck onto the farmers themselves.

Problem Statement and Objectives

My research among Jalq'a farmers in Ravelo during the year 2000 suggests that there has been and continues to be yet another contributor to the marginalization and impoverishment of Indigenous farmers whose ancestors gave the world its forth most important food crop (FAO 1995:4). It is a hidden element that deepens the irony in their

story. It is the factor of central concern to this study. This dissertation will argue that the humanitarian development assistance delivered through non-governmental organizations (NGOs) has also been quietly but steadily eroding the inherent strengths of these indigenous *papero* communities. Although largely welcomed, well-intentioned, well-funded, and achieving some of the stated goals, particularly when it comes to infrastructure development and community organizing based on Western structures of governance, the agencies that deliver these programs have approached the development process in ways that ultimately weaken the capacity of these indigenous farmers to live independent, healthy and productive lives on their ancestral lands. Acting within a largely positivistic development enterprise built on a deficit theory of social change (Rahnema 1992), a homogenizing, utilitarian concept of producer and a belief in the superiority of Western understanding (Escobar 1993/1995; Purcell 1998; Kulchyski 1993; Sachs 1992), these NGOs to varying degrees have failed to take seriously the very different worldviews and knowledge systems of their indigenous *beneficiaries*. Nor have they reconciled the inherent power imbalances that always privilege the Western point of view. In so-doing, they have paid insufficient attention to centuries-old resilience strategies that have enabled survival in places where the natural world usually has the upper hand, the conservation of plant genetic resources being one of the most fundamental of these strategies.

Through a first-hand treatment of the world of aid within the world of Quechua-speaking *Jalq'a* farmers of Northern Potosí, and more particularly the *capacity-building* packages that are attached to this assistance, this dissertation endeavours, therefore, to meet three inter-related objectives. First, it seeks to challenge the ethnocentric promotion of Western *capacity-building* programs – from literacy to agricultural extension training – as *the* foundation for the achievement of sustainable livelihoods among peoples on the margins of the dominant society. Second, it will attempt to turn the deficit – the poor are lacking – argument for development intervention on its head by arguing that it is not what indigenous peoples lack but what they already have or had that requires our support. Finally, it will support a new, albeit work-in-progress, model for interaction between development actors in the centre and those on the periphery, one that considers attention to cultural identity as a fundamental component for meaningful social change and tries to reconcile the insider-outsider dialectic in an effort to achieve a

fair and manageable way forward. Based on participatory action research principles, the Latin American concept of *interculturalidad* or interculturalism and cooperative conflict resolution methods, it is a composite model of cooperation that I will label intercultural reciprocity, building on the Andean concept of mutual exchange and gain.

Organization of the Thesis

Including this introductory chapter, the thesis is divided into seven chapters. To lay the theoretical foundation for the dissertation's critique of Western-driven *capacity-building* programs within indigenous communities, Chapter Two examines literature addressing the global presence and contributions of indigenous peoples, divergent perspectives about occidental and indigenous knowledge transmission, and theory about the management of complex ecological systems. More specifically, the chapter begins with a concise overview of the diversity and status of indigenous peoples and the significance of their skills in natural resource management, food production, and biodiversity conservation. It then moves on to a more in-depth review of scholarship that explores occidental views about development and knowledge transmission, teasing out a connectionist hypothesis about the way humans learn that is more compatible with Indigenous knowledge systems. Since the ability to read and write is considered by many development experts to be an essential first step for community development (see Hinzen 1994; Reder 1994; UNESCO 1996), with literacy education frequently the first component of Western *capacity-building* programs, the chapter highlights scholarship on literacy and western education to illustrate the dominant orientation of mainstream approaches to development among poor and marginalized peoples. The chapter concludes with an introduction to resilience theory, given the compatibility of this theory with the chapter's alternative hypothesis about human cognition and the theory's ability to inform our understanding of indigenous people's adaptive natural resources management systems.

Chapter Three continues the critique of Western approaches to Indigenous knowledge and to interaction with indigenous peoples through a careful examination of occidental approaches used to understand and chart indigenous culture and development needs, especially within the discipline hosting my research – development anthropology. The chapter starts with an abridged history of the emergence of

development anthropology, emphasizing, in particular, post-modern critique of development anthropology's contribution to the West's ethnocentric understanding of *the other* featured in Chapter Two. Alternative research principles and approaches that represent more encouraging relationships with people's on the fringes of the dominant power and ideological structures are reviewed next, laying the groundwork for the dissertation's promotion of intercultural reciprocity as a more hopeful model for interaction between Western and Indigenous peoples. This chapter's critical discussion of conventional and alternative research models that influenced my options and choices as a graduate student also sets the stage for my description of my field research methods in the next chapter.

Chapter Four, then, presents and assesses my field methods and experience, framed first by a concise discussion of contextual issues that affected my research. This chapter also addresses methodological validity and information reliability, questions of special importance to research that is openly ideological and based on participants' recollections and reporting.

Having presented a theoretical and methodological context for my enquiry, Chapter Five and Six move the dissertation into my experience and applied analysis. Chapter Five provides an ethnographic sketch of the hitherto little studied Quechua-speaking Jalq'a people of Chayanta, zooming in on the two communities whose residents welcomed my research – Chimpa Rodeo and Mojón. Careful attention is paid to the intimate connection between embedded cultural beliefs and practices and the centuries old resilience strategies that have enabled these communities and people to survive on unforgiving landscapes.

Chapter Six moves on to an overview of external development intervention within their municipality and then within their particular communities. It highlights the programming and capacity-building orientation of three of the more influential non-governmental actors active within the area, one Bolivian, one international and one multilateral. Central to this discussion are my reflections about how their respective programs have treated the knowledge and resilience strategies of their Indigenous participants, including biodiversity conservation, possibly the most important over the long term. Community perspectives gleaned during a Participatory Rural Appraisal workshop conducted within each community and from twenty-five detailed household

benchmark surveys are woven into this analysis, as is reporting on potato varieties salvaged but threatened in the face of significant pressures to adopt varietal hitchhikers from outside the region. In an attempt to provide the reader with a glimpse of my experience in the story of these Jalq'a farmers, I have also stitched two appendices on to this study that contain selected photographs and journal entries. These snapshots and field notes (see Appendices One and Two) tell a tale that complements the more academic presentation of information within Chapters Five and Six.

Chapter Seven draws the dissertation to a close. I take stock of the extent to which my research addressed the objectives I had set for the dissertation, and link my field-based findings to the theoretical framework established in the early chapters. The case for a broader-based questioning of Western approaches to development intervention within indigenous communities is also reiterated, particularly given the potential harm of such intervention on local knowledge systems and resiliency. Advocating intercultural reciprocity as a more promising model for the negotiation of just and ecologically viable livelihoods within the indigenous communities I studied, I conclude with recommendations for both the Jalq'a participants in my study and the non-governmental organizations championing their cause.

CHAPTER TWO

BEYOND EXOTIC FOOTNOTES: RESILIENT WAYS OF KNOWING

Many people have said that Indigenous peoples are myths of the past, ruins that have died. But the Indigenous community is not a vestige of the past, nor is it a myth. It is full of vitality and has a course and a future. It has much wisdom and richness to contribute. They have not killed us and they will not kill us now. We are stepping forth to say, "No, we are here. We live."

Roberta Menchu, 1992 Nobel Peace Prize Winner (Maybury Lewis 1992:ix)

If technological civilization starts to understand the richness and complexity of Indigenous knowledge, *the Indians could be equalled to any human being*, and no longer seen just an exotic footnote of history.

Daniel Matenho Cabixi, Paraci Indian, *Report to the Secretariat of the United Nations Conference on Environment and Development*, 1992 (Rural Advancement Foundation [RAFI] 1995:x)

Estimates vary on the number of culturally distinct ethnic communities in the world today¹. However, most research suggests that there are around three hundred million Indigenous people who, like Menchu, might beg to differ with the prophets of their demise (Gray 1999:61; Kemp 1993:xvi). Approximately four percent of the global population (Burger 1990:1), Indigenous peoples make up between seventy and eighty percent of the world's cultural diversity (Gray 1999:61) and span twenty percent of the earth's land (Kemp 1993:xvi) in over seventy countries (Burger 1990:1). Unfortunately, if current trends are not reversed, humanity might not witness Menchu's vision of a strong future for Indigenous peoples. In his moving portrait of Indigenous communities from

¹ Dinah Skelton of the Santa Clara University School of Law (1993) claims there are approximately 15,000 culturally-distinct ethnic communities in the world, cited in RAFI 1995:7; Julian Burger (1990:180) reports some 5000 distinct Indigenous peoples.

around the world, *Endangered Peoples*, Art Davidson (1993:18) notes, "In our time as never before, distinct cultures are vanishing almost overnight". In Brazil, for example, more than ninety percent of the country's Indigenous tribes have disappeared since the turn of the century. In Guatemala, 45,000 Indian women have been widowed over the past 20 years while the 13,000 Penan people living within the forests of Sarawak in 1970 have declined to fewer than 500 just two and a half decades later (Davidson 1993:1-2). Davidson's observation is sad commentary on our confused priorities:

All around the world, enlightened people anxiously follow the fate of sea turtles, condors, spotted owls, black rhinos, and hundreds of other endangered species. But they forget – or never realize – that whole peoples can be endangered too. Before our eyes, human diversity is vanishing, but few seem to notice.

Davidson's reminder of our endangered human diversity, like Menchu's refusal to go *gently into that good night*, also speaks to an ideology that has largely dismissed the Indigenous peoples whose subsistence lifestyles and alternative knowledge systems have influenced a stewardship of the land considerably more resilient than that in the West. Divided into four segments, this chapter begins to lay the theoretical foundation for the dissertation's critique of this ethnocentric, often intentional neglect. The first segment offers a concise account of the global presence and contributions of Indigenous peoples, particularly to the conservation of our planet's biological diversity and ability to deal with the unexpected. The next two segments explore conventional and alternative hypotheses about occidental and Indigenous knowledge systems and knowledge transmission. Scholarship that examines literacy's starring role in the development equation is given special attention, since the literature on attitudes and approaches to literacy highlights especially well the dialectic between Western and Indigenous worldviews. This literacy material also offers important insights into the broader Western discourse about community development and knowledge systems that build sustainable livelihood. The chapter concludes with a final segment on resilience theory, given the theory's compatibility with the chapter's alternative hypothesis about knowledge transmission and its ability to inform our understanding of Indigenous people's management of complex ecosystems.

Hardly Exotic Footnotes

The tropical and sub-tropical homes of the majority of Indigenous peoples in Africa, Asia and Latin America possess over 90 percent of the earth's remaining biological diversity. There is more bio-diversity on a tiny island off the coast of Panama than there is in the entire British Isles, and a 15-hectare plot in Borneo has more woody species than all of North America. Eighty percent of the world's population depends on Indigenous knowledge to meet their medicinal needs, and at least half rely on Indigenous knowledge and crops for food supplies (RAFI 1995:v-vi). Staple foods on North Americans' tables, such as corn and potatoes, originated in the fields of Central and South American communities where you can still find numerous varieties of each in one small farmer's field. We can thank Ethiopian highlanders for the morning cup of coffee that gets us through our day. Germplasm from varieties nurtured in Indigenous fields today continue to sustain local production on northern farms. As researchers from the International Institute for Environment and Development (IIED) reported, "much of the genetic diversity on which the improvement and future sustainability of agriculture must depend is found in the Third World in and around farmers' fields, in village forests, and in grazing lands" (Scoones et al. 1992:192).

Some dismiss the championing of Indigenous communion with nature as wishful thinking, a naive nostalgia for an exotic, simpler way of life. Anthropologists like Martin (1984) argue against the conservationist orientation of Indigenous peoples claiming, for example, that the mass extinction of North American megafauna during the Pleistocene era were caused by reckless over hunting, not by climate change (in Posey 1999:6). He and Klein (1984), as well as Diamond (1997) and Flannery (1996), likewise argue that it is the ancestors of today's traditional peoples in New Zealand, Madagascar and Australia who must bear the blame for the extinction of considerable wildlife on these islands and archipelagos (in Posey 1999:6). Pearson takes a slightly different tack to deliver a similar message. The conservationist ethic is not unique to Indigenous peoples. "Almost every culture", he declares, "has restrictions, religiously or socially sanctioned, on the use of certain plants, animals, or limitations on hunting and gathering activities ...during certain periods" (Pearson 1989 in Muchena and Vanek 1995:509).

The advancement of an essentialist, homogenized characterization of Indigenous peoples as ecologically noble savages is not useful. Native American scientists, Pierotti and Wildcatt's (1999:193) thoughts on this matter are especially insightful:

Those wanting to embrace the comfortable notion and romantic image of the Rousseauian 'noble savage' will be disappointed. Living with nature has little to do with the often voiced 'love of nature', 'closeness to nature' or desire to 'commune with nature' one hears today. Living with nature is very different from 'conservation' of nature. Those who wish to 'conserve' nature still feel that they are in control of nature, and that nature should be conserved only insofar as it benefits humans, either economically or spiritually. It is crucial to realize that nature exists on its own terms, and that non-humans have their own responses for existence, independent of human interpretation... [T]hose who desire to dance with the wolves must first learn to live with them.

There is certainly convincing logic, however, in the notion that people who depend on the land for their survival will pay extremely close attention to the elements that foster environmental sustainability, particularly, as Posey notes, when they enjoy territorial security and sufficient local autonomy (1999:6). Burchard (1976:374) makes a similar point in his study of Peruvian farmers living in the highlands:

Peoples living in diversified mountain ecosystems ... must develop technologies and strategies which take advantage of the various aspects of diversity so that the necessities of life are incoming throughout the year – year after year – and to overcome both expected and unexpected shortfalls".

Consumers of the products of industrial capitalism generally do not experience and therefore grasp the need for species diversity. But if their life depended on diversity, they would surely pay attention. Too, as Lewis (1993:5) reminds us, the prerogative of not practicing what we preach is not limited to urban-industrialized societies. Indigenous peoples are not a cultural monolith. They also have the right to poor leadership and shortsighted decisions. But the fact that Indigenous communities today possess most of the diversity that still exists in nature (Posey 1999:6) is certainly fodder for Indigenous peoples and researchers to celebrate their unique contribution to biodiversity, whatever the motivation.

Nor is the biological bounty within Indigenous territory simply the fruit of good fortune or serendipity. A day spent with Indigenous farmers, particularly Indigenous women farmers who represent the majority of plant breeders and original pharmacists worldwide (Mooney 1992; Shiva 1992; Quiroz 1994) quickly corrects such misconception. Hard work and skilled plant selection, breeding and pruning techniques, as well as soil conservation and diverse land-use strategies are just some of the *first* farmers' expertise² – complex ecosystem management many NGO-sponsored ecological agriculture programs in the South have copied (See Alteri 2002). In their useful overview of sustainable agriculture practices, *Farming for the Future*, Reijntjes, Haverkort and Walters-Bayer (1992:4) offer numerous examples of complex and intricate methods that illustrate, the authors suggest, "how well farmers in the tropics learned to manipulate and derive advantage from local resources and natural processes, applying principles of agroecology without knowing that the term exists". The Indigenous small-producers, Lamola (1992) observed, often employ their own taxonomy, encourage introgression, select, hybridize, field test, record data and name their varieties. About the experimentation and innovation of Andean Indigenous potato farmers, Rhoades and Bebbington (1995:300) report:

Farmers are keen to seek practical solutions to old and new problems through experimentation. In fact, propensity to experiment and try new ideas may be more pronounced in areas of diversified agriculture and poor extension services than in developed countries with less diversification and excellent research and extension facilities.

Dandler and Sage (1985:128) offer this assessment of the sophistication of their potato production systems:

Andean peasants possess a comprehensive understanding of their environment which incorporate complex classification schemes for soils, domesticated and non-domesticated plants...[T]he recognition and classification of cultivars includes the selection and maintenance of hundreds of clonal varieties of potatoes, each attributed with certain characteristics, such as colour, taste, consistency, seed viability, resistance to frost and various diseases, storage quality, growing season and others...[S]uch practices of crop and varietal diversity

² Serendipity, of course, does play a role in scientific discovery, as most Nobel Prize winners will readily attest.

represent one of a number of risk minimization or counter-seasonability strategies designed to reduce the environmental vulnerability to which agriculture is subject.

About the Andean highlanders' strategy to enhance the diversity of their potato crops, Van der Ploeg (1993:211) adds:

Moreover, they consciously aim at increasing this variety by (1) trying to have their plots on different ecological 'floors' (Mayer 1981) and (2) by trying to improve each plot, not along standardized lines, but by following the specific set of conditions each plot presents to them.

When describing the very detailed and thorough steps American Indians developed to process bitter and initially poisonous manioc (also known as cassava) in order to consume it, David Maybury Lewis (1992:47) puts to rest any notion of historical accident:

It is hard to imagine the kind of accident that would have led to the invention of a process like this one. Indians biting into manioc tubers and falling dead? Others stamping on the tubers in a rage? Biting them for revenge? Discovering that without their juices they were harmless? Hardly. The secrets of manioc were obviously discovered in the course of patient exploration and systematic experimentation with the environment that has been going on for hundreds of years among the inhabitants of the rainforest.

In 1986, the World Commission of Environment and Development paid long overdue tribute to the sophistication of Indigenous peoples' knowledge:

These communities are the repositories of vast accumulations of traditional knowledge and experience that links humanity and its ancient origins. Their disappearance is a loss for the larger society, which could learn a great deal from their traditional skills in sustainably managing very complex ecological systems. It is a terrible irony that as formal development reaches more deeply into rain forests, deserts and other isolated environments, it tends to destroy the only cultures that have proved able to thrive in these environments. (in Knudtson and Suzuki 1997:18)

Formal development's reach into the rainforest and deserts is more than an irony bred of good intention or a desire to modernize. Development choices in these fragile ecosystems reflect big business interests as well. Better known enterprises range from huge timber and forest product industries to large-scale ranching and industrial agricultural businesses, such as the all too familiar sugarcane and banana plantations. Less understood is the extent to which the knowledge of isolated peoples is fuelling

multi-billion dollar genetics supply industries ranging from food and pharmaceuticals to cosmetics, chemicals, paper products, energy and other manufacturing (RAFI 1995:4). In 1985, the estimated market value of plant-based medicines sold in developed countries was \$43 billion and growing (Principe 1989 in Posey and Dutfield 1996:34). Evidence of the decline in the variety of medical plants prompted pharmaceutical industry analysts then to warn that each medicinal plant lost in the rainforest could lose drug firms sales of more than \$200 million (Posey and Dutfield 1996:34). A decade later, the Rural Advancement Foundation estimated that germplasm collected in developing countries – in the fields of local farmers, many of whom are first or Indigenous farmers – was worth at least \$5 billion per annum to developed country crop production (RAFI 1995:7). Not surprisingly, the contribution of those who bred and nurtured these plants for thousands of years has largely been obscured. Profit sharing is not considered, leading key defenders of the intellectual integrity³ of Indigenous peoples to coin the term “biopiracy” (RAFI 1993).

While hushed, industry's appreciation of the knowledge of Indigenous peoples appears, in fact, to be a long-standing one. Writing about the Cree in the Pharmaceutical Journal and Transaction in 1884, E. Holmes observed:

Although the list of *materia medica* is a small one there is a remarkable judgement shown in the choice of remedies. Thus the bark of the juniper and the Canada balsam tree are doubtless as good an application to wounds as a people unversed in antiseptic and ignorant to bacteria could devise. The use of *Loelilia* as an emetic and of *Iris versicolor* as a cholagogue and purgative approaches closely to the practices of more civilized nations. (in Densmore 1974:332)

For years, in fact, this well-kept secret has led the Western botanist and biological ethnographer deep into tropical jungle to mine the knowledge of its residents, a process these researchers prefer to call bioprospecting. One recent venture into the rainforest of Western Samoa by an American from Brigham Young University in Utah, Dr. Paul Cox,

³ Defending the intellectual integrity of Indigenous peoples should not be confused with the promotion of intellectual property rights for Indigenous peoples based on the patent system. Critics of the patenting of any life forms, like Pat Mooney and Hope Shand of The ETC Group (formerly RAFI), argue vigorously against this approach on four grounds: because the patenting of living organisms is essentially immoral; because the patent system generally places those without significant financial resources at a serious disadvantage; because patent controls can often kill innovation; and finally, because it would be difficult for any Indigenous group in a single country to claim proprietary ownership over processes and products that might well be found elsewhere as well. (Personal communication with Mooney, August 1, 2001).

was particularly fortuitous for its sponsors. On behalf of the National Cancer Institute (NCI), Cox collected and patented a rainforest species called *homolanthus nutans*, which has yielded anti-HIV compounds (Posey and Dutfield 1996:35). Local healers regularly used this species to treat yellow fever. The announcement of this *discovery* notes:

This is a recent example of pharmaceutical research and development led by traditional knowledge. It provides us with a clear-cut example of traditional knowledge leading to what may be called a commercial product. Without traditional knowledge, it is likely that the NCI would never have learned of this plant. (Posey and Dutfield 1996:35)

Nor, one is tempted to add in light of the emphasis on the commercial product, would they have reaped the benefits of corporate courting and sponsorship such *discovery* inevitably favours. The Samoans who advised Professor Cox were not named in the patent. While recognition of the importance of Indigenous knowledge is growing⁴, and in a token way publicly acknowledged, an equitable sharing of the bounty that this knowledge creates has not followed suit.

Still more disturbing is the accelerated decline in the biological diversity essential both to the survival of Indigenous communities and to our ever-fragile planet. More plant species are lost per week today than were lost during the preceding three centuries (RAFI 1995:20). More than 75% of crop varieties have disappeared (Intermediate Technology Development Group [ITDG] 1996:i) and crop genetic diversity is vanishing at the rate of about 2% per year (Mooney 2001:9). Half the breeds of many domestic animals have been lost, with the world's seventeen main fishing grounds now being fished at or above their sustainable limits (Lewis 1996:i). The tropical forests that breathe oxygen into our atmosphere are disappearing at a rate of almost 1% per annum (Mooney 2001:9). In her contribution to Daryl Posey's (1999) thoughtful compendium on biodiversity's cultural and spiritual values, Ruth Lilongula, a Guruvat from the Solomon Islands, captures clearly and forcefully the significance of this loss for Indigenous peoples:

⁴ For an extensive listing of publications that address Indigenous peoples' contributions to biodiversity, see I. Scoones, I. Melnyk, and J. Pretty (compilers), *The Hidden Harvest*. London: International Institute for Environment and Development, 1992. See also *The Indigenous Knowledge and Development Monitor* web site: www.nuffic.nl/ciran/ikdm/index.html.

Biodiversity means our identity and culture survives, and it is also the very core of our existence and life itself. There is no parameter of biodiversity that is divorced from our identity, heritage and pride. There is no separation between our people and biodiversity. We are all part and parcel of one system. (Posey 1999:164)

Maybury Lewis' (1992:50) perspective on the implications of this loss for the Western world is also on the mark. "What we are witnessing makes the burning of the library of ancient Alexandria look insignificant by comparison. It is as if the greatest medical library in the world is burning faster than we can read its contents, which we have just begun to catalogue". Participants from industry, government and non-governmental organizations who, throughout 1992, met in a unique attempt to build a common strategy against this erosion gone amuck, had this dire warning:

We fear that the world's capacity to respond to change is being lost – all too quietly and all too quickly. We can hardly imagine a greater threat to the future well being of the people of the world than the loss of genetic variability of plants. (Keystone Dialogue 1992 in Nazarea 1998:3)

Biological uniformity clearly does not serve our global interests well. The damage wrought to plants and people by the lightning spread of the Irish potato blight in the mid-nineteenth century is one of our most notorious examples of the hard lessons such uniformity teaches.⁵ A more recent, though less devastating, example is the corn leaf blight that spread from the Southern United States in the 1970s. Lives were spared but losses to the American maize industry were in the millions of dollars (Committee on Genetic Vulnerability of Major Crops 1972:1). On-going evidence of the cost of such uniformity includes the Northern food producers' almost complete dependency on expensive and often poisonous fertilizers, pesticides and herbicides that not only rob the soil of its natural defenses but can endanger human health as well.

The mammoth decline in the planet's biological diversity has thus sounded a piercing wake up call for development scholars and decision-makers with the power to influence the building of a more sustainable future. In an effort to find a workable path

⁵ For a thorough discussion of the impact of biological uniformity on crop loss, see Committee on Genetic Vulnerability of Major Crops. *Genetic Vulnerability of Major Crops*, Washington: National Academy of Sciences, 1972.

forward, a growing number are turning their attention to the knowledge of Indigenous peoples. There is now a substantive body of literature examining the alternative knowledge systems of Indigenous peoples, most reflecting an urgent quest to understand and conserve ways of knowing and doing that might reverse, or at least tame, trends that threaten our planet's survival.

Conservation lenses have often focused on the technical foundation of Indigenous knowledge. Plant breeding, soil use strategies and resource management practices have been carefully scrutinized in an effort to identify place-specific techniques with universal value (Brokensha, Warren and Werner 1980; Brush and Guillet 1985; Lamola 1992; Rentjes et al. 1992; Thurston and Parker 1995; Niemeijer 1995; Rusten and Gold 1995; Rhoades and Bebbington 1995; Quiroz 1996). Through "ex-situ" (institutional) and "in-situ" (on farm) plant breeding programs, international, national and community-based seed banks have emerged in an attempt to conserve the products of this knowledge for generations to come, although there is good reason to question the cost-benefit of ex-situ collections (see Zimmerer 1996).

Political strategies and the networking needed to strengthen public policy in favour of Indigenous land, resource and food production rights have also garnered the support of academics and policy makers and advocacy groups (Gari 2000, Myr 1998; Altieri and Yurjevic 1995, Von Liebenstein, Slikkerveer and Warren 1995; Fowler and Mooney 1990; Brush 1989). Increasing commoditization and pirating of plant genetic resources, discussed above, have no doubt inspired this offense (RAFI 1995; Posey and Dutfield 1996; Grenier 1998).

A growing body of thoughtful research also explores the ideological and cultural factors that nurture biodiversity, culturally-embedded factors such as the close connection between knowledge, practice, place, and belief systems within Indigenous natural resource management (AGRUCO 1998; Berkes 1999; Posey 1999; Slikkerveer 1999; Laird 1999; Nazarea 1999; Haverkort and Hiemstra 1999; 1996). Many of these researchers are now taking an even broader approach to biodiversity conservation, recognizing what the Declaration of Belem (1988) coined as the "inextricable link"

between biological diversity and cultural diversity (Posey 1999).⁶ To conserve biological diversity, we need to preserve human diversity and the alternative knowledge systems inherent in such diversity. There is, however, yet another paradox in the West's reach into Indigenous territory and knowledge systems. The mining of Indigenous knowledge to conserve it may well be contributing to its demise.

Documentation, validation and what Arun Agrawal calls "scientization" of Indigenous knowledge for development purposes often sanitizes it, changing its meaning and value, particularly to the owners of that knowledge (Agrawal 1999; 1996). Thrupp (1989) also argues that "in the legitimization of local knowledge there is a danger of 'scientising' it; merely incorporating it into pre-existing and unquestioned frames of reference and thereby enhancing the ability to appropriate it and use it as an instrument of oppression and exploitation" (Thrupp 1989 in Titilola and Marsden 1993:500). Ellen (1998:239) specifies the approach that is most problematic: "The knowledge is largely 'classificatory knowledge', usually lexically grounded, and the organization of categories imputed to be 'Indigenous' is not always recognizable to local people because of their radically abstract re-presentation". One characteristic clearly absent in this sanitized, generalized version of Indigenous knowledge is its less tangible, spiritual dimension. Indigenous scholar, Leanne Simpson, consequently questions the right and ability of outside researchers to "construct" Indigenous knowledge (Simpson 1999).

Warren, in contrast, cautions against the double standard the reluctance to document indigenous knowledge can invoke. Knowledge generated through global knowledge systems, he argues, will always be privileged over Indigenous knowledge systems (Warren 1993). At the very least, as Sillitoe (1998:230) suggests, "it is necessary to abandon assumptions that we can record and document Indigenous knowledge and pass it 'up' to interested parties as technological packages are passed "down" to beneficiaries". However, as suggested earlier, within the mainstream academic and development community, abandonment of this arrogance has been hesitant and tentative, with only a minority demonstrating genuine interest in alternative approaches. Indeed, western governance and scientific systems reveal agendas and

⁶ Many of these scholars also defend their inextricable link to language diversity (Maffi 1998; 1999; Sampar 2001). Most would agree that language erosion is a symptom of cultural erosion and consequently biodiversity erosion. However, as this dissertation argues, language retrieval in itself will be insufficient if there is not the opportunity to practice that knowledge.

perspectives that are often antithetical to Indigenous ways. Knowledge extraction and the “top-down” imposition of Western prescriptions for social change continue to represent the norm as demonstrated in the ensuing exploration of the “sacred cow” of occidental development programming: literacy education.

Literacy for Sustainable Development

We told them [the Iroquois] that we know all things through written documents. These savages asked ‘Before you came to the lands where we live, did you rightly know that we were here?’ We were obliged to say no. ‘Then you don’t know all things through books, and they didn’t tell you everything’.

Louis Hennepin, 1626-1701 (Grafton 1992:intro.)

Reading and writing should not only lead to elementary general knowledge but to training for work, increased productivity, a greater participation in civic life and a better understanding of the surrounding world, and should ultimately open the way to *basic human knowledge*.

World Conference of Ministers of Education on the Eradication of Literacy, Teheran, 1965 (Downing 1987:41)

Another advantage of education, particularly for Indigenous peoples, is realized in the farming sector... [N]ot only does schooling produce cognitive skills which make it easier for farmers to seek, find and manage information about agricultural technologies, but it also helps farmers better manage inputs, command higher prices for their products, pay lower prices for their inputs and better cope with political and legal matters.

World Bank Regional and Sectoral Study 1994 (Citation of Godoy 1992 in Psacharopoulos and Patrinos 1994:15)

Plus ça change, plus c'est la même chose! To use another well-worn expression, it doesn't take a rocket scientist to recognize that since Louis Hennepin's 17th century adventures in the *New World*, Western thinking about the primacy of occidental literacy and education and the *backwardness* of peoples outside the mainstream knowledge system has not shifted dramatically. Indeed, belief in the superiority of an educational

and technological knowledge system that produces Western "rocket scientists" lies at the heart of this ethnocentrism. While Hennepin's admission implies that some have long questioned such arrogance, with few exceptions the belief in the centrality of Western literacy and occidental-style education as a cornerstone for sustainable development has remained unchallenged. Leading into International Literacy Year and the International Literacy Decade in 1990, the United Nations Educational, Scientific and Cultural Organization (UNESCO) defined a literate person to be one who, among other skills, would be able "to use reading, writing and calculation for his own and the community's development" (Hinzen 1994:215). The International Literacy Year goal proposed to launch the decade was "the elimination of illiteracy by the year 2000." Decision-makers settled on massive reduction versus its elimination, having understood the impracticality of complete eradication. But like popular vaccination programs of the day, governments were called upon to pledge significant resources to fight this widespread *disease* (Hinzen 1994:217).

Multilateral and government institutions have not been alone in their promotion of reading and writing and technical training as essential components for meaningful development. Most non-governmental organizations (NGOs) and social action groups charged with the task of assisting marginalized communities to grow self-reliant have long considered Western literacy training and capacity building to be critical to a community's struggle for power, justice and equality. The benefits are thought to be numerous, with literate, trained members of these communities at a clear advantage in defining their path to full and meaningful citizenship. In the Andean region where I conducted my field-based research, literacy is often considered to be *the* foundation of the learning process (Graff 1994 in Aikman 1999:21). A growing number of critics have stepped forward to challenge this narrow definition and resolute faith in Western literacy (Graff 1994, 1986; Street 1993; Reder 1994; Roburn 1994; Kelder 1996; Aikman 1999; McGovern 1999). But the majority of mainstream development thinkers continue to ignore what Graff calls the literacy "myths associated with social and economic progress, political democracy, social and educational mobility and the development of cognitive skills" (Graff 1986:61).

In his thoughtful presentation about the scholarship on literacy to participants in the 1996 World Conference on Literacy, Richard Kelder (1996:1) commented: "reviewing the

research literature in literacy studies demands infinite patience to deconstruct the multi-layered meanings of the concept of literacy as well as a critical temperament to determine what is significant from what is not." The literature is indeed vast, with theories hotly contested, often contradictory, always thought-provoking. As Henry Graff (1986:61) astutely reminds us, "the concept of literacy has historically represented and continues to represent different things to people". Researcher bias must be considered carefully. The famous case in anthropological literature of Redfield and Lewis, whereby each anthropologist presented a completely opposing view of the same villagers, demands a rigorous analysis of the perspectives and experiences of those analyzing and transmitting the information (Kater 1984:20). Kelder (1996:2) finally cautioned his audience not to speak too "knowingly or confidently about what literacy is". Kelder would likely agree, however, that a popular conception of literacy as an abstract set of reading and writing skills or abilities that exist independently of any context has, until very recently, shaped many of the approaches to its instruction and dissemination. This view of literacy has contributed to a "deficit" model in educational and social systems (Kelder, 1996; Giroux, 1987; Walsh, 1991), what Stephen Reder (1994:33) has coined as the dipstick model:⁷

Literacy is thought of as something people carry around in their heads from setting to setting, from task to task. This skills orientation is often expressed as a "dipstick" model of literacy assessment and instruction, in which the individual's head can be opened up, a linear instrument inserted (the dipstick), and a measurement taken (the individual's literacy "level"). If there is not enough literacy inside, it is assumed more can be added through additional formal instruction.

Though seemingly value neutral and objective, the definition of literacy as the mastery of reading, writing and counting is rooted in an instrumental development paradigm that separates knowledge from an individual's actions, experience and social context. Individuals and societies are labeled as inadequate when they do not contain enough of the valued product (Kelder 1996:3). In line with postmodern critics of Western knowledge production and occidental approaches to international development (Escobar 1999, 1995, 1994; Illich 1999; McGovern 1999; Rahnema and Bawtree 1997, Sachs 1992, Rockhill 1987), Kelder (1996:3) suggests that this deficit model "rationalizes social

⁷ See Lithman (circa 1990:6-10) for a good overview of occidental interest in literacy education.

and economic inequity as well as class stratification as an inevitable and objective outcome of the sorting process of the education system". Attacking the utilitarian orientation and its link to capitalist ideology, Henry Giroux's (1987:3) critique is still more biting:

Literacy is associated with the transmission and mastery of a unitary Western tradition based on the virtues of hard work, industry, respect for family, institutional authority and an unquestioning respect for the nation... [L]iteracy becomes pedagogy of chauvinism dressed up in the lingo of Great Books.

UNESCO's 1996-2001 strategic plan, for example, cites the elimination of illiteracy among both youth and adults as one of its top priorities, since the absence of literacy is the "main obstacle to development" (UNESCO, 1996:15). The United Nations Development Program's (UNDP) 1997 study on good governance also makes their deficit perspective quite clear:

Better educated and trained people have a stronger appreciation for the environmental resources and greater ability to protect and regenerate them... [P]rimary and secondary education create access to opportunity and can increase labour productivity by increasing people's willingness and capacity to learn. (1997:11)

Not surprisingly, their annual, global index on human development (HDI) includes literacy levels combined with school enrolment rates as one of the three assessment variables (UNDP 2000). World Bank researchers similarly cite Godoy's marriage of education with enhanced environmental stewardship. "Schooling", Godoy insisted, "produces cognitive skills which make it easier for farmers to seek, find and manage information" (Godoy 1992 in Psacharopoulos and Patrinos, 1994:15). The Tzetsals of Mexico, able to recognize more than 1200 species of plants (Altieri 1999:292) but unable to read and write text, would undoubtedly find this declaration rather amusing.

NGOs generally thought to have a closer, less paternalistic link to marginalized groups, have not been immune to this "deficit" reasoning. NGO-sponsored literacy programs, while attempting to respect cultural difference, diversity and more equitable learning systems, also demonstrate faith in Western literacy training as an essential ingredient for broader community organizing and social change work. An excerpt from a newspaper article praising the results of an NGO literacy program in Nepal exemplifies the underlying message often passed on to participants:

Kahili Gurung, who has completed the literacy class, says she was living in the darkness until six months ago; but now she has been encouraged to move forward after she has been able to read and write. (Katmandu Post, June 12, 1997)

In his presentation to NGO colleagues attending a literacy conference, Heribert Hinzen (1994:214) of the Institute for International Cooperation of the German Adult Education Association, lashed out at this unquestioning complacency about the benefits of literacy programming:

Do we, as adult and literacy educators, involved in planning, coordination and research, take a critical look at our work or do we prefer repeating old slogans and reinforcing myths and wishful thinking?

Reminding listeners that the majority of people in Europe were illiterate at the start of the industrial revolution, with compulsory education and literacy carried out after significant developments in industry and trade took place, Hinzen (1994:219) went on to suggest that to "see literacy as a prerequisite and panacea for all related problems is a dangerous misunderstanding". He cited several cases from Asia and Africa where literacy did not dramatically alter the situation of poor and disadvantaged people. One Indian example is representative. Several years after the completion of an NGO-sponsored literacy program intended to help participants ward off the exploitation of unscrupulous money-lenders and corrupt landowners, improve agricultural practices and raise their status, money lending practices had not changed significantly. Only 3% of those questioned noted any improvement in farming and only 4% reported an increase in status (Hinzen 1994:221). It is possible that the implementation of the literacy training program was wanting, accounting for its limited impact. Other less tangible benefits like the opportunity to meet and interact regularly – a first step to organizing – might also have been reason enough for investment in this programming. But Hinzen's findings suggest that in this Indian village, as in others profiled, literacy programming for the marginalized had little lasting impact on the social change process.

In addition to automatically equating literacy with positive change, NGOs also favour literacy programming for very pragmatic reasons. It is easier to communicate with people who can read, write and use the occidental logic staff understand. NGOs, like governments, also consistently draw literate minorities into leadership positions because

these skills facilitate the NGO's ability to get the job done faster and more efficiently. A community's natural but illiterate leaders are thereby often overlooked. It is also fairly common to discover that the same literate individuals have been trained over and over again by several development agencies, emerging as an elite of comparatively affluent NGO promoters with closer ties, at times, to their NGO benefactors than to their communities.

For Westerners seeking first class citizenship within the dominant industrial order and new information age, there are undoubtedly many examples of literacy programs that have helped to strengthen community-based decision-making as well as individual self-confidence and opportunity. But the research which has influenced this analysis strongly suggests that a decontextualized approach to literacy and a singular definition focusing on the ability to read, write and compute have consistently let the marginalized down and isolated those outside of, or uncomfortable with, the dominant ideology (Reder 1994; Osborne 1996; Kater 1984; Graff 1886; Ferdman and Weber 1994; Heath 1986a and b; Ogbu, 1987; McLaughlin 1994). Graff (1986:64) again reminds us, "neither writing or printing alone are agents of social change".

To be fair, most multilateral institutions and NGOs today have moved beyond strictly utilitarian definitions of literacy to recognize the wider ideological constructs shaping the educational enterprise. They now champion literacy as a basic human right and emphasize programming that integrates cultural content and critical thinking into the curriculum. A new emphasis on literacy training in one's mother tongue reflects this new attention to culture, although the actual techniques used to teach literacy skills have not shifted substantially. UNESCO policies, for example, stress the contribution literacy makes to "the liberation of man and his full development". Literacy, the organization further insists, creates "the conditions for the acquisition of a critical consciousness of the contradictions of society in which man lives" (Lind 1985:10; on UNESCO, also see Thaman 1993). New Indigenous education studies challenging a mechanistic and singular approach to literacy are chipping away at the foundations of occidental orthodoxy (Kasten 1998; Osborne 1996; Thaman 1994; Lafrance 1994; Watahomigie and Mc Carty 1994; Dick et al. 1994; Fleras 1993; Standing Committee on Aboriginal Affairs 1990; Hampton 1989.) Still, the mastery of the technical skills of reading, writing

and arithmetic are nevertheless considered central to the development of such consciousness and to the transformation of an illiterate's "destiny" (Lind 1985:11).

New approaches towards literacy no doubt pay homage to the inspired but somewhat contradictory writings of Brazilian educator and philosopher, Paulo Freire. His exasperation with the literacy models that taught participants their place within the dominant, oppressive political and socio-economic structure contributed to the publication in 1970 of a liberation pedagogy that struck a responsive chord with disenfranchized groups and progressive educators around the world. A brief review of Freire's key messages seems appropriate now given their relevance to the issue of reading and writing as a prerequisite for skeptical and critical thought.

Drawing on the ideas of social theorists like Gramsci who considered literacy to be a "double-edged sword" which could be wielded both for the purpose of self and social empowerment but also for the perpetuation of relations of repression and domination (Giroux 1987:2), Freire advanced a methodology which offered the marginalized active agency in the social change process. Mechanistic conceptions of adult literacy and a "banking concept" of education, with students the unquestioning receptacles of the teachers view of the world, Freire (1970) argued, domesticated the have-nots to the benefit of the haves. He championed instead a literacy that was both pedagogical and political, based on praxis: reflection, dialectical exchange, class-consciousness, and ultimately democratic transformation for those struggling for a better future. In his words, "acquiring literacy does not involve memorizing sentences, words, or syllables – lifeless objects unconnected to an existential universe – but rather an attitude of creation and re-creation, a self-transformation producing a stance of intervention in one's context" (Freire 1973:48).

Also central to this perspective was Freire's view of knowledge production as a creative and relational act. His writings were reminiscent of, and possibly influenced by, the ideas of Russian educational psychologist, Lev Vygotsky (1929), who pioneered the theory of social constructivism, insisting the meaning was constructed through interaction (Arts in Education 2002). In *Pedagogy of the Oppressed* (1970:58), he wrote:

Knowledge emerges only through intervention and re-invention, through the restless, impatient, continuing, hopeful inquiry men pursue in the world, with the world and with each other.

David Lusted's (1986 in Giroux 1987:18) synthesis of this notion captures Freire's point well:

Knowledge is not produced in the intentions of those who believe they hold it, whether in pen or in the voice. It is produced in the process of interaction, between the writer and reader at the moment of reading, and between teacher and learner at the moment of classroom engagement. Knowledge is not the matter that is offered so much as the matter that is understood. To think of fields of bodies of knowledge as if they are the property of academics and teachers is wrong. It denies an equality in the relations at moments of interaction and falsely privileges one side of the exchange, and what that side "knows", over the other... It's not just that it denies the value of what learners know, which it does, but it misrecognizes the conditions necessary for the kind of learning – critical, engaged, personal, social – called for by the knowledge itself.

Pedagogy as praxis, purposeful, contextual, transformative and socially just education, is an encouraging model for the silenced and oppressed. Like learning styles theory and constructivist education refined in its wake, Freire's *manifesto* was without a doubt a welcomed attack on status quo educational models that dismissed and indeed further marginalized peoples outside the socio-economic and political mainstream. Progressive educators, social activists, development workers, trade unions and other community-based movements eagerly embraced and adapted this method of helping disenfranchized peoples assert their identity and right to take charge of their lives. Freire's participatory methodology and relevance-based curriculum germinated and flowered in literacy programs around the world. For Freire, to read the word was to read the world (Freire and Macedo 1987). But therein lies a critical flaw in his analysis.

Freire places considerable emphasis on language and the written word as a means to develop critical consciousness, contradicting his message about knowledge being produced through interaction. He pays little attention to oral or non-linguistic knowledge transmission that fit so well with his ideas about knowledge as a relational act. Indeed, there is an uncomfortable hint of the "great divide" school of thought that considers reading and writing as *the* stepping-stones to historical sensibility, a consciousness that is in turn a prerequisite for critical, analytical thinking. In his introduction to *Education for Critical Consciousness* (1973), Freire comments:

The dimensionality of time is one of the fundamental discoveries in the history of human culture. In illiterate cultures, the "weight" of

apparently limitless time hindered people from reaching that consciousness of temporality, and thereby achieving a sense of their historical nature. (cited in Roburn 1994:1)

In *Pedagogy of the Oppressed* (1970) he further states, "almost never do they [the oppressed] realize that they too know things they have learned in their relation with the world and with other men" (50) and "individuals who were submerged in reality, merely "feeling" their needs, emerge [when literate] from reality and perceive the causes of their needs" (108).

Freire offered marginalized communities, including Indigenous peoples, a guide to a more relevant, critical and participatory pedagogy and more effective community-change processes. He asked that they explore the reason for their oppression and warned against the assimilationist, conformist motives of much Western-based education. His insistence of the importance of the written word in a world obsessed with the written language of power is understandable and politically astute for Western, urbanized populations. But he paid insufficient attention to alternative modes of knowledge production and transmission in rural societies or to the issue of what happens to that knowledge when transcribed into text. Illiterate peoples are offered literacy as a means to clear the cobwebs of confusion and victimization, unlocking the gate to meaningful development. This assumption brings us full circle to the dominant ideology championing literacy as the key ingredient for critical thinking and sustainable development and to a seminal article linking literacy with skeptical, analytical thinking – "The Consequences of Literacy". Written in the late 1960s by the two major proponents of the autonomous literacy model – Jack Goody and Ian Watt – the article was to feed perspectives about the knowledge and conceptual thinking of Indigenous communities that survive today (Street 1993). Aguirre's recent review (1999) of the 1996 Spanish edition of this work reports, for example: "almost twenty years have passed, but [this work] undoubtedly continues to be of great interest".

The Great Divide

The world is complex, dynamic, multidimensional; the paper is static, flat. How are we to represent the rich visual world of experience and measurement on mere flatland? (Edward Tufte 1990 in Ellerby 2000:21)

Tracing the impact of occidental literacy on knowledge transmission and critical thinking from its earliest Greek origins to its late twentieth century manifestations, "The Consequences of Literacy" advanced that, while it is important to move beyond simplistic and ethnocentric characterization of oral societies as *primitive* and literate societies as *civilized*, clear distinctions between oral and literate societies could be made. Within oral societies, Goody and Watt (1968:30) posited, what an individual remembers tends to be what is of importance in his experience of the main social relationships, with the "whole content of social tradition...held in memory". There is an "unobtrusive adaptation of past traditions to present needs" (49). Consequently, oral cultures have "little perception of the past except in terms of the present" (22). The cultural repertoire of literate societies, on the other hand, has been given permanent form. "They are thus impelled to a much more conscious, comparative and critical attitude to the accepted world. Writing provides an alternative source for the transmission of cultural orientations [and thus] favours awareness of inconsistency" (49). "The annals of a literate society", these scholars assert, "cannot but enforce a more objective recognition of the distinction of what was and what is" (30). Goody and Watt allowed for skepticism in non-literate societies. But they suggested that such skepticism "takes a personal, non-cumulative form; it does not lead to deliberate rejection and re-interpretation of social dogma so much as to a semi-automatic readjustment of belief" (48). Literate societies, however,

...cannot discard, absorb, or transmute the past... [I]nstead their members are faced with permanently recorded versions of the past and its beliefs; and because the past is thus set apart from the present, historical enquiry becomes possible. This in turn encourages skepticism; and skepticism, not only about the legendary past, but also about received ideas about the universe as a whole. From here the next step is to see how to build up and to test alternative explanations; and out of this there arose the kind of logical, specialized, and cumulative intellectual tradition of 16th century Ionia. The kinds of analysis involved in the syllogism, and in the other forms of logical procedure, are clearly dependent upon writing. (Goody and Watt 1968:68)

History replaces myth and there is opportunity for political and intellectual universalism (Shearwood 1987:632).

The presumable lack of elimination of contradictory or contrary evidence within literate societies has its drawbacks, according to Goody and Watt. "No structural amnesia prevents the [literate] individual from participating fully in the total cultural tradition to anything like the extent possible in non-literate societies" (Goody and Watt 1968:57). They were also careful to conclude that writing is an addition, not an alternative, to oral transmission and noted the importance of rejecting any dichotomy based upon the assumption of radical difference between the mental attributes of literate and non-literate peoples (1968:57). But this attempt to acknowledge that the illiterate are not inferior intellectually rings rather hollow in a treatise that otherwise treats non-literate society as homeostatic, homogeneous, simpler, trapped in the present, unable to see the particulars that are critical to rational thinking. The political dimension of discourse and text, the writer's production and management of interpretation and the fact that text often embodies myth are simply ignored. Positivists par excellence within this body of work, they champion literacy as central to abstract thinking and the deductive reasoning process. A literate population enables society to move beyond "its legendary past" to a more sophisticated, objective, critical and dynamic perspective on life and the world. Goody's more recent writing (1994:254) does caution against overstressing the homogeneity of non-literate societies. He nevertheless continues to maintain:

... [T]here is certainly a broad distinction to be made between culture in "simpler" and "complex" societies that relates to their means of communication... [O]ral societies are spared what Benjamin Franklin called "the restless interventions of the printer". They are also spared the *disturbing and creative*⁸ presence of the writer. And the absence of writing clearly has some relation to their homogeneity, since at the very least new forms of knowledge, new symbols, and new meanings are created in this medium that affect the culture in far-reaching ways.

Promotion of the dichotomy between oral and literate societies placed Goody and Watt in illustrious company. Though adamant about the need to recognize the values of different knowledge systems, structural anthropologist Claude Lévis-Strauss considered the merging of myth and history into one and the consequent absence of historical knowledge as one of the distinctive features of *la pensé sauvage* (Goody and Watt 1968:34). *Primitive* peoples, he further suggested, are less prone to engage in analytical reasoning that might question the foundations of their knowledge (Agrawal 1996). Other

intellectual powers behind such theory include Walter Ong and David Olson. In oral cultures, Ong (1982) proposed, the spoken word shapes sound as well as thought processes and the present moment takes precedence over the past. Writing and reading are solitary acts fostering the interior development of thought. Echoing Goody and Watt, Ong (1982 in Kelder 1996:5) further advanced that with the objectification of thought in written language and the development of analytical thought, a skeptical approach to truth and knowledge was created. Olson (1993:177⁹ in Kelder 1996:5) has stated "there seems little doubt that writing and reading played a critical role in producing the shift from thinking about things to thinking about representations of those things".

Within the past two decades, as suggested earlier, several scholars of literacy, culture, knowledge and Indigenous peoples (Street 1994; Bloch 1994, Borofsky, 1994; Vayda,1994; Graff 1986, Heath 1986a) have challenged the writings of Goody, Watt and other likeminded scholars responsible for what Scribner and Cole (1981) coined as the "great divide" theory (Street 1994). Particularly under fire are: the view of Indigenous cultures as one-dimensional and homogeneous; the strict division between oral and literate modes of languages, with literacy contributing to *higher order, rational* thinking; the failure to recognize the central role of power relations and ideological positioning in literacy practices; and last, but in no way least, the emphasis on language and literacy in the transmission of knowledge. In fact, the whole concept of a single literacy based on reading and writing skills has been called into question. Socio-linguist and anthropology critics, such as Street (1994; 1993), Shearwood (1987) Heath (1986), and Graff (1994; 1986) among others, now speak of a "plurality of literacies" and literacy programming that, like Freire's, considers social, political and economic context. Commenting on current trends in anthropology that raise questions about conventional approaches to the study of culture, Brian Street (1993) goes still further. He questions the generally accepted concept of culture itself, particularly the structuralist search for cultural universals and the preoccupation with meaning. Rather than see culture as a noun, Street argues, it should be viewed as a "verb" – the active construction of meaning rather than the "static and reified or normalizing sense in which culture used to be employed" (1991:23). In a similar vein, Robert Borofsky (1994:345) speaks of knowledge

⁸ Italics added.

on a continuum, inviting readers to "rethink what we mean by cultural sharing and diversity, cultural knowledge and knowing, cultural processes in action". "From a developmental perspective," Borofsky posits, "sharing follows from, rather than precedes, the interaction" (1994:345). People don't necessarily interact successfully because they share certain understanding. Rather, they share understanding because they have learned how to interact successfully (345). Like Street, Borofsky regards the "the cultural in motion" (346), challenging the notion of homogeneity, definitiveness and staticity (see also Vadya 1994:320).

Of still greater significance to this thesis, however, is the critique these scholars have of Goody and Watt's emphasis on language and literacy in critical thinking and the transmission of knowledge. As Street (1993:41) reports, "ethnographic accounts make it evident that members of societies with little or no literacy skills can nevertheless perform the complex cognitive processes, achieve the metalinguistic awareness, and perform the logical operations that Goody, Ong, Olson and others would attribute to literate society". We are reminded of Lamola's (1992) study of small-scale Indigenous farmers, who often employ their own taxonomy, encourage introgression, select, hybridize, field test, record data and name their varieties. Reijntjes et al. (1992:4) observed similar examples of the sophistication of Indigenous farming techniques, including classifications of soil and land use that involve an "assessment of soil properties that often goes beyond the inherent fertility to include an assessment of workability and response to amendments". About the Andean farmers he studied, Miguel Altieri (1999:293) advances,

Using their traditional knowledge, Indigenous agriculturalists have met the environmental requirements of their food producing systems by concentrating on key agricultural principles resulting in a myriad of complex agricultural systems. In such systems, the prevalence of diversified crop assemblages is of key importance to peasants as interaction between crops, animals and trees result in beneficial synergism that allow ecosystems to sponsor their own soil fertility, pest control and productivity.

In his critique of Bourdieu's (1980) characterization of Indigenous knowledge as moving "from practice to practice" without theoretical conceptualization, van der Ploeg

⁹ Kelder neglected to provide a full reference to the Olson article in his paper. The article is not included, therefore, in the references section of this study.

(1993:210) counters that there is theory supporting the practice. But this theory, he insists,

...is organized in a way that markedly differs from scientific discourse. The syntax, for instance, is not the nomological one of science; the scope is not a presupposed universe but one specific to the localized labour process itself. Legitimization is not sought in the construction of laws, but in the coincidence with perspectives and interest, which again are perceived as part of the locality... plots are observed, interpreted, evaluated, cultivated, and improved by means of an impressive cluster of bipolar and rather metaphorical concepts...the concepts overlap not in accidental but in strategic ways.

Attention to principles operating within the local context versus fixed, universal structures and laws undoubtedly contributes to Indigenous peoples' recognition of and rapid response to interconnected and ever-changing patterns. This dynamic labour process that van der Ploeg (1993:209) refers to as *art de localité*, borrowing Mendas' concept (1970), presupposes a continuous interpretation and evaluation of the on-going process of production so as to enable intervention at any given moment. Permanent interaction between "mental" and "manual" labour (1993:209) and careful attention to process versus final product might help to explain what Gadgil et al. (1993:151) consider to be Indigenous peoples' superior capacity to manage complex ecosystems. One of the strongest critics of the notion of culture and knowledge being inseparably linked to language, literacy and linear thought processes is Marxist anthropologist, Maurice Bloch (1994). His defiance of orthodox views on concept formation and knowledge production merits detailed consideration.

Bloch (1994:277) cites the work of cognitive psychologists such as Fillmore (1975), Rosch (1977) and E.E. Smith (1988) to refute "the old idea that a child learns classificatory concepts as minimal and necessary definitions". Concepts, he postulates, are "formed through reference back to rather vague and provisional 'prototypes' that anchor loosely formed 'families' of specific instances" (277). We learn the concept of a house, for example, not by listing essential features (roof, door, wall, etc.) that have to be checked off before deciding whether or not the whole thing is a house. Rather, Bloch claims, "we consider something a 'house' by comparing it to a loosely associated group of 'house-like' features, no one of which is essential, but which are linked by a general idea of what a typical house is" (277). It follows, therefore, "that the mental form of

classifying concepts, essential building blocks of culture, involves loose and implicit practical-cum-theoretical pattern networks of knowledge, based on the experiences of physical instances" (277), which researchers such as Smith, Sera and Gatuso (1988) have called "best exemplars" (Smith, Sera and Gatuso 1988:372 in Bloch 1994:277). A significant aspect of looking at classificatory concepts in this fashion, Bloch (1994:277) elaborates, "is that it makes them isomorphic with what are known as 'scripts' and 'schemata' ... chunked networks of loose procedures and understandings which enable us to deal with standard and recurring situations that are culturally created". These "small networks of typical understanding and practices concerning the world" call into question the "old checklist of necessary and sufficient conditions view" which linked concept formation with language (277). Concepts, therefore, "can and do exist independently of language", as evidenced in a child knowing the concept of house before she can say the word (277).

Bloch goes on to point out the dialectical movement between language and mental concepts that partly transforms non-linguistic knowledge as it becomes linguistic, acknowledging the work of linguist Bowerman (1977). This transformed knowledge then takes on "a form which much more closely resembles what structuralists, among other anthropologists, had assumed to characterize the organization of all human knowledge" (Bloch 1994:277). Bloch's (1994:278) preliminary conclusions regarding language and concept formation warrant recapitulation, given their special relevance to the questions raised in this dissertation:

- (1) much knowledge is fundamentally non-linguistic;
- (2) concepts involve implicit networks of meanings which are formed through experience of and practice in, the external world;
- (3) under certain circumstances, this nonlinguistic knowledge can be rendered into language and thus take the form of explicit discourse, but changing its character in the process".

Another crucial piece of Bloch's analysis of language and learning is his emphasis on the importance of non-linguistic knowledge in the development of expertise. Drawing on Borofsky's (1987) work in Polynesia, Lave's (1988; 1990) study of Liberian tailors, Anderson's (1983) studies on automobile drivers and the research by Dreyfus and Dreyfus (1986) on master chess players, he proposes a strong link between observation, hands-on practice and skill development. Indeed, with these colleagues, he posits an apprenticeship approach to knowledge acquisition which theorizes that "the performance

of complex practical tasks... *requires*¹⁰ that it be non-linguistic" (Bloch 1994:279). The process of mastery involves the construction of a cognitive apparatus dedicated to cope with complex tasks. Automobile drivers, for example, need to transform their teacher's verbal propositions "into non-linguistic, integrated procedures before the task can be effected rapidly, efficiently and automatically" (279). Expert chess players do not differ from novices in their knowledge of the rules of chess or in performing such motor tasks as knocking the others down. What seems to distinguish the expert, Bloch notes, is not so much the ability to handle complex strategic logico-mathematical rules, but rather the possession, in memory, of an amazingly comprehensive and organized store of total or partial chessboard configurations. This stored knowledge allows the expert to recognize the situation in an instant so as to know what should be done next (Bloch 1994:279).

Such findings on expertise suggest, according to Bloch, that humans go about the whole process of thought in quite a different way than that previously assumed. He argues against the sequential, logical model, expounding instead connectionism theory which proposes that we access knowledge, either from memory or as it is conceptualized from perception of the external world, not as a serial process of analysis along a single line but through a number of processing units which work in parallel and feed in information simultaneously (Bloch 1994:280). In addition, "the information received from these multiple parallel processes is analyzed simultaneously through already existing networks connecting the processors" (280). "Otherwise" Bloch (1994:280) muses,

given the conduction velocities and synaptic delays in neurons, it is a physical impossibility for the number of steps required by a logical sentential model of the mind to be carried out in the time which even the simplest mental tasks are ordinarily performed.

Strauss and Quinn (1994:286), cultural anthropologists who also favour a connectionist theory of cognition, underscore the non-linear, flexible and fluid nature of this process:

We think of knowledge not as sets of rule-like sentences stored in a central memory repository but rather as links among a widely distributed network of many little processing units that work like neurons...Learning can occur without explicit teaching and...such learning is compatible with flexible responses to new situations.

¹⁰ Italics added.

Connectionism, as Bloch (1994:280) himself admitted, is controversial (also see Bates and Elman 1993). He warned that it was still too early to say whether it will prove to be an accurate analysis of the workings of the brain. Some linguistic anthropologists also are uncomfortable with the idea of separating "non-language" and "language". In their article, "Language and World View", Hill and Mannheim (1992:382) critique Bloch for his separation of language and non-language, arguing that he is "apparently unaware that contemporary linguistics conceptualizes speech production as the exemplar par excellence of "embodied expert knowledge". Still, their critique of Bloch's possibly dated understanding of modern linguistics does not put to rest the doubt that Bloch, and scholars he references, cast on the centrality of verbal articulation and sequential processing for the learning process itself and hence, on the requirement of reading and writing for advanced problem-solving and abstract, *scientific* reasoning. Indeed, earlier in their article, Hill and Mannheim (1992:381) hint at a somewhat similar point, arguing that "culture is shaped in everyday practice below the threshold of awareness".¹¹

Connectionism bears a strong resemblance to another theory about human cognition and the epistemology of knowledge – constructivism. Inspired by the studies of the forementioned Lev Vygotsky (1929), child psychologist Jean Piaget (1952)¹² and educational psychologists Jerome Bruner (1990), the theory suggests that learners construct meaning through experiences with the real world. They do not learn facts and theories in isolation from the rest of their lives but rather in relationship to what else they know and what they believe. Learning is thus social and engaged, with each of us constructing our own rules and mental models that we use to make sense of our experiences. Knowledge acquisition can be facilitated, but not taught (Arts in Education, UWNY 2002).

There are different branches of constructivism, the two dominant being cognitive constructivism and social constructivism, a discussion of which is beyond the scope of this study. But proponents of each of these agree that learning is a search for meaning and meaning requires understanding the whole as well as parts. What distinguishes

¹¹ "Knowledge", Hill further notes in an article co-authored with Irvine, "is ... a social phenomenon, an aspect of the social relations between people (Hill and Irvine 1993:17).

¹² Elizabeth Bates and Jeffrey Elman have argued, in fact, that the core principles of equilibration and adaptation in concrete systems in Piaget's interactionist theory of behavioural change lend themselves well to connectionist theory. They write: "we will soon see a revival of Piagetian theory within a connectionist framework" (Bates and Ellman 1993: 642).

constructivism from connectionism is the belief, by proponents like Vygotsy (1929) at least, that language and learning are inextricably linked (Arts in Education UWNY 2002). For scholars who have studied the non-verbal character of Indigenous knowledge transmission, Bloch's promotion of connectionism, therefore, should be especially compelling. His emphasis on apprenticeship, non-verbalized, non-linear, memory-based and perceptual learning for the transmission of knowledge appears a comfortable fit, as the following sampling of work among Indigenous peoples in East Africa, North America and the Andean region attests. Before turning to this literature, however, there is one additional point in Bloch's analysis that deserves underlining, given its implicit support of arguments against the "scientification" of Indigenous people's knowledge – the transformation of knowledge once it is verbalized or pen is put to paper. Agrawal's (1999:179) warning deserves full citation here,

All efforts to make Indigenous knowledge useful to development must run the gamut of practices from particularization to generalization. The application of these criteria and practices in relation to Indigenous knowledge follows a particular logical relationship between power, utility and truth. It helps instantiate a division within Indigenous knowledge so that only useful knowledge becomes worth protection. But the valid doubt is whether there is anything particular about knowledge that has undergone sanitation implicit in the movement from particularization to generalization. In the very moment that Indigenous knowledge is proved useful to development through the application of science, it is, ironically, stripped of those very characteristics that could even potentially mark it as Indigenous.

As Agrawal infers, the selective, utilitarian and political nature of the outside interest in Indigenous knowledge influences its interpretation. But his point about the change that occurs during the shift from particularization to generalization also fits with Bloch's argument about the transformation of knowledge into something different when transcribed into words or written text. Words, particularly nouns, can hardly capture the relational, interactional and fluctuating context of knowledge production. A systematic description of Indigenous knowledge systems can prove still more problematic. In his introduction to his edited collection, *An Anthropological Critique of Development*, facetiously subtitled, "the growth of ignorance", Mark Hobart, citing van Beek, acknowledges this problem, albeit indirectly:

Most contributors share the view that the peoples they write about "seem to work through a body of practices – knowing how to do things and to react to changes, a set of practical procedures – than through a formal system of shared knowledge", which permits new practices to be adopted easily. (Hobart 1993:18)

Richard's article on farming systems in the same collection goes still further, in my view too far, suggesting that the "free-standing Indigenous knowledge system" anthropologists describe "is often nothing of the sort, but rather the product of a set of improvisational capacities called forth by the needs of the moment" (Richards 1993:63). Endorsing the practice theory of scholars like Bourdieu (see Rahman 1999a; Gledhill 1993; Ortner 1984), Richards calls for an assessment of the agricultural practices amongst Indigenous farmers as performances rather than predetermined designs – "sequential adjustments to unpredictable conditions" (Richards 1993:67). I question the emphasis Richards places on improvisation and sequential adjustment versus calculation bred of experience and strategic thinking, a perspective more compatible with connectionism. But his point about the need for rapid assessment and adjustment in ever changing circumstances is well taken. Researchers promoting the preservation of Indigenous knowledge through "memory banking" programs that feature community-based Indigenous knowledge documentation (Nazarea 1998; Warren and Rajasekaran 1993; Kothari 1997) might want to reconsider. An emphasis on written scripts of arguable value could well shift the focus away from campaigns to conserve the practice of Indigenous knowledge, respecting its dynamic, fluid and *sometimes* improvisational nature. Although well intentioned, such action is like fundraising for a botanical encyclopedia rather than a threatened community in the rainforest. It now seems appropriate to turn to work that addresses in more depth the dynamic and experiential character of Indigenous knowledge and learning.

Indigenous Ways To Know and Learn

Everything an Indian does is in a circle, and that is because the power of the World always works in circles, and everything tries to be round. (Black Elk in Cajete 2000:259)

Watch and listen and do it right! (Aboriginal Teacher from Kahnawake, Quebec in Leavitt 1991:277)

A most intriguing piece of research in support of an alternative hypothesis on the way that people learn and process knowledge is Alexander de Voogt's brief but intriguing article on the Bao players from Zanzibar. Bao is a four-row *manqala* game played primarily in East Africa and in some pockets of Sri Lanka and China. It uses a board with four rows of eight holes each, and 64 seeds. The objective of the game is to capture all the seeds of the opponent's front row (de Voogt 1996:7). Its complexity, de Voogt suggests,

reflects two aspects of the game: its hierarchical rules, which make it necessary to apply several rules at the same time in one move, and which create many complex rules in situations where two rules apply simultaneously; the high turnover of seeds and therefore the high number of changes on the board with each move that is played. This is known as mutational complexity, and it increases the difficulty of calculating even one's own move. (1996:7)

Profiles of Bao masters demonstrate that education, literature study and social successes are not essential for the acquisition of this expertise. Indeed, with the exception of de Voogt's recent research, there is no written material explaining this game. The people who excel include those who neither read nor write as well as highly schooled individuals. The learning tools these individuals use seem particularly appropriate for the calculation of rapidly changing information. Skilled players do not memorize a situation on the board; rather, they concentrate on the *changes of information* (de Voogt 1996:9). Although de Voogt does not cite scholars like Bloch, nor reference connectionism, nor emphasize the issue of best exemplars and non-verbal processes in the development of expertise, he nevertheless makes a convincing case for the role of experiential, rapid, schemata-based learning in the mastery of mutational complexity – for neurons operating in overdrive. Players draw on knowledge experienced and in constant flux, a common theme in the work of other scholars of Indigenous knowledge systems.

Rupert Ross's insightful treatise on aboriginal peoples contending with the Canadian criminal justice system also stresses the memory-based, flexible knowledge systems of Indigenous peoples. His reflections, based on years as a crown attorney in Northwestern Ontario, squarely, though not explicitly, confronts the ethnocentrism of those who consider aboriginal thinking as unscientific, concrete and trapped in the present. Basing his analysis on interaction and exchange with aboriginal scholars and elders, he

proposes an intriguing connection between Einstein's theory of relativity with a great many teachings of aboriginal peoples. In both visions of the universe, Ross (1996:115) observes, "all existence is seen as energy – or spirit – manifesting itself through matter by organizing and reorganizing that matter in ever changing (but patterned) ways". His excerpt (1996:115) from a then forthcoming book by Sakej Henderson, a Chicksaw-Cherokee, who, in 1994, was Director of the Native Law Center at the University of Saskatchewan, merits repeating in full:

Indigenous people view reality as eternal, but in a continuous state of transformation... [I]t is consistent with the scientific view that all matter can be seen as energy, shaping itself into particular patterns. The Mi'kmaq language affirms this view of the universe, building verb phrases with hundreds of prefixes and suffixes to choose from, to express the panorama. The use of verbs rather than nouny subjects and objects is important; it means that there are very few fixed and rigid objects in the Mi'kmaq worldview. What they see is the great flux, eternal transformation, and an interconnected order of time, space and events. With this fluidity of verb phrases, every speaker can create new vocabulary "on the fly", custom-tailored to meet the experience of the moment, to express the very finest nuances of meaning.

A particularly telling example of this fluidity is found in how the Mi'kmaq language deals with trees. Ross (1996:116) recounts that they are called by the sounds that are made in the branches, in the autumn, during a special period just before dusk – "known and talked about in terms of how they interact with certain aspects of their surroundings [and] in terms of how the individual observer perceives them". This process, he contends, is very "interactive", with room for individual creation. The focus of aboriginal approaches to science seems to be less on the characteristics of things than on the relationship between things. Since understanding of ever-changing relationships is nourished by experience, experience, not language, appears crucial for scientific discovery and the flourishing of scientific knowledge. Language follows experience. Writing about Indigenous agriculture, Warren and Rajasekaran (1993:38) confirm Rupert's contention: "its systems are dynamic, never static, and are continually influenced by internal creativity and experimentation as well as by contact with external systems".

Arlene Stairs' (1994; 1991) work with the Inuit of North Baffin, though not directly commenting on the etiology of knowledge transmission, lends further weight to analyses

of the importance of observation, interaction and relationships as well as apprenticeship learning. She identifies an Inuit concept of knowledge transmission – *isumaqsayuq*. "*Isumaqsayuq* is the way of passing along knowledge through observation and imitation embedded in daily family life and community activities" (1991:281). Not unlike the master chess player or Bao masters, Inuit learners, "typically develop concepts and skills by repeating tasks in many different situations, such as hunting under varying conditions of weather and animal movement and with various types of equipment" (282). Moreover, Stairs notes, "they do not traditionally make explicit verbal formulations of basic ideas or rules for success, but rather recount what they have experienced and listen to stories which present concepts and principles implicitly. Formulation of the big ideas is left to the mind of individual participants" (282). Stairs further comments that "teachers unfamiliar with the type of contextualized education exemplified by *isumaqsayuq* often worry that students don't know a particular topic or concept when they cannot verbalize the knowledge; they assume that verbal abstraction is a necessary mediating step in high level understanding" (282).

In another article critiquing the imposition of formal, occidental learning systems and communication patterns on Indigenous students, Stairs stresses the importance of collaborative learning with limited direct instruction – less elaboration and thinking out loud. One of Stairs' Inuit teacher-education pupils said it best when she compared Stairs' tendency to "over-explain" with "over sleeping" (Stairs 1994:68). Too many words, like too much sleep, leaves one in a haze – less alert and unable to grasp the bigger picture. Moreover, given Bloch's point about expertise, such verbalized instruction could inhibit the creativity and discovery inherent in the mastery of one's topic.

Writing on language and cultural content in North American native education, Robert Leavitt (1991) also emphasizes the role of apprenticeship and non-sequential, non-linear learning. Native children learn skills through experience with adults, not by having adults tell them what to do in recipe or instruction-manual fashion. "Whether conducted in the native language or in English, whether they address manual dexterity, general knowledge, or skills like writing and mathematics", Leavitt writes, "classroom activities will be most effective when centered on real life tasks, with children involved as apprentices" (Leavitt 1991:274; also see Ohmagari and Berkes 1997 on Cree knowledge transmission). Native North Americans, he also posits, "keep a number of related ideas

in mind, without assigning them an order or hierarchy... They commonly approach an idea or a topic from many different directions" (1991:273). Referencing Deloria (1992), Pierotti and Wildcat put it this way: "Western Europeans look backward and forward in time to obtain their place in history, while Indigenous peoples look around them" (Pierotti and Wildcat 1999:192).

Andean researchers have also contributed important insights to our understanding of the interactive, non-linear character of indigenous knowledge. Studies of Andean cosmovision¹³ (AGRUCO 1999; CREAR et al. 1991), a recently coined term referring to the way in which "members of a particular culture perceive their world, cosmos, or universe" (Slikkerveer 1999:171), tell a tale of the Andean world as a "living being, its totality not only including natural elements such as plants, animals and humans, but also the spirits, ancestors and future generations" (Slikkerveer 1999:171). Nature does not belong to humans but humans to nature. The interconnectedness of all matter influences the treatment of all matter. Humans must negotiate their space with all other beings, animate and inanimate. Their bargaining is based on respect and knowledge of their own vulnerability.

In their portrait of the Andean cosmovision in highland Bolivian communities, Rist, San Martin and Tapia (1997) explain that within the Quechua concept of *pacha*, akin to the occidental notion of the whole conformed by time and space, three spheres of life flow together and interact: spiritual life, material life and social life, with the evolution of life seen as a spiral. They are in a constant dynamic interaction with each other, with the future seen as a repetition and expansion of cycles and rhythms that draws upon the past for guidance (also see San Martin 1997). Here too the themes – of knowledge as fluid and non-linear, of the significance of relationships versus the individual entity, of existence as energy, of the importance of observational skills and keen spatial perception, and last but in no way least, of the spiritual dimension of knowledge – all find common ground with studies of Indigenous peoples elsewhere. Here too the misfit between conventional occidental learning theory – that tends to favour linear,

¹³ Cosmovision, originally a Spanish word referring to a people's cosmological vision, has emerged as concept used by English-speaking researchers of indigenous knowledge. Haverkort and Hiemstra (1999) define it to be the way a certain population perceives the world or cosmos. It also includes assumed relationships between the spiritual, natural and the social world. Given the spiritual, other world dimension of indigenous thought, cosmovision arguably may be considered a more accurate word than the Western term, worldview, that is usually used to capture this concept.

documented logic – and what we know about Indigenous peoples' ways of knowing and learning stands out like a sore thumb.

A particular problem with the Western educational packages delivered within Indigenous communities, as ecologists Berkes, Colding and Folke intimate in the ensuing quote from their study of complex adaptive systems and resilience theory, is the failure to acknowledge and respond to the complexity of the natural resource systems to be managed. This complexity, these scholars argue, "cannot be understood, let alone managed or controlled, through scientific activity organized on traditional disciplinary lines" (Berkes, Folke and Colding 2003:2). In an earlier publication Berkes, Folke and Gadgil (1993:151) have this to say about the challenge:

Modern scientific knowledge, with its accompanying worldview of human beings apart from and above the natural world, has been extraordinarily successful in furthering human understanding and manipulation of simpler systems. However, neither this worldview nor scientific knowledge has been particularly successful when confronted with complex ecological systems... It is in this context that traditional ecological knowledge is of significance.

Indeed, for Indigenous peoples in subsistence societies, the need to react and reorganize quickly under rapidly changing circumstances nurtures the broader-based thinking needed to manage complex systems. Their approach is a systemic one that, as suggested, emphasizes the relationship between natural and socially constructed phenomena rather than the character of a single phenomenon.

Scientists willing to pull their heads out of the sands of reductionist thinking have recognized the importance of this broader-based, multifaceted approach to knowledge and understanding, finding a theoretical framework for this alternative view in the new science of resilience. This chapter concludes with a concise sketch of resilience theory, given its value both for this dissertation's review of the natural resource management systems of Indigenous peoples, particularly the Andean highlanders I studied, and for this dissertation's critique of development assistance packages that have not considered the instruction resilience theory offers. Drawn largely from Berkes, Folke and Colding (2003); Berkes and Folke (1998) Adger (2000), Levin (1999) and Wilbanks and Kates (1999) as well as proceedings from a Stockholm conference in June 2002 to honour the thirtieth anniversary of the United Nations Conference on the Human Environment

(Swedish Ministry of the Environment 2002), this overview is necessarily abridged. It highlights the elements of these comprehensive theories that inform the central question of my thesis: might the West's development recipes be weakening, rather than strengthening, Indigenous peoples' capacity to adapt to change in a positive way?

Building Resilience

All effects...we observe in the world of experiences are interrelated in the most constant manner and merge into one another; from first to last they form a series of undulations. (Goethe circa 1790 in Naydler 1996:93)

This habit of observing natural objects and natural processes in their isolation...detached [them] from the whole vast interconnection of things...[It presented them] not as essentially changing, but as fixed constants; not in their life but in their death. (Engels circa 1875 in Merchant 1988:677)

Nature, as Berkes, Folke and Colding (2003:5) remind us in their opening discussion of complex systems, is seldom linear and predictable. It is a prolific web of living materials and non-living matter that are connected and changing in ways that can amaze, shock or remain obscure. Yet, until recently, to facilitate prediction and control, the Western scientific community appears to have bent over backwards to manage nature with a logic that assumes just the opposite – that nature's systems can be understood best through the compartmentalizing, ordering and sequencing of its component parts. Fortunately, not all natural scientists have found comfort in this mechanistic approach. As early as the 1930s and 1940s, general systems theorists (see von Bertalanffy 1968 noted in Berkes et al. 2003) questioned this orientation, perhaps inspired by much earlier intellectual rebels. The renowned philosopher and scientist Johann Wolfgang Goethe, for example, rejected the late eighteenth century dichotomy established between humans and nature, or the tendency to isolate the particular to explain the whole.

Like Goethe, general systems theorists asked colleagues to consider the interconnectedness, context, and feedback mechanisms of natural systems. The message was straightforward but fundamental. Berkes et al. (2003:5) explain:

The understanding of the essential properties of the parts of a system come from an understanding of not only those components but of their interrelations as well. Understanding comes from the examination of how the parts operate together, and not from the examination of the parts in isolation.

A new brand of scientist has emerged within the past few decades to pick up the baton passed on from Goethe and the general systems theorists. Hoping to promote a more sustainable management of our planet's ecosystems, they are particularly attentive to the implications of complex systems on natural resource management strategies. They call into question the adequacy of models and perspectives based on positivistic, linear thinking. Instead, they propose the need for qualitative data to complement quantitative data, and for multiple perspectives in the analysis and management of complex systems (Berkes et al. 2003:5).

One particularly interesting concept that has emerged from this reflection on the management of complex systems is that of resilience. Like systems theory, it is not completely new, having been used by ecologists for at least thirty years to evaluate the natural systems' capacity to cope with disturbance. However, the resilience of social systems is now also garnering the attention of scholars, as is interest in the connection between social and ecological resilience. Scientists and policy makers who met in Stockholm in June 2002 to review global progress since the United Nation's Conference on the Human Environment in June of 1972 had this to say:

Resilience is important because resilience systems persist, prosper, innovate, and give rise to the systems of the future. There is no optimal path for systems of people and nature, but there are desirable and undesirable ones. We can use resilience to break down undesirable paths and create or sustain desirable paths. (Swedish Ministry of the Environment 2002:146)

The sustainability of community development should be considered, therefore, through a resilience lens. But what is resilience exactly?

According to Berkes et al. (2003:13), Holling introduced the concept into the ecological literature in 1973 as a "way to understand nonlinear dynamics, such as processes by which ecosystems maintain themselves in the face of perturbations and change". The Resilience Alliance, a consortium of institutions and research groups that focuses on sustainability, has since broadened the scope of this concept to include

"integrated systems of people and nature" with resilient communities demonstrating three key characteristics (Swedish Ministry of the Environment 2002:146):

- The ability to maintain a particular pathway or set of conditions, despite disturbances;
- The capacity for self-organization (versus lack of organization, or organization forced by external factors);
- The capacity for learning and adaptation.

Since resilience is concerned with "the magnitude of disturbance that can be absorbed or buffered without the system undergoing fundamental changes in its functional characteristics" (Berkes et al. 2003:14), it is correctly associated with diversity. Inter and intra-species variety, numerous and varied human opportunities, and a good selection of economic options enhance a system's capacity to "withstand shocks and surprises, and if damaged, to rebuild itself" (Swedish Ministry of the Environment 2002:147). Referencing Gunderson (1995), Berkes et al. (2003:14) stress the interaction between ecological and social disturbances and the importance of remembering that disturbances are not only naturally occurring ones like forest fires or insect outbreaks, but human-based ones like pollution or over fishing. "Ecosystem responses to resource use and the reciprocal response of people to changes in ecosystems", they write, "constitute coupled, dynamic systems that exhibit adaptive behavior" (14).

An examination of the interrelationship between social resilience and ecological resilience makes good sense. Yet, as Niel Adger (2000:351) cautions, we would be wise not simply to take the concept of ecological resilience and superimpose it on social systems. In so doing, we might well risk entanglement in biological determinism theories that hearken back to reductionist thinking. It seems more useful, as Adger further suggests, to examine the possible parallels (351), borrowing concepts from the analysis of ecological systems that help us to understand the human dimension. An especially useful notion used to assess the resilience in natural systems is that of a critical threshold. When resilience is strong, disturbances may modify but not fundamentally change the system's structure and strength. When weak, a disturbance can overtake a critical threshold, contributing to what ecologists have termed a "flip" or shift to a state that is less desirable and sometimes irreversible (Berkes et al. 2003:15).

Social systems, these scholars argue, also have critical thresholds, with less resilient social systems demonstrating vulnerability to environmental and social change or economic or political upheaval. In the short term, they may be able to continue to generate resources and services; but only as long as the disturbances or stresses do not exceed their capacity to cope. Once at the threshold, even the smallest of disturbances – the proverbial *straw that broke the camel's back* – can send them over the *brink* and into a new reality. The loss of the cod fishery off the shores of Newfoundland is an all too clear example of a human-induced flip that has sounded the death knell for many coastal communities.

The catch of one too many cod off the Eastern seaboard is linked, of course, to the resilience of the institutional systems that govern the rules and regulations guiding fishers' activities. Indeed, the socio-political and cultural element in social resilience is where we might part company with a deterministic matching of ecological and social resilience. Human decision-making clearly plays a key role in the social systems' resilience equation. Adger (2000:351) argues that the resilience of institutions is based on their historical evolution and their inclusively or exclusivity, hence, "how effective they are at oiling the wheels of society". Central to the resilience of institutions, therefore, are the "cultural context of institutional adaptation" and "the differing conceptions of human environment interactions within different knowledge systems" (351), differences that tend to be overlooked by the majority of Western policy makers in search of sustainable natural resource management (351). Any determination of a community or region's resilience, including the determination of community-specific resilience indicators, must, therefore, place local residents and their institutions at the center of the resilience assessment process. Still, there are broader, universal characteristics of resilience that can serve as a useful starting point for reflection on a particular community's social and ecological resilience. Simon Levin's (1999:198-206) insightful examination of the commons and complexity, *Fragile Dominion*, proposes eight commandments for the management of complex environmental systems. With slight reordering and adaptation, they serve as a useful list with which to begin an assessment of community resilience:

- Resilient communities tend to act in ways that reduce uncertainty and risk. Actions include a careful reading and monitoring of the world in one's internal and external sphere and spreading the risk

"by broadening the scales at which (one) relies on the ecosystem for services" (Levin 1999:200).

- Resilient communities are prepared for surprises. Here Levin credits Holling for his writings on adaptive management. Adaptive management means remaining open to change and the avoidance of rigid structure. Rules and regimes can be adjusted on the basis of monitoring and new data. There is a continued probing of alternative management strategies (Levin 1999:200) and thus considerable flexibility and openness to learn. Knowledge is thus dynamic, evolving and grounded in experience.
- Resilient communities maintain heterogeneity. As Levin notes and as argued above, the capability of any ecological system to respond to new environments is to be found in the maintenance of biological diversity, in all its forms. As we lose species, we lose the diversity and resilience in ecosystems (Levin 1999:202). Cultural homogeneity similarly contributes to a narrower knowledge base from which to problem-solve. Variability within systems and among systems, including culturally based knowledge systems, broadens options.
- Resilient communities sustain modularity. Within the ecological system, as Levin argues, modular structures provide a buffering against "cascades of disaster" (Levin 1999:202). Institutions within social systems likewise have a better chance of survival against internal or external upheaval if they are decentralized and multifaceted. As Lewin (1999:202) intimates, the monolithic "global village" championed today can weaken modularization and increase vulnerability, with global health pandemics and the furious ups and downs of financial markets evidence of the drawbacks of borderless, *one-size fits all* structures.
- Resilient communities preserve redundancy. Levin (1999:203) notes, "redundant components in a system are those components whose value becomes clear only when other parts are lost" – like the back-up CD of a belaboured dissertation when one's computer operating system crashes. A lack of redundancy in institutions, a popular trend in downsized, rationalized Western corporations, can mean the loss of critical institutional memory or lost functions when unexpected disturbances occur. Similarly, the knowledge of seniors within a community is often critical to overcome an unexpected crisis.
- Resilient communities tighten feedback loops. To encourage behaviour for the common good, we must, as Levin (1999:203) remarks, tighten the cost-benefit feedback loops, minimizing the distance between decision, activity and benefit, and enhancing a

sense of responsibility for our actions. Consideration of the scale of an activity is thus very important (see Wilbanks and Kates 1999). Development workers all too familiar with costly “white elephant” projects keenly understand the consequences of large-scale program design built and managed by experts from the outside. A return to the Eastern Canadian cod fishery example is illustrative. The concept of codfish being a diffuse global commodity, exploited in huge volumes in an effort to gain the competitive advantage – an uncaught fish being a lost opportunity (Levin 1999:203) – offered little immediate incentive to worry about stocks, until it was too late!

- Resilient communities, it follows then, are those that “do unto others as they would have others do onto them” (Levin 1999:206). Action for the collective good keeps communities resilient to the forces of competition and divisiveness that can send a community into an abyss of conflict and destruction. Again, the decline of the cod fishery reveals the hard lesson of ignoring this well-worn but little heeded maxim.
- Resilient communities, finally, build trust. Trust building, even within a single cultural group, is perhaps one of the most difficult characteristics of resilience to sustain. Scale, distance and time considerations are thus important elements to consider when we seek to build trust. The larger and broader the universe of actors, the harder it is to build confidence in the other (Levin 1999:205). Essential for the maintenance of trust is the establishment of social structures in units that are sufficiently small to establish the internal confidence to negotiate a common agenda with larger units. Understanding the other through repeated interaction is important, and, in Levin’s view, may even lead to reciprocal altruism (Levin 1999:205), or at the very least, reciprocal exchange since reciprocity in a relationship often has a very pragmatic base.

Although not directly addressed in Levin’s presentation of his eight “commandments” for sustainable environmental management, any worthwhile assessment of a community’s ability to maintain heterogeneity and diversity, to learn to live with and learn from change and disturbance, to carve out meaningful spaces for the building of trust and practices in favour of the common good and finally, to nurture and act on knowledge that is meaningful to the community must include a careful analysis of issues of control, ownership and power. Reflecting on her experience with Dene peoples in Canada’s Northwest Territories, Martha Johnson had this comment: “The real issue is who is making the decisions rather than what knowledge base they are adhering too” (in Carter

1997:4). As this chapter has suggested, however, power, control and ownership are closely linked to the knowledge base one champions.

The West, with its almost unfaltering faith in documented, linear, instrumental knowledge, and unwillingness to share its power and control, has created a convenient blueprint for Indigenous identity and knowledge – simple, uncritical, naïve, and deficient. This monolithic characterization, manifested so clearly in occidental approaches to knowledge transmission and the deification of literacy programming, robs Indigenous peoples of the opportunity to celebrate and practice the diversity and alternative knowledge systems that strengthen the resilience of their communities. It also represents a symbolic *monocropping* of Indigenous peoples and knowledge that is as dangerous as the perils of plant genetic uniformity. There are, fortunately, advocates of a new approach to understanding and interaction between Western and Indigenous peoples. While they are still in the minority, as the ensuing chapter attests, their attempt to minimize the power imbalances within the insider-outsider dialectic inherent in Western-Indigenous community relations is gaining momentum. Over three centuries after the Iroquois informed Hennepin about the deficiencies of Western books, there are, at long last, Westerners willing to admit that their books have never told the whole story!

CHAPTER THREE

THE DISCOVERY OF EXOTIC PEOPLES: FROM ETHNOCENTRIC SELF-INTEREST TO INTERCULTURAL RECIPROCITY

Anthropology has almost always focussed on the deprived and powerless, usually with the admirable goal of improving their lives, but too often it has lost sight of the larger societal framework in which the deprived are caught. The result, at best, has been a flawed analysis; at worst, an ideological statement passing for theory which blames the powerless for their problems (Stanley Barrett 1984:xii).

Looking at the academic anthropologist or ethnographer, we've had a lot of difficulty with those types of people because they have an attitude that they define their work and insist that they should have the freedom to do whatever they feel academic individuals should do – that no one should curtail their activities. We have no way of monitoring the accuracy of the information that they collect; they may get a narrow perspective of a very complex situation in Native communities. They take that narrow perspective and it's put on the world's stage... they may sell it to the provincial governments...or...to various corporations, like the Canadian National Railway, and use that against us. (Ron Iganace, Chief of the Skeetchestn Band, British Columbia, in Dyck and Waldram 1993:167).

From the early days of colonial exploration and frontier development to the not so distant past, the West's construction and understanding of Indigenous peoples has been guided largely by research brewed in a cauldron of modernity, positivism and the superiority of occidental knowledge systems. Western paternalism towards indigenous peoples, exemplified so clearly through the literacy recipes dished out to communities thought to be *hungering* for Western-style development, has been both a source and product of research that has placed the researched at the fringes of the research equation. When outsiders left for home, *their* communities were too often left with extractions like the potholes on a Canadian road in late winter. Anthropologists have

historically been amongst the most enthusiastic to engage in knowledge mining. And as Chapter Two's profile of Goody and Watt's work on literacy intimates, the findings of those content with an ethnocentric approach to the other have been predictably, often dangerously, off the mark, contributing to policies of containment and assimilation that have reinforced Western hegemony and entrenched second-class citizenship (Kulchyski, 1993; Escobar 1991). Anthropologists may well have been willing to risk "life and limb" on the frozen tundra or within the darkest jungle in an effort to enlighten the Western world about non-Western peoples. But when push came to shove, with notable exceptions (Nash 1975; 1974; Asad 1973; Hymes 1969; Berreman 1969; 1966; Nader 1969; Gough 1968; Marquet 1964; Tax 1953), many were reluctant to risk their own psychic harmony or the security of their academic paycheck to gaze beyond the Cartesian logic of their reductionist science, to question a status quo eager to exploit the exotic subjects of their anthropological prospecting¹.

Indigenous challenges to Western dominion (Purcell 1998), together with the growing scholarship of academics and development practitioners prepared to confront the tyranny of occidental knowledge systems, have inspired the development of new approaches to understanding peoples on the lip of Western privilege. Deficit development concepts like underdevelopment have been exposed as social constructions based, Majid Rahnema (1999:x) suggests, "on a need to degrade the communal solidarity that blocks the emergence of powerful elites". At long last, research models that consider the "researched" as researchers and address issues of power, privilege and control have also surfaced. Information gathering is at long last shifting from an extractive mode primarily of benefit to the outside researcher to an interactive one built on the notion of co-responsibility, two-way learning and intercultural negotiation. But this move to more equitable and informed research, with its methodological alternatives, has been painfully slow in coming, with mainstream anthropologists arguably amongst the "heaviest foot draggers" in the social sciences (Kulchyski 1993).

¹ Joan Vincent (1990) contends that there were a number of late 19th century anthropologists who offered incisive critiques of European domination. But, as Gledhill (1994:3) points out, referencing Vincent, these "strands of an anthropological approach to politics were not those that became hegemonic in the discipline after 1940".

Peter Kulchyski (1993:22) charges that anthropology, "with its historical linkage to various forms of imperialism... has been somewhat more susceptible than other academic disciplines to the charge that the knowledge it produced supported hegemonic power". In his monograph on applied anthropology's treatment of indigenous knowledge, Trevor Purcell (1998) captures the paradox in the anthropologist's quest to explain the other on Western terms. "Applied anthropology, like sociology", Purcell writes, "grew out of a humanitarian desire to find a sense of order in a world driven by the idea of progress and its warrant for global hegemony" (Purcell 1998:261). John Gledhill (1994) agrees. Although anthropologists working in colonial countries were seldom agents of colonialism in a direct sense, he writes, they proved incapable of "confronting the fact that ... (their) object of study was a world structured by Western colonial expansion and capitalist imperialism in a systematic way" (1994:3). Quoting Wendy James (1973), he concludes that anthropologists essentially became "reluctant imperialists" (3). Kathleen Gough (1968) was still more blunt about her discipline. "Anthropology is a child of imperialism", she declared.

But surely this misguided scholarship is the sin of a by-gone era! Post-modern anthropologist Arturo Escobar (1991) suggests not, insisting that this dialectic in the anthropologist's role – the effort to humanize a system inherently designed to exploit the weak – remains alive and well today, thanks in particular to the applied work of scholars calling themselves development anthropologists. Escobar's (1991:677) indictment of his colleagues' on-going complicity in the imposition of homogenizing, Western-based models of development is harsh and to the point:

...development anthropology, for all its claim to relevance to local problems, to cultural sensitivity, and to access to interpretive holistic models, has done no more than recycle, and dress in more localized fabrics, the discourses of modernization and development...What is the politics of development anthropology if not...a politics of a Western-based, patriarchal, scientific, economic and cultural project?

In a subsequent publication subtitled, *The Making and Unmaking of the Third World*, Escobar (1995:15) again admonishes development anthropologists for having "overlooked the ways in which development operates as an arena of cultural contestation and identity construction". The development discourse they have helped to establish, he insists, "has created an extremely efficient apparatus for producing

knowledge about, and the existence of power over, the Third World" (7). Quoting Asad (1973), he asks, "does not development today, as colonialism did in a former epoch, make possible 'the kind of human intimacy on which anthropological fieldwork is based, but ensure that intimacy should be one-sided and provisional' even if the contemporary subjects move and talk back?" (14) Not surprisingly, Escobar (1997) questions the development anthropologist's right to practice his/her trade within Indigenous communities, at least under the current terms of reference, i.e., funded by mainstream institutions intent on normalizing a deficit model of development in an effort to maintain Western dominance in the world order.

In this chapter, I will explore the role of the applied researcher in the development field. The chapter will thus extend the critique of Western development's ethnocentric and self-serving approaches to knowledge and social change within indigenous communities presented in Chapter Two to include a critical look at methodology. More particularly, the chapter will focus on the contributions of the development anthropology discipline to which I belong. But it will also move beyond Escobar's somewhat ironic reduction of development anthropology into a uniform monolith to review emerging, more encouraging alternatives for Western-Indigenous research and interaction.

Drawing primarily from the related works of Purcell (1998), Escobar (1997; 1995; 1991), Gardener and Lewis (1996), Gledhill (1994), Kulchyski (1993), and Maquet (1964), I begin with an abridged overview of the evolution of applied or development anthropology. I then turn to an examination of alternative paradigms for research and social change work that have been designed to put an end to the coercion of conventional occidental research (Fals-Borda 1979; Chambers 1995; Hall 1992; Ryan 1998). Finally, I propose a framework for center-periphery or insider-outsider interaction – intercultural reciprocity – that if properly applied and attentive to scale could represent a modest first step toward more equitable and just interaction between Western and Indigenous peoples. Before proceeding with the chapter's first segment on the emergence and role of development anthropology, however, a definition of development anthropology seems in order.

Recognition of development anthropology as a full-fledged branch of anthropology is recent and still tentative. Academic positivists who consider political neutrality and

scientific distance central to the establishment of any sub-discipline of anthropology have hesitated to bequeath formal status, as they had for applied anthropology. However, as Escobar and the authors he references suggest, there is de facto recognition of the field's existence and specialized function (see Escobar 1991). Purcell uses applied anthropology and development anthropology almost interchangeably, the implication being that they are essentially the same sub-field of anthropology. Others propose a more precise definition. McGill University's anthropology department (1998), for example, offered this definition on its web-site:

Development anthropology studies problems of poverty, resource depletion, population pressures, environmental deterioration, and the misguided "development" strategies pursued by national governments and international agencies. Development anthropology also studies indigenous strategies of resistance, organization, resource management and grassroots development – which have been pursued with varying degrees of success.

I prefer the definition to fall somewhere in between the Purcell and McGill categorizations: development anthropology is applied anthropology that focuses on rural and urban communities on the margins, in transition and in struggle with the dominant society. As the following account suggests, the field itself is certainly in a state of struggle and transition.

The Rise and Failings of Development Anthropology

Within a discussion of the broader context of "the asymmetrical place of knowledge in the power relations historically constituted by the expansion of Europe" and the West's insistence that legitimate knowledge be equated with empirical, verifiable and replicable scientific discovery, Trevor Purcell (1998:258-260) identifies three key, albeit often blurred, periods in the evolution of applied or development anthropology. These periods include: the external and internal colonialism phase; the World War Two phase; and the development anthropology phase. At the risk of some overgeneralization, a synthesis of each period ensues.

The Colonial Assignment

The principal preoccupation of anthropologists during the external and internal colonial phase appears to have been how to “move the natives through the stages from slavery to “civilization” (Purcell 1998:261). This shift from primitive to modern posed a significant dilemma, however. Schooled in cultural relativism, pushing the “natives” towards modernity was perplexing, a somewhat messy contradiction. Taking their cues from natural sciences and later sociology, “colonial” anthropologists began, therefore, to seek laws to rationalize and to repair society (Purcell 1998:261) The “patron saint of applied anthropology” (Escobar 1991:661), Bronislaw Malinowski (1930:408) made this requirement quite clear in his article, “The Rationalization of Anthropology and Administration”:

...romance is fleeing anthropology as it has fled many human concerns. We functional anthropologists have to rely upon the other attraction which science presents, the feeling of power given by the sense of control of human reality through the establishment of general laws. Science is thus the most practical form of activity, while its opposite, muddle, is certainly less practical.

The loss of *romance* in Malinowski’s cherished field contributed to some fairly profound soul-searching as this next citation reveals. But his nostalgia for a less mechanistic view of the world does not appear to have reigned in his drive to turn the study of *man* into a science of benefit to colonial authorities:

And now, after twenty years of anthropological work, I find myself, to my disgust, attempting to make the science of man into as bad and dehumanizing an agency to man as physics, chemistry and biology have been for the last century or so denaturalizing nature... As soon as the study of man becomes ‘rationalized’ it will proceed as ruthlessly to dehumanize human nature as science is even now obliterating the natural face of the inanimate world. And yet the process is inevitable, and the progress of anthropology towards a really effective analytic science of human society, of human conduct and of human nature cannot be staved off... [I]t is quite as necessary to advocate the reorganization of anthropology on functional lines as to stimulate the administrator’s interest in what the anthropologist has to say. (1930:406 and 427)

Growing evidence of the brutality of this control seems not to have set well with many colonial era anthropologists who knew the human face of these peoples. About this concern, Firth (1981) wrote:

Social anthropologists reflected on the human conditions of the people they were studying, they were apt to be quite critical of aspects of the colonialist positions in the use of land and labour and towards educational policy, which disregarded customary norms of people concerned. (Firth 1981:194; in Purcell 1998:261)

Eventually, with scholars like Malinowski in the lead, the task of the anthropologist was seen to be the need to humanize the colonial system, a process that gave birth to the field of applied anthropology. Purcell (1998:261) captures the irony in its origins:

The earliest organized efforts at the application of anthropological knowledge to practical social issues began with the training of "practitioner anthropologists" in Europe, and the hiring of anthropologists in the United States by policy research organizations. On both sides of the Atlantic these anthropologists were, in general, hired to act in the interests of a dominant culture seeking to control the volatile boundary between [I]ndigenous and non-[I]ndigenous. On both sides of the Atlantic, however, the experience of the anthropologist in carrying out this mandate led to the creation of another boundary, a far more ambiguous one. A division grew between the anthropologists' view of the world constructed through the convergence of science and field experience on the one hand, and the ideological position and political economic goals of those who hired them on the other. Unlikely as it might seem, this nexus of ambiguity has been the seedbed of humanism in applied anthropology. What was conceived with purely political economic intentions ended up giving birth to something of a more redeeming nature.

However redeeming the anthropological effort to humanize colonialism and minimize its more abusive expressions of power and control, the approach fell short of a more revolutionary questioning of colonialism's basic tenets. Unable, or perhaps unwilling, to envision alternative development paths, they refused to examine the political and economic underpinnings of a system built on the backs of the peoples whose cultures anthropologists exposed to the world. While possibly harbouring doubts and discomfort, on the surface at least, they accepted the colonial march of progress as a given, although Firth's (1938) admission in his treatise, *Human Types*, suggests that at least some were well aware of their options and assignment:

If the anthropologist is asked to help in making a policy of indirect rule more efficient, is it with the ultimate objective of fitting the natives for self-government, with freedom of choice as to the form of political institutions that they may finally desire, or is it with the aim of simply getting a more cohesive community, with law and order better kept, taxes paid more promptly, and social services more efficiently carried out, all to remain within the framework of an Imperial system? When it is argued that anthropology must be ready to give solution to practical problems, it is too often assumed that the values which the anthropologist should uphold and actively promote are those of our own civilization. (Firth 1938 in Escobar 1991:669)

There were other intellectual influences at play during this period as well. Reinforcing the equation of Western knowledge with “progress” were evolutionary anthropology, exemplified in the work of Lewis Henry Morgan, and an expanding Christian humanitarianism (Purcell 1998:262). Together they helped to breed consensus on the need to protect primitive, colonized peoples. Paternalistic, protectionist policies became the anthropological prescription of the day. Their recommendations strove to help Indigenous peoples to find a better fit within inequitable colonial systems on the one hand; on the other, they facilitated the politics of containment and control and, in so doing, became the instruments of an elite bent on the consolidation of Western power.

There are other paradoxes in the positivistic anthropological approach in these and subsequent years of relevance to this analysis. The belief in and the imperative of scientific *objectivity* in anthropological scholarship were inherently contradictory in two clear ways. First, the authoritative and very central position of anthropologists within the two primary modes of ethnographic research at the time – participant observation and informant interviewing – placed them in an essentially compromised position. To make detailed observations or inquiries of an outside group requires an intimacy and familiarity with that culture – an appreciation of the *emic* – that precludes the objective distance normally demanded of the impartial *scientist* interested in the *etic*, testable, observable *facts*. Intensive interaction with the observed, on terms often defined by the observer, cannot help but bend the interpretation of symbols, traditions and knowledge, with replicability of findings an almost impossible task. Maquet (1964:53) makes a similar point about the inherent contradiction between the purpose of anthropological study and the notion of objectivity:

Anthropology is not constructed by an impersonal subject. It is in this sense that anthropology differs from science...[A]nthropologists in fact have not attempted to elaborate techniques suppressing the personal factors in observation, in spite of the general trend[,]...because the social meaning which is an essential part of any social phenomenon is an obstacle to the development of impersonal methods of observation.

The anthropologist's preoccupation with micro-level, *scientific* approaches to understanding human societies in this period betrayed a second incongruity. In their almost microscopic interpretations of the local, they generally avoided broader analysis of socio-economic and especially macro political forces affecting their researched communities. Such political economy was often not within the purview of their experience or expertise and they may have been understandably wary of the havoc that open analysis or critique of such systems might wreak on their credibility, reputation or employment security for that matter. Again, Maquet (1964:48) makes an important point. Colonial anthropologists, he reminds us, "were not assimilated to the [Indigenous] layer of the society. They were members of the white society". Thus, while they were "oriented toward non-conformist attitudes critical of the colonial order",

...their socio-economic position depended on the stability of the European domination pattern... Their acculturation studies may have exposed the negative impact of Western imperialism, but solutions offered were reformist and as little disruptive to the social fabric as possible. (1964:49)

Colonial anthropologists might also have been concerned that the integration of a more global information and analysis might distort the logic of the local portraits they presented, as juxtaposition with more diverse systems generally does. Macro-level commentary and activism were thus generally left to others. Purcell (1998:265) makes note of this orientation observing, "in almost none of the classical ethnographies up to the 1950s, such as Evans Pritchard (1940), Firth (1936), Fortes (1949), Leach (1954), Malinowski (1922), and Radcliffe-Brown (1922), did international power relations figure into the systematizing theories constructed on the study of Indigenous peoples". In his study of applied anthropology in Canada, Edward Hedicar (1995:111) concurs, arguing that this "research has been removed from discussion in the political field". Although not limiting his critique to the colonial era, Eric Wolf (1969:261) had this to say about the history of his discipline: "...anthropology has reached its present impasse because it has

so systematically disregarded the problems of power". Decision-makers within the arenas anthropologists avoided, however, often used the fruit of the anthropologists' local labour² to consolidate their power.

One additional point on the issue of "scientific objectivity" worth raising relates to anthropologists' micro-levels studies of this period. As Gardener and Lewis (1996:23) comment in their review of the post-modern critique of anthropology, the tendency of these colonial scholars was to avoid the questioning of the status of the knowledge being gathered. Societies were often reduced to a series of commonalities. In structuralism, for example, this reductionism was expressed in the idea of binary oppositions which underlie all social forms and to which all cultures can be reduced. By suppressing the historical specificity of the ethnographic evidence, the so-called objective generalizations that these scholars claimed conferred authority and expertise (Gardiner and Lewis 1996:23). It was in the anthropologist's interest to disguise or ignore the heterogeneity and counter patterns within local cultures.

Generally with the best of intentions, colonial anthropologists called for more humane and fair treatment of the "other". But by not looking or acting beyond village borders to probe the fundamental political and economic causes of their *subjects'* growing marginalization in the bigger world, such as the link between capital accumulation and the proletarianization of the colonized (Mies 1986) or the exploitation of the hinterland and its peoples to feed the metropolis (Watkins 1977), they frequently played into the hands of those bent on a more oppressive course. Their refusal to look inward at their own biases, insecurities and professional positioning also contributed to an abandonment of their comparatively unique opportunity to promote the strategic interests of the less powerful. In so doing, they forsook the truly substantive humanitarian cause of social justice.

² Purcell (1998:265) goes on to suggest that "anthropology had to wait for dependency theory and world systems theory in order to begin to clear the boundary between micro and macro- level analysis, a process which was weakly prefigured in Redfield's folk-urban continuum and more vigorously in the workings of Marxist scholars Mintz, Wolf and Steward". But as Gledhill reminds us, even then the political ramifications of generalizing theories were still not thoroughly considered. In Latin America, the military's embrace of dependency theory to further their own totalitarian ambitions – linking the subservience of political elites to metropolitan and imperialist interests– is sad testimony to theory turned against itself (Gledhill 1993:5).

War and Study on the Home Front

The call to defend social justice and human rights appears to have been easier to heed in the wake of Hitler's genocidal war against non-Arian peoples in European corners of the "First World". Many of the better known anthropologists in what Purcell defines as the World War Two phase of anthropological scholarship (lasting well into the 1960s) initially resisted participation, in part due to discomfort with what might be perceived as overt political activity, though for some like Frans Boas, a long-standing commitment to pacifism kept him at bay (Purcell 1998:263). But as Purcell points out, referencing Margaret Mead (1979), Nazism's violation of one of the deepest paradigms of cultural anthropology of the time, the "psychic unity of humankind" – with its roots in comparative ethnography – moved them into action. Leading anthropologists like Bateson, Chapple, Mead, Frank and Benedict reconsidered their commitment to scientific impartiality and distance and loaned their expertise to the war effort. The task they assigned to themselves was to develop cultural knowledge of adversaries and allies alike, knowledge that would facilitate policy formulation based on predictable cultural patterns (Purcell 1998:263). Experience with the chauvinistic national governments they served often left a sour taste in the mouths of these humanist students of non-Western peoples. Continued efforts at neo-colonial domination and government duplicity in projects like Project Camelot appears to have inspired a lull in applied anthropological activities (Purcell 1998:263).

Yet, as within the colonial period, much of the applied anthropology of this period ultimately enhanced Western control of Indigenous peoples. Patterns identified were predictably ethnocentric, with policy recommendations reformative rather than transformative. Once again, anthropologists who, in theory at least, were trained to observe and understand the *other* best, could not remove their thick Western spectacles, and in so doing maintained a clouded vision of the *other*. Evans-Pritchard's sweeping statement about "primitive women" delivered to the women of Barnard College during the *Ozzie and Harriet* years of post-World War Two idealism about family life speaks volumes about such socially-embedded blind spots:

The adult primitive woman is above all a wife, whose life is centered in her home and family...A woman passes at marriage from under the

authority of her father to that of her husband...Important decisions with regard to home, the upbringing of children, the betrothing of daughters and sons, and so forth, rest in him and him alone. (Evans-Pritchard 1955 Fawcett Lecture cited in Leacock and Etienne 1980:1)

As Gledhill (1994:13) suggests, the baseline for anthropological analysis was Western norms, with accounts focusing on how the “other” either deviated or conformed to that norm.

Again, with the exception of activist critics like Sol Tax (1953), whose action anthropology with the Fox Indians was very radical for its time, the majority of World War Two-era anthropologists also missed the point about the need for a more revolutionary critique of the Western path to development and modernity. The price paid was not only a scholarship with considerable shortcomings but humanist goals that did not speak to the real interests of the peoples they were hoping to assist³. An anthropological critique of Western cultural hegemony and anthropology’s assistance in its entrenchment did not emerge in any concerted way until the mid to late 1960s, thanks, in part, to a dissident generation of scholars (Nash 1975; 1974; Asad 1973; Hymes 1969; Berreman 1969; 1968; 1966; Nader 1969; Wolf 1969; Gough 1968; Maquet) who were, as Berreman explained in his contribution to Del Hymes’ 1969 pioneering collection on the malaise in anthropology, “sick of anthropology as it is exemplified in most of our journals, books, and courses – even those we have ourselves perpetuated” (1969:83). “If we involve ourselves in portentous activities fateful to the lives of others”, he also admitted, “we can claim no immunity from responsibility for their consequences” (Berreman 1968:91). With this willingness to look squarely at the role of the anthropologist in public policy and social change processes, there emerged a third trend in anthropological scholarship, what Purcell calls the development anthropology period.

³ The scholarship and applied work of the leading and very influential Canadian anthropologist, Diamond Jenness, whose career spanned the colonial and the war-years period, offers an excellent example of the ultimately contradictory relationship between the authors and subjects of anthropological research. Peter Kulchyski’s (1993) harsh assessment of Jenness’ role in state-supported assimilation makes for convincing reading; however, a reiteration of his argument has been left for a companion paper to this study.

Community Participation

Je participe
Tu participes
Ils participent
Nous participons
Vous participez
Ils profitent

French Student Poster 1968 (in Arnstein 1969:216)

Factors influencing a rethinking about traditional views of knowledge, culture and progress were many and complex, not the least of which were decolonization, globalization and the growing political ferment amongst newly emerging nations and Indigenous peoples determined to fight back. Early twentieth century radicals like Italian social theorist Antonio Gramsci, American social psychologist Kurt Lewin and critical theorists Adorno, Marcuse, Horkheimer and Fromm and others from the Frankfurt school were among the first scholars to take a hard, second look at the inherent limitations of Western knowledge production (Hall 1992; Bronner 1993). Their food for thought was subsequently stirred and seasoned by post-colonial thinkers like educator and philosopher Paulo Freire (1970), the iconoclastic development critic Ivan Illich (1971), anthropologist Talal Asad (1973) Colombian sociologist and social activist Orlando Fals Borda (1979) and post-modern philosopher Michel Foucault (1980). Alongside Indigenous leaders, these scholars conceived and championed research principles that challenged the centrality of the Western knowledge and the power of those who championed it. They also insisted that the political dimensions and consequences of the research be acknowledged and addressed from the start. A full discussion of these contextual impulses and intellectual currents is clearly beyond the scope of this study. But one especially important factor to highlight here was the obvious failure of Western systems to deliver the development goods to non-Western peoples. Indigenous and Third World condemnation of the embarrassing and increasing gaps between the health and well being of peoples at the center and those on the periphery shamed policy-makers and academics alike into questioning the development paradigms guiding the change process.

Motives for change were also quite pragmatic. All too frequent and costly development failures, termed "white elephants", were an unwelcome drain on national and international treasuries. Within State development agencies, new and influential policies emerged which, on paper at least, called top-down procedures of the past into question. Between 1973 and 1975, the United States Agency for International Development's (USAID), for example, enunciated a "New Directions" policy that, for the first time, called attention to the "human component" in development and advocated a more beneficiary-oriented, community-based approach aimed at meeting the basic human needs of the poorest of the poor (Escobar 1991:664). Escobar (1991:663) offers this synthesis of events:

Development experts and agencies, having become discontent with the poor results of technology and capital-intensive top-down interventions, developed a new sensitivity toward social and cultural factors in their programs. Moreover, they began to realize that the poor themselves had to actively participate in the program if these were to have a reasonable margin of success.

However feeble the participatory aspects of this approach in the early years, and arguably today within multilateral and government institutions bent on the modernization of traditional societies and their incorporation into the world economy, this new policy direction did represent a conceptual and methodological watershed. Prescriptive assumptions and blueprint strategies about the path to success were challenged, with even the mainstream decision-makers pushed to consider non-Western worldviews. Moreover, the cultural dimension of development was at long last acknowledged, sounding a call for greater anthropological involvement in the setting of development policy and strategy. Citing Green (1996), Escobar(1991:664) notes that the mandate of USAID's New Directions "proved ideologically and methodologically compatible with the training, orientation and practice of anthropology".

Canadian anthropologists responded to this global call for development that paid greater attention to the expressed needs and wishes of those affected by externally generated change. But the emergence here of more participatory anthropological and social science scholarship was also precipitated by made-in-Canada events and contexts.

Perhaps the greatest push came from the rise of First Nations' political movements and organized resistance to several proposed mega-projects in Canada's North. In his article on shifting epistemological prototypes amongst Canadian social scientists, particularly among scholars of Northern peoples, Peter Usher (1993) correctly identifies the Mackenzie Valley Pipeline Inquiry (1974-1977) – commonly referred to as the Berger Inquiry – as having played a pivotal role in the casting of new research questions and directions. Thanks to well-organized Inuit and Dene First Nations' opposition and the inspired leadership of lawyer Thomas Berger, large-scale industrial development projects could no longer be assessed solely on technical merit or by so-called value-free criteria. Rather, they would need to be evaluated in terms of the vision of the people whose communities they would affect (Usher 1993:112). Now common but then nascent research methodologies designed to facilitate this new understanding took root. Social Impact Assessment (SIA) research was one such tool. Usher (1993:109-110) synthesizes the SIA approach well.

Social impact assessment is generally understood as a means of determining how and to what extent specified social groups will become better or worse off as a result of certain externally generated actions. It must therefore be able to specify the nature and circumstances of the social group and the changes that occur as a result of these actions. It must also be able to distinguish these changes from ones that might occur independently. Finally, it must make some value judgment about the changes predicted.

Research approaches like SIA do not represent, in and of themselves, any deep-seated challenge to the cultural hegemony of Western research systems. Having originated within a normative and positivistic framework and derived from practical assessment tools as cost-benefit analysis, economic evaluation and the development of social indicators, this methodology can be and is used to facilitate public policy in the interests of the powerful. SIA is standard practice, for example, within multilateral institutions favouring development models of benefit to western capital generation. What distinguishes the SIA approach used by the more progressive social scientists of this last quarter century is its location within a broader, more critical conceptual framework that examines the social-economic and political foundations and impact of the dominant power structures and, as Usher (1993:113) remarks, "allows for the possibility of

'gesellschaft' or community through struggle". Unlike their predecessors, this new breed of anthropologist, together with social science colleagues outside anthropology, sought and continues to seek direction from the aboriginal and Indigenous peoples they study (see Niezen 1999; O'Neil et al. 1993; Waldram 1993; Asch 1982; Feit 1982). They also began to ask more fundamental questions about developments in the North somewhat akin to the questions raised by resiliency scientists noted in Chapter Two, such as: what constitutes significant or irrevocable change, and to whom is it significant? What is the relationship between such change and adverse effects, and do individuals only experience these effects, or can we speak of cultural impairment? Are there especially critical points of change, and if so, what are their diagnostic indicators? (Usher 1993:113). These were and continue to be critical questions. These activist anthropologists are at long last accepting a more courageous and substantive humanist position. They speak the language of the powerful to the powerful on behalf of the marginalized, at times risking or abandoning their academic positions.

There is nevertheless some danger and continued paradox in the anthropologists' new advocacy on behalf of those without voice, however pragmatic the option. Western insistence on the use of research techniques and a language of power grounded in occidental knowledge systems – "diagnostic indicators" being a prime example – makes the research process itself largely inaccessible to the majority of the researched. As Escobar correctly argues, communities continue to have to "adopt organizational forms and project designs that the donor can recognize if they are to have access to project funds, even if those forms may not reflect community traditions" (Escobar 1991:674). However eager the anthropologist may be to promote cultural self-definitions, more often than not these definitions can't fit into the boxes of the Western donor's management frameworks. The time required for more thoughtful intercultural exchange is also severely circumscribed by deadlines that rarely match the realities of people's lives or the social change process. The rules of the game, therefore, generally remain an outside imposition and the goal in such cases can only be to speak on behalf of these peoples⁴.

⁴ Feminist theorists have called this phenomenon the "politics of location". Given the outsider's embedded representation in the power relations between the North and South, no one has the right to 'speak' for other groups. Only 'authentic' voices, defined to be those on the inside, are legitimate (see Cornwall and Lindisfarne 1994:44 in Gardiner and Lewis 1996:23).

With the exception of selected Indigenous leaders with Western educational backgrounds, most participants will remain on the fringes of investigation. While considerably less extractive, more informative and helpful than the research of the colonial and World War Two phase, this new version of development anthropology does not necessarily represent the more fundamental questioning of Western research systems needed for authentic participation and a less contradictory scholarship. If the subversive mandate of anthropology is silenced, Escobar argues, the development anthropologist is rendered incapable of work that is genuinely transformative. Escobar cites Grillio's self-doubt to illustrate his point:

...but it has to be recognized that in reality the customer-contractor relationship is one in which the power to define what is and is not possible resides usually with the customer [the development agency]. This means that the anthropologist is inevitably caught in a web of compromise ... [T]he question that all this raises is how far are we prepared to go, and on what terms, and yet retain our professional and personal self-respect. (Grillio 1985:9 in Escobar 1991:661)

To Grillio's final question can be added its flip-sided twin, the issue that Firth alluded to in 1938: how many development anthropologists today are in fact willing to be the handmaids of Western capital and politics? Escobar's answer would be the majority. Whether out of personal self-interest or political naiveté, it makes little difference.

Paul Sillitoe's analysis in his treatise favouring a new applied anthropology through the investigation and championing of Indigenous knowledge lends some credence to Escobar's charge, albeit unwittingly. Indigenous knowledge research, Sillitoe (1998:224) advances, sets out explicitly to make connections between local people's understanding and practices and those of outside researchers and development workers, notably in the natural-resources and health sectors, seeking to achieve a sympathetic and in-depth appreciation of their experience and objectives and to "link them to scientific technology". It aims to contribute in the long term to positive change, promoting culturally appropriate and environmentally sustainable adaptations to peoples as "increasingly they exploit their resources commercially" (1998:224). Sillitoe goes on to acknowledge some of the dangers inherent in the intervention, such as the threat of ethnocentrism. He warns colleagues from other disciplines of the importance of "some awareness of anthropological issues to promote an awareness of alterity and its implications"

(1998:228). Sillitoe also comments on the need to negotiate amongst stakeholders in partnership founded on dialogue and an understanding of differing and competing research agendas.

On the surface, these are encouraging words. Indeed, Sillitoe articulates some very worthwhile principles for well-intentioned anthropological research. But he appears to take an Indigenous peoples' march toward Western capital and science for granted, thereby sharing uncomfortable characteristics with those on Escobar's *recycled positivists* hit list. Sillitoe pays very little attention to the broader and arguably more central political issues plaguing research into the knowledge of others. Carmen Ferradas' response to Sillitoe's article in the same publication raises some of these questions. She asks of Sillitoe: "Is development always desirable...[and] how does power operate in development?" (Ferradas 1998:240). Also missing from Sillitoe's somewhat rose-tinted sketch are three related and absolutely fundamental questions that must be posed if participatory words are to have some bite, if the integrity and rights of those studied are to be maintained: Who has the right to produce knowledge? For whom is the knowledge produced? And, how might it be used? This kind of query lies at the core of Participatory Action Research (PAR), a revolutionary research paradigm that has attempted to offer disadvantaged peoples active agency in their struggle for community wellbeing.

Joint Enquiry and Social Transformation

A dialogical research process (Fals Borda 1991a:4), PAR was conceived precisely to assist individuals and groups without the power to control the research process. PAR researchers are openly ideological and passionate in their ambition to promote more inclusive and democratic knowledge production. They want to help dominated or oppressed peoples to explore and articulate their conditions, their knowledge and the most appropriate course of action. The ultimate goal is to promote the personal and community-based transformation needed to end exploitation and injustice.

PAR's roots are substantive, reaching back, as mentioned, into the intellectual protest of social critics in the first part of this century. But it has taken broader-based,

post-colonial rejection of an inequitable status quo and Western cultural imperialism (Fals Borda 1991b:149), for the methodology to gain a solid foothold. Biased in favour of society's forgotten – women, men and groups on the margins – PAR practitioners see no contradiction between goals of collective empowerment and the deepening of social knowledge (Hall 1992:16). Indeed, advocates dismiss the possibility of ideological neutrality, delivering a sharp critique of conventional scholarship which typically, naïvely, side steps the difficult questions about power relations, ideology and material constraints (Chisholm, 1990:252). Not surprisingly, in so doing, they have encountered considerable resistance and exclusion from mainstream academia. The tendency has been to label the methodology as too ideological and insufficiently rigorous, although the availability of excellent literature on triangulation and validation in participatory research (see Lather 1986) should assuage these concerns somewhat. It is the ideological rigidity of PAR's staunchest critics, with positions of authority dependent on Western research systems, that appears to hinder a more widespread rapprochement. Ideological battles aside, there are also some legitimate, systemic difficulties for academic researchers interested in PAR, to be discussed below, that might also explain a reluctance to venture into its waters.

Those who have chronicled the origins and spread of the research approach and ideology – for the sum of PAR's parts is indeed an ideology – generally credit *Third World* social activists for having pioneered the approach. Canada's best known proponent of PAR, sociologist and educator Budd Hall (1992:16), proposes, for example, that the words, "participatory research" evolved in the Tanzanian context in the early 1970s for a practice that attempted to "move people and their daily lived experiences of struggle and survival from the margins of epistemology to the centre". Joan Ryan and Michael Robinson, anthropologists working with PAR in the Canadian North, reach back into the late 1950s, pointing to anthropologist Sol Tax's contribution through his "action anthropology" work with Fox Indians (Ryan and Robinson, 1990:57). Indeed, there have been many solid contributions to its evolution, straddling a number of disciplines. As Hall (1992:16) notes, PAR's development "benefited from an interdisciplinary development drawing its theoretical strength from adult education, sociology, political economy, community psychology, community development, feminist studies, critical psychology,

organizational development and more". Interestingly enough, he does not specify anthropology.

However many hands have molded and nurtured PAR since its beginnings, few would deny that the conceptual framework for this innovative research model, including its three most critical components: action-reflection or "praxis"; the notion of researcher as learner and learner as researcher; and the valuing of the knowledge of the "common people", was influenced by Freire's work on literacy education (1970) discussed in Chapter Two. His censure of the authoritative role of the "expert", and consequent rejection of the compartmentalized, hierarchical specialization of Western knowledge, summoned PAR developers to their methodological battlefield. John Gaventa's (1993:29) review of PAR, "The Powerful, the Powerless and the Experts: Knowledge Struggles in an Information Age", correctly identifies the central accountability problem with *expert* knowledge that PAR challenges:

...underlying all of these elements of the power of expertise is the expert's lack of accountability to the non-experts affected by his or her knowledge. Knowledge production, then, is accountable not to the public interest, not to the needs of the powerless who may be affected by it, but to an ideology which serves to justify the superiority of the expert – the ideology of science and objectivity.

Part of the difficulties that those unfamiliar with PAR have is the absence of methodological orthodoxy, or as Hall (1992:20) puts it, "cookbook approaches". Both the issues addressed and the ways of working should ideally flow from those involved and from their context. In practice, PAR can incorporate a wide variety of well-documented research procedures and techniques. The options are considerable: community meetings, videos, documentaries, community drama, use of drawings and murals, photo-novels, oral histories, household and community surveys, story telling, shared testimonies, appreciative enquiry (see IISD 2001) and a number of innovative community analysis and planning techniques belonging to the latest participatory research approach, Participatory Rural Appraisal (PRA). PRA grew out of the agro-ecosystem analysis and rapid rural appraisal planning within rural development programs during the early 1980s. It was designed to affirm multiple realities and local diversity (Chambers 1994b:1449). Its predominantly visual and/or oral techniques have

proven especially effective in their ability to attract and involve even the most socially reticent in an analysis of their situation and development options. Given my use of PRA techniques during my field research, a discussion of PRA ensues, focussing both on its contributions to more appropriate development intervention and its rather uneasy fit within a participatory action research (PAR) framework built around the goal of community transformation. The discussion relies heavily on the works of PRA *guru*, social anthropologist Robert Chambers, since his scholarship on this methodology is substantive and moves beyond a description of application alone to a discussion of its *raison d'être* and principles.

Like PAR researchers, PRA practitioners hope to shift community-based research process from a primarily extractive mode to one that offers the researched the opportunity to help define and take ownership of the process and its results. Advocates like Chambers tend to place PRA methods within a Participatory Action Research (PAR) ideological framework, insisting that processes should only be called PRA "if they are empowering, especially for those who are poor, weak and vulnerable" (Chambers 1995:37). PRA methods can indeed be implemented within a more comprehensive, transformative program, serving as tools that help build the confidence, awareness and critical analysis needed to overcome marginalization and disadvantage. More often than not, however, researchers use PRA techniques for the less ambitious purpose of soliciting the insider perspective, particularly the voice of those outside community elites. PRA, practitioners believe, helps to improve the quality and breadth of the information obtained and is thus useful to planners interested in sustainable development programming. The International Institute for Rural Reconstruction's (IIRR) workbook on PRA and planning notes, for instance, that the methodology

facilitates the identification, preparation and design of community projects based on the reality and criteria of the inhabitants themselves. This promotes and supports self-reliance and sustainable development (Selener et al.1999:3)

Empowerment and sustainability are advanced; but there is not necessarily a commitment to invest in longer-term processes that are transformative over the long term.

The methods in a PRA toolkit are extensive (Retolaz and Ojeda 1999; Selener et al. 1999; Chambers 1992:13-17). Especially popular examples are: transect walks, whereby local residents tour their community with the researcher to identify geological, agricultural, social or cultural landmarks, discussing problems, opportunities and proposed solutions; participatory mapping and modeling, in which people use the ground, the floor or paper to make social, demographic, health, natural resource or farm maps, or to construct three dimensional models of their land and buildings and other significant features; seasonal diagramming, using graphics and charts to assess livelihood factors such as climatic, agricultural, labour, migration or income distribution patterns; and trends analysis, through drawings, story-telling or charts of community histories, ecological histories, cropping patterns, education changes and other important community directions (Chamber 1992:14-17). Time-honoured anthropological tools like participant observation, involving key informants, and semi-structured interviews also make the PRA list. As Chambers insists, what defines these tools as PRA methods is a commitment to "handing over the stick" to the local folk (Chambers 1994b:1450). The researcher becomes a facilitator rather than the leader and controller of the process, data and decisions.

Warning against dangers like "naive populism" in which participation is considered good regardless of who participates and who gains (Chambers 1994b:1444), Chambers has identified several key principles that help to shape an authentic and effective PRA process. These principles include: direct learning from local people – on site, face to face, and grounded in the local physical, technical and social reality; offsetting biases – being relaxed and not rushed, listening and not lecturing; probing, instead of passing on to the next topic, and seeking out the poorer people and the women; seeking of diversity – seeking variability rather than averages and investigating contradictions, anomalies and differences; triangulating – cross-checking findings through a range of methods; optimizing tradeoffs – not measuring more than needed and accepting the notion of appropriate imprecision; practicing critical self-awareness – continuously examining one's behaviour and embracing error as an opportunity to learn to do better; sharing – treating the ideas, process and the information as the property of all those seeking constructive change; and last, but in no way least, the handing over the stick principle

that facilitates analysis by local people – being willing to sit back or walk away from a process, not interviewing or interrupting (Chambers 1992:13-14). The application of PRA is clearly as much about the researcher's attitude and style as about the method used (IISD 2002).

Missing from this list of principles is one, I would suggest, that should go hand in hand with the last principle, possibly representing the outside researcher's most strategic activity: a commitment to the building of the strategic alliances and action needed for a supportive policy and legislative environment. Its absence betrays a possible crack in the methodology's theoretical foundation, shedding light on the missing element for more transformative outcomes. If the newly empowered are to maintain their hard-won leverage and capacity to effect just change, they must be equipped to deal with the world beyond their immediate borders. To deal with that outside world, they need committed allies prepared to help them to understand it and prepared to engage in joint outsider-insider advocacy.

The PRA literature does address policy change, especially related to the application and normalization of PRA methodology within universities, NGOs and government institutions. The suitability of PRA techniques to develop effective policy is clearly articulated in Chamber's writings (Chamber 1994:1446). But discussion of the broader political and socio-economic forces affecting community-driven change is very thin. Yet, as Sarah White reminds us in her thoughtful article on the uses and abuses of participation, however participatory a research or development project is designed to be, it cannot escape the limitations on this process that derive from the power relations of the wider society (White 1996:13). Empowerment is never a "benign" or static outcome but rather subject to constant negotiation. Without a commitment to the on-going education, dialogue, and organizing linked to the micro and macro forces impeding the rights of the marginalized, handing over the stick may mean letting the chips fall where they may once the initial intervention is completed. Indeed, PRA applications that I have seen fail make this critical mistake. Researchers leave people with process and products that focus on micro-level change when macro-level strategies are also required. Bottom-up, unilateral effort cannot redress power inequities on a larger scale. It really does take two to tango, however difficult the dance!

PRA's shortcomings notwithstanding, there is growing evidence to suggest that when facilitated properly, the information obtained through PRA techniques can offer better insights into community perspective and needs than the researcher-centred methodologies of conventional qualitative research (Chambers 1995:37; 1994:1443; 1992:31; Grenier 1998:41). Among indigenous peoples with alternative worldviews, a PRA toolkit that is less dependent on linear representation and more reliant on visual, interactive techniques and graphics can be particularly useful (Chambers 1995, 1994a and b, 1992; Grenier 1998; IISD 2002).

The chronicling of Indigenous knowledge through the PAR and PRA techniques noted above clearly can also be found in an ethnographer's toolbox. The primary differences between their application by PAR and PRA practitioners and that of conventional ethnographers, rests in the resolution of the former that the researched emerge as researchers and, in the case of PAR, in the commitment to social transformation. Echoing Freire, Orlando Fals Borda (1991a:5), PAR's most prolific champion, insists that the binomial relationship of subject-object must be transformed into subject-subject and an organization of research and "peoples' science" that is not only for the people but is created with them and by them as well. Ethnographers cannot simply leave the community with the fodder for doctoral or post-doctoral theses and books stuffed in their knapsacks. There must be reciprocity in the relationship and a legacy of collective change that will benefit all participants. And if food for academic gain is to be had, those who were at the center of its creation must offer it wholeheartedly. Their authorial role must also be acknowledged up front.

There are reasonably successful challengers to the PAR naysayers, including anthropologists (Smith et al. 1997; Chambers 1995; Nelson and Wright 1995; McGuire 1993; Jackson 1993; Ryan and Robinson 1990). Ryan and Robinson's work with the Gwich'in Dene of Canada's Northwest Territories offers a very solid example of the possibilities of participatory action research, particularly as it required cooperation between diverse institutional and governance structures and levels of authority. Participants developed a curriculum to strengthen residents' knowledge of their language, culture and traditional governance structures that became an important model for other indigenous peoples in the North. A full description of this project is beyond the

scope of this study, but it is perhaps worth listing the principles Ryan and Robinson (1990:62) considered fundamental to their successful experience with PAR. With the exception of their authors' expressed commitment to advocacy work, they resemble Chambers' charter for PRA:

- A commitment to the community controlling the process, from setting the research agenda, through consultant and trainee selection and project development, to budgeting and annual project review;
- A commitment to community ownership and control of all research products and their use. This meant that copyright was retained by the community;
- A strong and continuing reliance on the capability of community adults as trainee researchers, teachers, writers and project advisors;
- A shared commitment to advocacy on behalf of the community on issues of its choosing;
- A commitment to a group dynamic and consensual process of decision-making and a feminist inter-relational approach; and
- A commitment to working oneself out of a job within a specified time.

Ryan's concluding words about her experience with this process synthesize the PAR approach well, challenging Escobar's rather paradoxical reduction of development anthropology into a self-serving, neo-colonial instrument of oppression⁵. "To be able to work this way", Ryan (1990:62) wrote, "it is necessary to hold to the basic belief that the local people know how things should be done in their own ways and no outsider has equal wisdom".

For researchers linked to universities or institutions with a more positivistic bent, or less connected and concerned with communities on the margins, the implementation of PAR's transformational objectives is, of course, not so clear-cut. The need to place the community's needs and interests above professional ones can create a dilemma this writer identifies with all too well. Scholarships, funding, degrees, and careers are often built on products that require advanced planning and design that do not necessarily

⁵ As noted earlier in this chapter, Escobar seems also to have forgotten that within the field of development anthropology there are scholars who have been engaged in the critical assessment of the development industry for some time (see Gardiner and Lewis 1996:68).

correspond to the priorities of the communities studied. Pressures to obtain the information and data relatively quickly in order to meet institutional, journal or funding deadlines are considerable. Competing employment or family priorities also make it hard to commit the time and effort required to understand complex political contexts, let alone to facilitate a sustainable PAR process. Within especially hostile political climates, the advocacy component of the work could pull the PAR facilitator into a struggle requiring commitment well beyond initial expectations. A combination of favourable factors, not the least of which is steadfast institutional funding, are often essential for transformative work, support that is often more deficient than strong.

Nor is the well-intentioned staff of government or non-governmental institutions asked to finance the work spared these kinds of dilemmas. Bureaucratic requirements make their task often more daunting. For these reasons, most would-be participatory action researchers settle for second-best hybrids, using PRA techniques and negotiating terms with the community that are more respectful, equitable and reciprocal than the extractive practices of the past. But they fail to engage in the full-fledged praxis that contributes to broad-based and sustainable community transformation.

In an effort to assess facile claims about citizenship participation in the American Community Action Program of the mid 1960s, Sherry Arnstein (1969) produced a ladder that is useful to this analysis, juxtaposing powerless citizens with the powerful. Arnstein (1969:217) called the first two rungs of eight rungs in her ladder *manipulation* and *therapy* and suggested that the objective of the so-called participation in these cases is to enable power-holders to "educate" or "cure" the powerless rather than have powerless citizens genuinely plan or conduct programs. Rungs 3 and 4 progress to *informing* and *consultation*, levels of tokenism, she suggested, that allow the have-nots to hear and have a voice. But they lack the power to ensure that their view will be heeded by the powerful. As she put it, there is no "muscle" in the participation, hence no assurance that the status quo will be changed. Rung 5, *placation*, means an improvement in the ground-rules, allowing the have-nots to advise; the power-holders, however, continue to have the right to decide. The final three rungs are levels of citizen power that facilitate increasing degrees of decision-making clout. Citizens can enter into partnerships that enable them to negotiate and engage in trade-offs with traditional

power-holders. On the uppermost two rungs, *delegated power* and *citizen control*, have-not citizens obtain the majority of decision-making seats or full-fledged managerial power.

Arnstein admits to a simplification of these groupings but uses this ladder to help illustrate the point that so many have missed. There are significant gradations of citizen power. Knowing these gradations, she insists, "makes it possible to cut through the hyperbole to understand the increasingly strident demands for participation from the have-nots as well as the gamut of confusing responses from the power-holders" (Arnstein 1969:217). Researchers and activists venturing into the complex waters of power sharing must pay close attention to this variation.

PAR advocates clearly strive to place the researched on the top rung of the ladder. However, as with PRA, there may be a gap in its theorization. While there are indeed no cookbook-style recipes for its application, the model itself is often championed as feasible in all local contexts. As long as its core principles guide the implementation process, participation is assumed to be legitimate and sustainable. One size fits all! The complexity and challenges of participatory processes appear to be underestimated.

Redistribution of power at the local level is challenging and complex at the best of times. Leading the charge within a larger socio-political and economic arena is another matter altogether. As with PRA, the PAR literature pays insufficient attention to issues of scale and scope. Critics also accuse PAR practitioners of underplaying intra-group power imbalances that affect the change process. Arnstein's (1969:217) analysis of the diversity within have and have-not groups speaks to this point especially well:

In actuality, neither the have-nots nor the power holders are homogeneous blocs. Each group encompasses a host of divergent points of view, significant cleavages, competing vested interests, and splintered subgroups... [although] in most cases the have-nots really do perceive the powerful as a monolithic "system" and the power holders actually do view the have-nots as a sea of 'those people', with little comprehension of the class and caste differences among them.

The dichotomization of the powerful and powerless into monolithic opposing actors, united in their political and social-economic positioning, can also be found in post-modern scholarship addressing popular or new social movements (Gledhill 1993:190). Popular resistance movements and the State are sometimes treated as internally united

forces in an all or nothing battle between justice and oppression (see Gledhill 1993:190-192 on Escobar; Veltmeyer 1997). As with Arnstein's observation, Gledhill's (1993:190) warning to those simplifying the complex and multi-faceted struggle for social justice is on the mark:

'Cultures of resistance' are historically enduring despite the ebb and flow of mobilizations, crushing defeats and periods of temporary quiescence. What we should avoid doing is transforming social movements into unitary 'actors' devoid of internal contradictions and contradictory tendencies, and isolating them from the larger social, cultural and political fields within which they experience ebbs and flows.

Citing Orin Starn's (1992) studies of Peru's *Rondas Campesinas* – a peasants' social change movement that developed "to deal with the deficiencies of the official justice system" (Gledhill 1993:191) – Gledhill goes still further in his critique of these post-modernist, reductionist tendencies. Their preoccupation with identity, he argues, is often at the expense of discussion about tactics, strategy, interests and the organization of people who are driven to act by "often quite elemental matters of scarcity and survival" (Starn 1992:93 in Gledhill 1993:190).

Ute Bühler's excellent paper exploring recent critique of *participation* as a new tyranny (see Cooke and Kohari 2001⁶) adds an additional analytical wrinkle to the problem. The proclivity of social activists to homogenize groups on the margins into a united movement with one clear vision can further marginalize participants. Their individual perspectives and ability to steer their own course are sacrificed for what others consider the greater good. Bühler (2002:8) cautions:

The decision on the scale of politicization and struggle that is most compatible with the dignity of those who have been excluded can be very complex and very difficult... Uncompromising insistence on fundamental change may not necessarily be the stance that is most respectful of the autonomy and dignity of the particular people who are struggling for their livelihoods and their rights to participate here and now.

⁶ Cooke and Kothari (2001) and the scholars in their edited collection argue that much of the so-called transformative, participatory work that development practitioners claim as their forte fails to acknowledge the diversity of participants, the political complexity in participatory work and the power and self-interest of the outsider. I came upon this study late in my research process and was pleased to note this collection's confirmation of some of my own concerns.

Moreover, when a particular group is drawn into a larger movement, there is the potential, as Bavikar has argued, for that group to be "excluded as the conscious subjects of their own history...incorporate(d) only as an element in another history with another subject" (Baviskar 1995 in Buhler 2002:8).

Most PAR facilitators are genuine in their campaign to help the marginalized to become central actors in their own history. But with notable exceptions (Ryan 1990), the literature tends to gloss over the tactical and strategic questions facilitating or impeding participants' emergence as protagonists in the change process, particularly when the boundaries affecting change extend beyond community borders. Arnstein, Gledhill and Buhler's call to reflect carefully on the diversity of local experience, on the motivation for change at the base (see Loyda Sanchez 2002), and on the issue of scale is wise advice for those truly interested in the rights of people with quiet, often silenced voices. These scholars would no doubt agree, however, that the alternative is not to throw the baby out with the bath water. Attention to identity is also strategic. Meaning construction and interpretation are tightly bound to one's sense of self and to one's interaction with another. As John Paul Lederach (1998:8) reminds us in his insightful work on peace-building and cross-cultural conflict transformation, "social conflict emerges and develops on the basis of the meaning and interpretation people involved attach to action and events".

In sum, PAR enthusiasts correctly stress the importance of assisting the disenfranchized to move into the center of the development equation and take control of their lives. But the theory guiding this approach does not address, in any substantive way, the strategies, knowledge and skills needed to stay in charge, especially when powerful and unfamiliar opponents come knocking at the door. The interculturalism approach – *interculturalidad* – gaining considerable currency in Latin America is possibly a more strategic option for indigenous peoples and outsiders hoping to end lopsided intervention. This chapter turns now to a critical review of interculturalism and to a proposed adaptation of this model that I have called, "intercultural reciprocity".

Intercultural Reciprocity

Within Latin America, the concept of *interculturalidad* or interculturalism developed alongside the participatory approaches noted above, establishing roots first in the education sector but emerging today as a cross-cutting component in the research and development programming of a growing number of NGOs, government Ministries and multilateral institutions. Interculturalism is an approach to interaction between and within cultures that insists on the two-way education and power-sharing needed for more equitable exchange (Cassio and Tomaselli, 1990; Aikman 1999). Lopez cites the early 1970s acculturation-prevention work of Venezuelan linguistic anthropologists, Mosonyi and González, among the Arhuaco of the Rio Negro, as having launched the concept in Latin America (Lopez 2001:18). Interculturalism goes one step further than mainstream participatory processes that, in their application at least, have been unidirectional, too often focussing on the outsider's need to understand and respect the world of the insider. The approach values what Lockhart (1984), in his insightful article on the insider-outsider dialectic in Native socio-economic development in Canada, aptly describes as two kinds of knowledge: the intimate insider knowledge of community process and the knowledge of the outside opportunity structure. And it is a concept that not only considers the power relationship between distinct cultures but the diverse sub-cultures within more homogenous groups as well, such as the youth and adult subcultures of an ethnically homogeneous cultural group, for instance (Lopez 2001). Though not directly commented upon in the mainstream literature I reviewed, the concept also lends itself well to indigenous beliefs about the connection and interdependence of all living and non-living matter on earth, a co-management, co-responsibility principle that distinguishes it from PAR's predominant focus on the rights and demands of the marginalized. About Indigenous views of *interculturalidad*, Grimaldo Rengifo of Peru's PRATEC notes, "we bring interculturalism into the conversation by balancing the diverse modalities of relationships between humans and nature" (Rengifo 2000:13). In another publication, citing Grillo, Rengifo (1991:36) writes, "Andean society conceives of the cosmos as a totality, in that everything is connected and no entity is perceived as resting on the margins of other beings". Luis Enrique López captures the broader Latin American interest in this framework well:

We need this concept to analyze and design action to promote dialogue, dynamic interaction and relationships between societies that, however socially, culturally and ethnically distinct, need to share space and practical, everyday living in an atmosphere of mutual understanding and respect... That is why this concept is seen to be critical to the construction of a new democratic project in Latin America based on the principle of inclusion of indigenous societies that until recently were excluded from the national agenda (López 2001:28).

There is a very pragmatic orientation within interculturalism. Interaction between the outsider and insider is built upon a negotiated agenda and process that will help both the outsider and insider to appreciate their distinct perspectives, experiences, often-competing interests and the long-term benefits of designing a path forward that is just and acceptable for all concerned. Power imbalances and competing interests are acknowledged from the start, with efforts made to mitigate these imbalances and redistribute power through dialogue and structured interaction that is accessible and rooted in a spirit of cooperation. The concept essentially grafts Freire's (1970) call for an end to the teacher-learner divide and his promotion of praxis – action and critical reflection – onto participatory and cooperative conflict resolution methodologies. Effective intercultural facilitators appreciate what Lederach (1995:8/10) considers to be essential understanding for the achievement of meaningful conflict transformation:

Conflict [hence harmony] is connected to meaning and meaning to knowledge, and knowledge is rooted in culture... People act on the basis of the meaning things have for them. Meaning is created through shared and accumulated knowledge. People from different cultural settings have developed many ways of creating and expressing as well as interpreting and handling conflict... Understanding conflict and developing appropriate models of handling it will necessarily be rooted in, and must respect and draw from, the cultural knowledge of people.

Not surprisingly, like much development strategy promising more effective and meaningful process, the application of *interculturalidad* has not measured up to its promise. The concept is touted as important; but adoption has been hesitant, ambivalent, devoid of a wholehearted understanding of its meaning or value (Aikman 1999). As with PAR, even those singing its praises have trouble practicing what they preach. Opposing priorities, funding constraints, donor-driven timelines, naiveté and difficulties in reconciling alternative worldviews, values and educational practices present

very real challenges for the effective integration of the concept into programming. Many of the Westerners involved also continue to speak an incomprehensible language to those inexperienced in Western ways of knowing, having failed to drop the paternalistic thinking of occidental advantage. And there are, of course, those agencies that intentionally use the progressive language of interculturalism to implement programming that is ultimately assimilationist in nature (Aikman 1999).

One of the more fundamental problems with the application of interculturalism has been the tendency to confuse it with biculturalism. In her excellent review of interculturalism within Latin America and more particularly intercultural education within the Peruvian Amazon, Sheila Aikman (1999:20) concludes that more often than not definitions of interculturalism have in fact been based on the notion of two distinct cultures rather than the interrelationship between them. This orientation implies that "someone can function in two distinct cultures simultaneously and to an equal degree" (Trapnell 1984 in Aikman 1999:19). For Pozzi-Escot, such assumption is particularly inappropriate in the case of Indigenous peoples, for whom the two cultures are not only fundamentally different but also antagonistic (Pozzi-Escot 1990 in Aikman 1999:19). Indeed, citing Mino-Garces (1982), Aikman (1999:20) advances that the mutual understanding and respect that should exist between two or more cultures rarely exists. The application of interculturalism in Latin America often represents a more disguised form of assimilation.

Another clear sign of the continuing gap between theory and practice is the absence of Indigenous leadership on the decision-making bodies that govern intercultural programs. Bolivian staff with the United Nations Fund for Population Activities (UNFPA) that I interviewed for my study, while presenting a very eloquent and sincere defence of their agency's integration of intercultural principles and education into their field programs, could not come up with the name of a single Indigenous leader on the program's governance board (Sucre-based interviews with UNFPA's intercultural and communications' program managers, October 2000). Frolian Condori, President of the Consejo Educativo de la Nacion Quechua (CENAQ) in Bolivia, an Indigenous organization promoting Quechua peoples' rights, had this complaint: "Donor

organizations", he said, "consider round table consultation meetings sufficient⁷. The Quechua people, on the other hand, want to have an equal voice within the key decision-making bodies" (paraphrased from an interview in Spanish on December 11, 2000). Unless existing power structures based on hierarchical relations are redressed, the process reflects an inegalitarian interculturalism favouring the dominant society.

In addition to a failure to share decision-making over programming and budgets, intercultural research and planning methods used have likewise tended to ignore the reciprocal learning needed for sustainable and just change. In practice, as with PRA and PAR, micro-level issues have been emphasized in a one-sided investigation of Indigenous ways of knowing. Programs that assist Indigenous communities to understand the broader social, economic and political forces that they are up against so they can make informed decisions about their alternatives and negotiate on more solid footing are simply few and far between.

Finally, and again like PAR and PRA, the literature that I have reviewed generally does not address the issues of scale, scope and timing adequately, particularly as they relate to the matter of cultural meaning and divergent worldviews. To assess this issue, we can turn to the resilience principles adapted from Simon (1999) presented in Chapter Two, as well as to Lederach's (1995) conflict transformation theory. To build trust there is a need to pay careful attention to the scale and breadth of the desired action or change. Small tangible victories create an opening for the resolution of more difficult challenges. The trust-building essential to an effective intercultural process can only be built piece upon manageable piece under terms that consider the number of actors suitable for such negotiation and the time it takes to understand the other's construction of meaning. Many of the Latin American community or regional round tables and networks that boast a participatory, intercultural framework for community or regional planning, for instance, fail to consider these issues when they bring the key actors together to plan. Even when the legitimate representatives of those on the margins sit at

⁷ Aminur Rahman's (1999a:92) study of Bangladesh's Grameen Bank credit program for women sheds light on this issue. One participant in a workshop designed to facilitate borrowers' ability to enhance their social status and exercise greater control over their lives, had this to say: "Sir and apa (male and female speakers) were from the city and they were very educated people. They talked and talked. Many times I could not understand what they were talking about. Other times they were talking about things which we already know..."

the table (not always the case), the much higher representation from the dominant society and the scope of the venture often overwhelm representatives of the excluded. They do not feel connected and thus are unable to participate in meaningful ways. Being offered the opportunity to speak up is simply not the same as having the information and confidence to speak out (see Rahman 1999a). Biting off smaller chunks of action to negotiate can also provide a reasonably good signal of whether intercultural exchange and negotiation, a process I will hence call intercultural reciprocity, is the best route to redress inequities and rights. Negative experiences with less ambitious goals will rightfully steer the disadvantaged onto another course of action, without the exchange having caused too much damage.

Lederach (1995) makes another important point about the peacebuilding across cultures that is relevant to this discussion about process guiding intercultural reciprocity. Within cooperative conflict resolution and negotiation processes, the opportunity to be heard and the ability to listen are core ingredients for success. But these skills are not necessarily present from the start. Lederach (1995:12/13) reminds peacemakers that they face different tasks at different points in the process. When awareness is low and power imbalances high, education is first in order, as is advocacy and confrontation. Mediation is effective when awareness is high and the power is balanced enough to permit negotiation. To be effective, intercultural dialogue and interaction requires an analysis of the parties' respective readiness and capacity to engage in meaningful exchange.

There are some hopeful, though limited, examples of processes that approximate intercultural reciprocity. Within the agricultural field, for example, there are some very encouraging attempts at balancing the research equation, although I have not had the opportunity to investigate these examples in any depth. Dutch scientists Bert Haverkort and Wim Hiemstra (1996), in close cooperation with a number of Southern NGOs, academic institutions, and Indigenous peoples' groups, for example, have supported the development of a research framework built on intercultural dialogue and negotiation that looks very promising. Their path to this alternative approach is worth repeating:

After years of striving to enhance agriculture by making better use of locally available knowledge and resources, we came to the conclusion that our perspective on Indigenous knowledge was utilitarian: we had

examined the whole of Indigenous knowledge, selecting those parts which we considered useful. But we had failed to see the holistic nature of most Indigenous knowledge and did not understand its internal logic. This realization led us to take the initiative in trying to understand the worldview or 'cosmovision' of a number of local communities, focussing on how these communities have organized themselves, how they learn, experiment and adjust their way of life. (Haverkort and Hiemstra 1996:23)

In response, Haverkort and Hiemstra launched the COMPAS program based on intercultural dialogue between scientists, NGO workers and local farmers from ten countries spanning four continents. On the value of this approach, they write:

The establishment of a complementary relationship between conventional science and Indigenous knowledge and cosmovisions can only be realized when conventional science and Indigenous knowledge can take part in reciprocal dialogues with respect for one another's realities. (Haverkort and Hiemstra 1996:24)

There are other important intercultural exchange efforts in the field of agriculture designed to nurture a blending of the best of Indigenous science with the best of Western science. "In-situ" or on-farm conservation efforts, noted in the introduction to this thesis, draw scientists and farmers together in plant-breeding efforts to maintain and enhance diversity (see Nazarea 1998; Zimmerer 1996; RAFI 1995; Elings 1999). This cooperation requires negotiated terms of reference based on respect and a desire to learn from each other's knowledge systems. The Community Biodiversity Development and Conservation program (CBDC) is a good international example. Funded by Canada's International Development Research Institute (IDRC), the Swedish International Development Agency (SIDA), the government-funded Dutch NGO, Hivos, and the Norwegian Development Agency (NORAD), southern and northern NGO partners, research institutes, community-based organizations, and farmers come together to engage in on-farm varietal selection, conservation work and plant breeding programming (Elings 1999:1) In an effort to enhance the equity and sustainability objectives, political and public policy issues are also addressed.

There are still lessons to be learned, however. Zimmerer (1996:9) argues, for instance, that the complementarity in some "in-situ" programming has not always "considered the changing ecological, social and cultural roles of biodiversity", a reflection

perhaps of a continued, albeit inadvertent, treatment of indigenous cultures as exotic but static. Nor have implementers – generally agronomists, plant botanists and plant geneticists – always given sufficient consideration to the internal political ramification of their intervention, such as the divisions that can emerge when some farmers are privileged over others (see Nazarea 1995). For sustainability, both outsiders and insiders must investigate and acknowledge the important political, economic and cultural factors affecting the intervention and address them as close to the outset of the process as possible. To be authentic and liberating, interculturalism must strive for justice through open acknowledgement of the political dimensions of the relationship. Only when significant power imbalances are addressed will participants feel authorized to engage in experiential, experimental and relational learning. They must, of course, also be willing to change. Aikman's (1999:21) synthesis of interculturalism drives this point home. Interculturalism must

be a means of moving toward a more just society as part of a dynamic process of interaction and communication between members of different cultural traditions which are themselves changing as a result of interaction between them.

Listed below are principles that I consider fundamental for the development of an intercultural reciprocity framework for interaction between Western development agencies and indigenous peoples:

- The interaction must be strategic, focusing on long-term interests versus short-term gains.
- Participants must acknowledge their shared responsibility for successful exchange and interaction and must therefore be willing to invest a reasonable amount of time into the negotiation and exchange.
- To initiate the relationship, the program or programming should be modest, at a scale that facilitates the active participation of the representatives of all the key parties involved.
- Obstacles to the substantive participation of all parties must be named from the start, addressed, and removed or mitigated to every extent possible.
- If power imbalances between the parties are significant, preliminary internal work, education, research and advocacy is required, both to

strengthen the negotiating capacity and leverage of the disadvantaged party and to enhance the cross-cultural awareness of both the dominant and the disadvantaged group.

- If significant power imbalances persist, the negotiations should cease; the disadvantaged should consider alternative, broader-based advocacy work or pursue legal and public policy avenues when appropriate and feasible.
- The program agenda, goals, and terms of reference for the interaction should be negotiated using consensus, not a majority vote.
- Governance of the joint programming should be shared between the primary parties on an equal basis, including budget preparation, control and accountability measures. In cases where the marginalized have insufficient experience for legitimate participation in financial management, an independent representative or small team of representatives of their choice should be engaged to represent the group and provide training.
- If the interaction involves research and research products, the community being studied or affected should determine the ownership and control mechanisms.
- Each partner or party must demonstrate a willingness, however hesitant in the initial stages of the interaction, to learn about the others' ways, meanings and systems as well as an openness to teach others about their ways, meanings and systems. The interaction should be treated like a strategic alliance for mutually beneficial change.
- Alternative worldviews and differing knowledge frameworks, including their spiritual dimensions, should be acknowledged as valid and on an equal footing. The strengths and shortcomings of each system to deal with the problem or goal at hand should be discussed openly. Tools used for research and planning should consider these alternative knowledge frameworks.
- The dynamism, agility, and interdependence of cultures must be recognized and essentialist positions avoided.
- In view of the strategic benefits of more equitable interaction, all parties must demonstrate flexibility and a willingness to live with compromise that might involve some level of loss, contradiction or discomfort.

In his contribution to Posey's (1999) compilation of scholarship on the cultural and spiritual values of biodiversity, Daniel Cabixi of Brazil's Paraci challenges his people to conduct a critical analysis of both Indigenous and Western ways so that they might find "points of correspondences" that will contribute to a more balanced approach to our collective management of the planet. Intercultural reciprocity, properly applied, discovers these points of convergence and promise. Cabixi (1999:134) concludes:

Our youth must be given information produced by Western society and be allowed to analyze and criticize both Indigenous and Western ways. A critical analysis of these values must be made, determining at which point there are correspondences for better human, religious and spiritual understandings... Both the Indigenous and Western ways must be placed at the same level of importance for the comparison.

But as suggested above, old habits do die hard! Where the power imbalances are irreconcilable, such as that between fragile indigenous communities and "profit-first" corporations, or the cash-hungry governments in the pockets of these corporations, broader-based international coalition work and legal redress within national and international courts seem a more realistic path forward. NGOs genuinely wanting to practice the justice messages they preach may be the most appropriate organizations to pioneer intercultural reciprocity with their Indigenous partners.

For researchers operating within a Western academic framework, sharing control of the research agenda and financing is also possible, although hardly straightforward. Graduate students tied to circumscribed research grants face a particularly difficult journey in their quest to practice more equitable and reciprocal process. It is expected that the research plan they head to the field with will be changed or amended once they get to know the context and possibilities better. This flexibility, however, generally does not extend to an open-ended process that would allow the researched to determine a research question that is significantly different from that in the initial proposal. Up front funding to explore the possibilities is rarely available. Nor do inexperienced students necessarily have the time or skills to facilitate such process. Those wanting to implement alternative approaches generally find themselves adopting a "best they can do" cross of the old and new, one that involves some negotiation, intercultural dialogue and intercultural negotiation. This best effort is nevertheless compromised by the need to

skip essential steps, particularly in light of the funding and time constraints of the enquiry.

My experience among Indigenous potato farmers in the highlands of Northern Potosi represents such a case study in a compromised participatory process. Arnstein would probably place my research communities just above the “placation” rung but short of the “participation” ones – advisors but not empowered negotiators. My Participatory Rural Appraisal (PRA) orientation included the negotiation of the terms of our relationship and an opportunity for those from both outside and inside the leadership elite to influence my interpretation. My research communities could, of course, turn me away at any time, and indeed would have if I had blundered badly. Within six months of my initial departure, I returned to give a slide presentation of my research findings to both of my focus communities and presented them with a photographic report that included a short summary of my principle observations and recommendations. An abridged Spanish version of my findings also went to my NGO host. Still, I was the one who proposed the research agenda and ultimately exercised control over the process and the final product of our collective effort. Chapter Four offers a more detailed look at my *hybridized* process.

CHAPTER FOUR

FIELD RESEARCH METHODS: APPROXIMATE BUT GROUNDED ANTHROPOLOGICAL ARCHITECTURE

It is better to be approximately right than precisely wrong!
(Keynes in Chambers 1992:14).

The elimination of *donut-style* research – a mining approach that leaves the researched staring into an informational crater once the researcher departs – is easier said than done. When researchers head to the field, institutional, methodological and theoretical constraints leave many with a “best one can do under the circumstances” option. But a “best one can do” approach should not be confused with permission to enter into a stranger’s territory with only the “best of intentions”. It clearly takes more than good intent to complete responsible and useful applied anthropological research. Every effort must be made to ground one’s research in processes that are ethical, appropriate within the local context, respectful of the people whose lives the research touches, and sound methodologically. Table I provides a synthesis of the research methods I implemented in an attempt to practice solid and accountable scholarship. It captures my blending of more conventional qualitative research practices with methods reflecting my interest in the application of Participatory Rural Appraisal (PRA) techniques and principles. Of the four qualitative field research methods I chose, three were especially conducive to a PRA approach: participant observation, informal and semi-structured interviews, and an intensive PRA workshop. The fourth, a benchmark household survey, was more conventional in its orientation. Beginning with this last method first, this chapter discusses each of these four methods, presenting selected observations about their respective contributions and shortcomings. Before proceeding with a presentation and assessment of my methods, however, I want briefly to address five issues of relevance to this discussion on my field research methods and experience:

my professional background, given its direct influence on my research experience and findings; the authorization process I engaged in to launch my community-based study; the confidentiality of informant interviews and observations; my use of translation services; and my reflections on the parameters of qualitative research, whether within or outside a participatory research framework.

CONTEXTUAL CONSIDERATIONS

First, I should make clear that my interest in the “rise and failings” of international development assistance among indigenous peoples long preceded scholarly interest in the intersection of Western and indigenous knowledge systems. Over fifteen years of employment and extensive travel as a manager of development assistance programming – first in Asia, then in Latin America – inspired my decision to begin doctoral studies in anthropology. I had stepped into the development field in 1984 when community participation was the latest buzzword. Nagging concerns with practices that appeared to be hindering rather than strengthening marginalized peoples’ capacity to shape better futures nurtured a desire to take a closer look at the dynamics of this development intervention through part-time, and eventually full-time, anthropological scholarship. Thus, while I was new to the district that hosted my doctoral research, the observations, analysis and recommendations within this document are not simply the outcome of coursework, literature study and an all too short year of field-based research. This study is also the product of almost a decade of interaction with Andean peoples and just under two decades of work in the field of international development assistance.

My research journey into the Bolivian communities of Chimpá Rodeo and Mojón began in the Sucre-based headquarters of a regional NGO, Instituto Politecnico Tomas Katari (IPTK), recommended to me by an NGO colleague from La Paz. IPTK, as will be seen in Chapter Six, has been working in the communities’ home province of Chayanta for over a quarter century and within their regional municipality of Ravelo since the early 1980s. Interested in the questions I hoped to explore, IPTK and I negotiated a research protocol that included: the assistance of IPTK field staff with the implementation of my research; the generous provision of a research base in one of their four field offices once I had identified my communities; and my commitment to providing a Spanish-language

document capturing my principal findings. IPTK's solid reputation in the area enabled a very pleasant and straightforward entry into the region and my subsequent ability to obtain written permission to proceed from the appropriate local authorities.

Heeding IPTK's advice, I first sought verbal permission to explore the possibilities within the region from the head of the farmers' union movement for the district. To my delight, the *autoridad maxima*, Don Angel, offered his support. Once I had identified my two primary research communities, he prepared the way for my formal request for permission from the sub-district level of the farmers' union. Obtaining sub-district and community-level permission proved, however, to be a different process for each of my two host communities.

With respect to Chimpa Rodeo, I requested the sub-district authorities' permission to work in their sub-region during a meeting of local *dirigentes* or union leaders. Although having to wait several hours for the meeting to start – a delay that proved to be fairly common given the farming responsibilities of those in attendance – the permission process went quite smoothly. After an introduction by the IPTK extension worker, I presented my research objectives and plan. I outlined my process, my commitment to an ethical approach, and to the confidentiality of individual informants. I also committed myself to the presentation of an oral and written report to the participating communities once the research was complete, a promise I was able to keep in May 2001. The *autoridad maximo*, Don Angel, added his endorsement of my proposed research and a lively discussion ensued in Quechua, which included, I was told, a thoughtful discussion about the pros and cons of such research. Once in agreement, representatives with signing authority, including Chimpa Rodeo's *dirigente*, reviewed, stamped and signed the permission form that I had prepared in advance.

The next day, IPTK's extension worker, together with two local leaders, helped me to identify families in Chimpa Rodeo who might be willing to participate in a benchmark household survey. In an effort to formulate a representative group, we identified families that would reflect a sampling of the three different levels of livelihood security within the hamlet: subsistence; semi-subsistence; and *excedentaria*, a term the NGO community in this region used to refer to those able to accumulate some capital and invest in modest capital infrastructure, at least when market prices were favourable (Choque 1999). To my surprise, the wealth ranking that the leaders conducted gave considerably more

weight to the number and kind of animals a family owned rather than to the annual family income or the condition of the homestead's infrastructure. Early on in my study, I was offered an important signal of the differences I would encounter between western and Indigenous understanding and perspectives.

Each family was subsequently approached about the study and informed through translation about the purpose of the research and the benefits the study might bring to the community, such as the gathering of information of potential use to programming related to crop diversity and the conservation of their *saber Andina* or indigenous knowledge. With one exception¹, all families that were initially approached agreed to participate, the extension worker providing signed testimony of their verbal permission to proceed. Obtaining written permission from participating families was not feasible, nor appropriate for that matter. Literacy levels within the community were low and I did not consider a request for this level of trust at such an early stage in the process to be appropriate or ethical.

Community approval of a participatory rural appraisal workshop in Chimpa Rodeo was also facilitated through the local union leader. The *dirigente* issued a written *convocatoria* or notice for residents to attend the meeting. With the help of IPTK staff and visual aids, I presented an overview of the entire research process to the community, noting my personal goals and how I hoped the research might also benefit the community. A workshop agenda was also proposed, with options for a shorter or longer session to be implemented over two consecutive days. Through consensus, participants agreed to participate in the research and to the longer workshop agenda, as long as the proposed duration was respected.

Obtaining the authorization of the people of Mojón required a slightly different tack. There were no sub-district meetings scheduled during this phase of my plan. Several of the community authorities of this sub-district, including the Mojón *dirigente*, were tending fields in their valley lands. However, the *autoridad maxima*, Don Angel, did speak with the acting *dirigente* in Mojón. With the help of IPTK's extension worker, I was granted

¹ Interestingly, when my IPTK colleague and I visited with this young farmer, a leader who had participated in some of IPTK's training programs, there was a friend present from Sucre who discouraged participation. He suggested that the work of outside researchers generally was of little direct benefit to the researched, a point not easily refuted. This farmer eventually demonstrated interest in the research, as evidenced by his participation in the PRA session and his willingness to allow me to interview his father, one of the most senior residents of the hamlet.

verbal permission to proceed with a community meeting to discuss the research, including my wish to carry out household surveys and my interest in conducting a PRA workshop. Participation in the meeting was solid, despite the absence of a few leaders. Support was approved, with several families lining up to register for the benchmark survey after the meeting was over. Written permission from the *dirigente* was eventually obtained once he returned from the valley.

This unexpected but welcomed volunteering would complicate, I thought, my intention to choose a representative cross-section of families as had been the case in Chimpa Rodeo. I was soon to learn, however, that the overwhelming majority of families in Mojón were of a similar stratum, largely subsistence farm families, producing and selling little surplus produce.

In both communities, my expressed desire to document and celebrate the culture and skills of these Jalq'a stewards of potato diversity seems to have contributed to approval. Mojón residents appeared especially keen to have me champion the issue of potato diversity and to recommend the steps needed to conserve and recover native varieties they seemed to be losing at an all too rapid rate. IPTK's solid reputation in both communities no doubt also influenced a positive reception.

In preparation for my intensive community-based research, I also made a courtesy call to the mayor of the municipality, a former IPTK employee and member of the IPTK Board of Directors. This contact, which eventually included an in-depth semi-structured interview soliciting the mayor's views on the development challenges within his municipality, proved helpful to my work in the region, but not central. From the beginning, it was clear that consensus-based authorization from the various levels of Jalq'a authorities directly involved in community governance was the key to an open door.

The ethical process that I outlined for my institutional and community hosts during my initial meetings with them, included assurances that the names of individual informants would remain confidential. Such promised confidentiality, however, proved an unexpected dilemma. Some of my informants, most particularly my indigenous informants, wanted and deserved direct acknowledgement for their insights and contributions to the analysis shaping this dissertation. In some cases, such acknowledgement would not be a problem. There were others, however, whose insights,

although equally valuable, were of a more critical and controversial nature. Open acknowledgement of their contributions risked some backlash. I decided, finally, that, when appropriate, I would acknowledge my principal informants in a general way, through the use of their first name and, if applicable, with the respectful salutation *Don* or *Doña*. Thus, while their assistance is acknowledged, their names have not been linked to a particular commentary or point of view. For too long, Indigenous peoples' voices have been silenced or lumped into a homogenous "Indigenous" perspective. My use of some first names, however limited, reflects my attempt to acknowledge the many and diverse Indigenous voices that help to shape this narrative.

My need for Spanish-Quechua translation obviously also influenced my experience, affecting my grasp of the culture and relationship with the people I sought to understand. In the short time available prior to field research, fluency in Quechua was not feasible. However, participation in elementary Quechua language courses during those early days did enable an exchange of basic greetings in Quechua that residents appeared to have appreciated, I also gained an appreciation of the structure and character of the language. For interpretation services, I thus depended on IPTK's extension workers with, according to their own reports, about an 85-90% proficiency level in Quechua. When the *tecnicos* were not available, local residents with about 85-90% fluency in Spanish helped out. This communication fissure clearly affected my relationships with locals unable to communicate in Spanish, particularly the women, since most were unilingual Quechua speakers. The observations and findings in this dissertation must clearly be considered with this deficiency in mind.

I did discover a silver lining to this language cloud, however. During community meetings when Quechua dominated the discussion or when I found myself alone with women who were unable or too shy to speak Spanish, I was able to pay attention to detail and activity that might have been precluded with concentration on the main conversation. Tensions in the faces and bodies of those listening to a speaker's point of view, for example, sometimes told a different tale than that on the public record. Women's comings and goings during meetings, young children in tow, became far clearer, as did their location on the edges of decision-making circles. It seems worthwhile to recall here Stanley Barrett's reminder about the anthropologist's need to complement verbal reports with observations of behaviour. Citing Arensberg (1954) in

his influential article on The Community-Study method, he notes "in anthropology, the focus can never be solely on what people say; instead, it is on the relationship between norm, act, attitude and behaviour" (Barrett 1996:111).

I also discovered a very pleasant camaraderie with women with whom non-verbal communication was my only option. Whether peeling potatoes together, their speed putting mine to shame, dancing arm in arm during a festival, laughing together at chickens fleeing the butcher's knife, or exchanging a smile over a young child's new discovery, there seemed to be a connection that transcended the need for language. I especially remember moments when one of my women friends and I would catch each other's eye and grin while a Spanish speaker, usually a powerful male, would go on and on and on. Translation to help us communicate with each other was of course much appreciated when available. But our silent friendship proved to have its merits as well. I was also afforded an unexpected and, in my rather garrulous culture, rare opportunity to ponder first-hand what knowledge transmission and learning without words could be about!

The exigencies of a Western university research framework, as suggested in Chapter Three, clearly limited my ability to engage in process that placed my participants at the front and center of the research, determining the focus and leading the way. To the extent that I could, I applied PRA principles that offered research participants a good opportunity to shape my interpretation and understanding of their world. But I cannot claim to tell their story as they might tell it, or to tell it on their behalf. Miriam (1998) has identified a number of characteristics of qualitative research methodologies that capture the possibilities and parameters of the process I followed. These include: an overall interest in understanding the meaning people have constructed; the inductive approach to knowledge generation; the focus on gaining the emic, or insider's perspective; the inclusion of the researcher's own perception in the identification of meaning; and the centrality of the researcher as a primary instrument for data collection and analysis (Miriam 1998 in Ellerby 2000:27). Miriam's last two points are especially relevant to the social constructivist and connectionist perspective on knowledge generation and transmission guiding this dissertation. If knowledge is indeed "produced in the process of interaction" and a product of interaction that is "critical, engaged, personal, and social" (Lusted 1986 in Giroux 1987:18), I became an architect versus a recorder of reality. The

account of the Jalq'a people within this dissertation reflects, therefore, my construction of their story based on my values and the connections I made between my life and work experiences, the writings of scholars and development thinkers, and the reports and teachings of the Jalq'a participants and local extension workers with whom I interacted.

Quality architecture, we all know, requires the construction of a solid foundation with strong materials, a grounding that is not easily demolished or, in the case of anthropological architecture, refuted. In Patti Lather's article on the need for rigor in openly ideological research, "to protect our research and theory constructions from our own enthusiasms" (Lather 1986:67), she correctly argues in favour of validity checks that "push us towards becoming vigorously self-aware" (Lather 1986:66). She proposes four "validity checks" that resemble some of Chamber's key principles for an effective PRA process. These checks proved especially helpful to my inquiry. They are: *triangulation* through the use of multiple data sources, varied methods and the seeking of counter patterns as well as convergences; *construct validity* analysis through the juxtaposition of observations, data and document study with *a priori* theory to determine whether the data fits or changes the logic of the theory that influenced the research; *face validity*, a recycling of the analysis back through a sample of respondents and *catalytic validity*, the degree to which the research process "re-orients, focuses, and energizes participants", a process akin to Freire's "conscientization" and Chambers call for empowerment (Lather 1986:67). My participatory research process, as suggested earlier, was clearly less successful when measured against this last criterion. There was simply insufficient opportunity or time during my primary research period from January to December 2000 for the follow-up required to realize full-fledged catalytic validity.

Validity checks notwithstanding, I would like to stress that I consider this dissertation a reflection in essence of my discovery and interpretation of the culture and experiences of the Jalq'a potato farmers of Chimpa Rodeo and Mojón. The following assessment of the primary methodologies I used sheds light, therefore, not so much on how my methods provided or failed to provide an accurate account of participants' beliefs, conditions, resilience strategies and experiences with the development assistance community. It reveals, rather, the ways that I came to understand the people and issues of importance to this inquiry, as well as my evaluation of the methods' strengths and shortcomings.

TABLE I OVERVIEW OF FIELD RESEARCH AND METHOD

January to December 2000.

Research Protocol

Established with my supporting NGO, Instituto Politecnico Tomas Katari (IPTK), February 2000.

Environmental Scan

With the help of IPTK, I visited 16 communities within the municipalities of Ocuri and Ravelo in Chayanta, Northern Potosi. **Informal interviews** were held with local residents, NGO staff and local government officials.

Research Communities

Sucre²	Ravelo	Chimpa Rodeo (CR)/ Mojón (M)
Activities/ Methods		
Meetings with IPTK program management and research staff to discuss my research program and to learn about IPTK's understanding of the issues to be addressed.	Meetings with IPTK field staff to discuss protocol, the research process, and to seek their permission.	Meetings with community leaders – organized through the farmers' union structure – to explain research protocol and to request their participation and signed permission to proceed.
Semi-structured interviews with staff from: Bolivian NGOs and multilateral agencies (i.e. UNICEF/ UNFPA/ WFP); the Bolivian Ministry of Education; the Consejo Educativo de la Nacion Quechua (CENAQ); the Sucre-based foundation Antropologos del Sur (ASUR); and the Bolivian Potato Research Program (PROINPA) and the International Potato Centre (CIP).	Semi-structured interviews with: NGO fieldworkers; municipal and departmental government staff; Bolivia Ministry of Education field staff; farm union leaders; village promoters; the mayor and municipal councilors.	Semi-structured interviews with: local residents; NGO fieldworkers; public health workers; farm union leaders; village promoters; school teachers and administrators.

² I also traveled to Potosi, La Paz and Lima, Peru to interview staff within agencies headquartered in those cities.

TABLE I OVERVIEW OF FIELD RESEARCH AND METHODS CONT'D...**Research Communities:**

Sucre	Ravelo	Chimpa Rodeo (CR)/ Mojón (M)
Activities/ Methods:		
Participant Observation of IPTK and UNFPA's peri-urban literacy programs.	Participant Observation of: NGO field station; Ravelo elementary school (grade one); day-to-day village life; the nation's national holiday festivities; municipal planning workshop; agricultural fair; professional development workshop for local teachers; training for literacy promoters.	Participant Observation of: Farmers' union meetings in CR and M; harvesting and planting of potatoes in CR and M; Festival of the Virgin of Guadalupe and community marriages in CR; host-family lifestyle in CR; "minka" (group) construction of a small house CR; teacher's family life in M; elementary school in M; All Soul's Eve and All Saints day festivities in M; other day to day activities in CR and M.
		Participatory Rural Appraisal (PRA) Workshop (2 days) These workshops began with an overview of my research aims and approach. Once permission to proceed was granted, we proceeded with the PRA exercises described below.
Primary and secondary document research in Bolivia's National Archives and National Library as well as IPTK HQ offices.	Primary and secondary document research in IPTK's Ravelo field office.	Household Benchmark Surveys/ Interviews (2 hours) with 25 families plus two Jalq'a extension workers from neighbouring hamlets. Surveys conducted with the extension workers influenced my understanding of the broader picture but were not integrated into the data presented on CR or M.
		Survey of Potato Varieties through a photographic inventory (described below) and through the collection of samples. ³

³ **Note:** Data based on the collection of potato samples was not used. Soon after the completion of the collection process, it grew apparent that this sampling would not produce reliable results.

Detailed Review of Primary Research Methods

Benchmark Household Surveys

Designed with the assistance of the IPTK extension workers responsible for Chimpa Rodeo and Mojón, I conducted the survey exhibited in Appendix Three among fourteen farm families in Chimpa Rodeo⁴ and eleven in Mojón, representing 32% of the seventy-nine families residing in these two communities. I was initially rather sceptical about the reliability of survey data. Nor was I convinced of its appropriateness as a tool to establish rapport with members of the community. These concerns reflected the all too frequent errors reported in survey-based data as well as my own impatience with researchers who land on my doorstep. I had underestimated the value of this tool to obtain an introductory understanding of basic demographic, production and cultural information. To my pleasant surprise, the household surveys also offered a welcomed opportunity to establish a relationship with several of the participating farm families. The interview proved to be a two-hour icebreaker that, in some cases, paved a path to a more substantive relationship.

Early on in the implementation process, a pilot phase of sorts,⁵ I discovered that the information requested was far too detailed, particularly given the need for Quechua-Spanish translation. When interest appeared to be waning, questions were therefore dropped. Demographic and production findings reported on within this document are thus based on questions consistently posed and answered. For more propositional questioning, I opted for a conversational approach, turning the latter part of the exchange into a semi-structured interview. I also decided to leave the section on participants' production and conservation of potato varieties to a second session, using a system described below. All in all, participants were far more patient and forthcoming than I had anticipated.

⁴ A fifteenth survey was conducted with a comparatively successful farmer in Chimpa Rodeo. I later discovered, however, that he and his family spent more time as residents of Sucre than of Chimpa Rodeo. They also cultivated potato crops both within the wife's home community of Sasanta as well Chimpa Rodeo. I decided, therefore, not to include this survey in my data analysis. Still, I would like to acknowledge that my conversations with this farmer, Don Domingo, conserver of potato diversity and graduate of several governmental and non-governmental training workshops in agricultural production, contributed considerably to my emerging understanding of the issues at hand.

⁵ By "pilot phase of sorts" I refer to a process whereby I chose to amend the questionnaire as I went along, rather than test pilot it with a family solely for the purposes of testing its suitability. I did not wish to trouble a family for two hours of their time for the sake of perfecting my instrument.

One particularly common weakness with surveys, of course, is the temptation to interpret *reported* data as fact. Within indigenous communities that are not conversant with or terribly interested in the compartmentalizing of their lives into manageable bites of quantitative data, caution is doubly warranted. While the requirements of participation in a Western market economy have influenced some delineation and quantification of production data among farmers hoping to sell surplus produce, much of this information is memory-based. Documented information, let alone homestead balance sheets, was rarely available. Questions regarding hectares in production, fertilizer quantities, input costs and crop production levels were thus often greeted with some uncertainty. Answers tended to be approximations. When cross-checked with those of other respondents and with census and development planning data collected by organizations like IPTK, the municipality, or the *Programa de Autodesarrollo Campesino* (PAC) – a European Union sponsored self-development program for farmers discontinued in 1999 – the information provided was generally consistent with data for the region, well within an acceptable range. However, it is important to remember that the survey data these institutions collected were also based on the approximations and estimates of people with little formal schooling and a preference to consider the bigger picture than to quantify the individual parts. The data captured in spreadsheets and charts included in the dissertation should be considered, therefore, as information that helps to frame a general picture rather than a precise account of conditions, trends and patterns.

The trustworthiness of farmers' reports on potato plant diversity, of central interest to this thesis, was still more problematic. The reliability of data was complicated by two issues: the use of different Quechua names for the same variety, even within the same region; and the fact that changes in plant morphology can influence a perception of varietal distinctiveness when the plant's genetic structure has not, in fact, changed. As Miguel Holle, plant scientist with the International Potato Centre (CIP) in Lima, explained about his research to determine potato diversity in the Peruvian highlands, laboratory studies to examine the genetic content of in-situ potato variety collections have consistently demonstrated that approximately half of the reported varieties were actually genetically identical to another reported variety. Morphological changes were usually the result of a tuber's deterioration or its production under different growing conditions (conversation with Holle, Lima, Peru, June 13, 2000). Since the collection and

verification of the genetic content of the varieties actually grown in the fields of Chimpa Rodeo and Mojón farm families was beyond my study's scope and budget, Holle's caution about inflated numbers should be carefully considered when reviewing my presentation of farmer's reports on the varieties they produced or remembered seeing their parents or grandparents producing. But even if I were to cut the reported numbers of varieties produced or abandoned by 50%, as will be seen, there would still be a percentage of decline in varieties planted that would be significant to this dissertation. Moreover, the technique I chose to retrieve this information about potato diversity was designed to reduce the possibility of inflated reports. A concise outline of this process follows.

Since I was not collecting samples from each participant for verification in a lab and as there were no documented data on varieties before 1996, I decided to have participants review a photographic inventory of genetically-distinct varieties in the area, thereby establishing a common universe for assessment purposes⁶. The inventory was the work of Regis Cepeda, a young agronomist from Potosí, based on his 1995 collection, analysis and cataloguing of varieties from the two most common sub-species in the Bolivian highlands: *solanum tuberosum tuberosum* and *solanum tuberosum andigenum* (Cepeda 1996:1). Under the auspices of the faculty of agricultural sciences and forestry within Sucre's Universidad Mayor Real y Pontifica de San Francisco Xavier de Chuquisaca, and with the assistance of his brother, an agronomist with PROSEMPA, Cepeda collected, dissected and analyzed the genetic makeup of potatoes from eighteen communities in the Ravelo watershed. He identified thirty-four distinct varieties of the two subspecies central to his study, twenty-nine from the sub-species *andigenum*, native to the Andean region, and five varieties of the *tuberosum* interloper from outside the Andean region. He also found an additional nineteen other genetically distinct varieties; but since these were not from the *andigenum* or *tuberosum* sub-species, they were not included in the inventory (Cepeda 1996).

⁶ I did attempt a selected sampling of farmers' varieties. Regis Cepeda had generously offered to conduct genetic testing of their varieties, having access to the appropriate laboratory equipment. However, the collection system I set up turned out to be flawed. I was unable to collect specimens during the optimum season for collection and scheduling conflicts precluded assistance from the agronomist I had hoped might lend me a hand. I decided, therefore, to abandon this approach.

To ensure that Cepeda's photographs were of sufficiently high quality for solid identification, I showed the catalogue to a potato specialist working in PROINPA's Sucre office. He found them to be of a consistently good standard. Presenting the farmers with actual specimens would have been ideal, of course. Since that was not possible (Cepeda's collection had not been stored in a professional seed bank), I was pleased to learn that these photographs would serve the purpose.

All participants in my household survey were asked to examine a photographic entry of each variety within Cepeda's catalogue, a catalogue they had never seen before. Each entry included a photo of the complete potato, noting its external characteristics, and a photo of a sliced half of the potato that displayed the internal morphology. They were first asked whether they recognized the variety, then whether they still produced the variety, and thirdly, if they did not produce it, whether their parents or grandparents had. The average age of respondents in Chimpa Rodeo was thirty-five years of age. In Mojón it was forty-six. Tables and graphs on potato diversity in Chapter Six capture a *reported* decline in diversity in their communities based on a common universe of thirty-four varieties. This limited parameter meant that the presence or losses of other sub-species were not accounted for. However, the common denominator of verified varieties that every participant reviewed in the catalogue allowed me to capture a trend within the two most common sub-species that was not significantly affected by name confusion or by the issue of morphological change. Participants, in fact, did call some of the same varieties by different names.

A final point of relevance to the reliability of potato variety reporting in this study relates to a rapid, but as it turns out, informative memory game on potato varieties conducted in Mojón during the PRA workshop I conducted there (see Table III in the section on my PRA workshops). Participants reported a decline in the number of potato varieties produced or abandoned within the community over two generations that was very close to the average loss among Mojón participants in my household survey (50% versus 57%). The game was a simple one that divided participants into two teams, one working inside the schoolroom and the other outside. In a competition lasting fifteen minutes, each team was asked to list the names of potato varieties still produced in the community (not necessarily on their own farm) and those abandoned within the past two generations. Group one listed ten names of varieties still in production and ten varieties

abandoned. Group two identified the names of eleven varieties still in production as well as another ten abandoned. There was significant overlap between the two groups in the names recorded on the list of potatoes in production (60%) and those abandoned (60%). There were of course varieties listed that were not in Cepeda's inventory, an inventory this community had not yet seen. Nor were all those who participated in my benchmark survey present for this exercise. Finally, this memory game was purposely short, meant to energize the group through an activity they might, indeed did, enjoy. To claim this method as verification of the survey information would be overdoing an interesting convergence. Of importance here, however, is the comparative consistency in the percentage of decline reported through both exercises, leading me nicely into a discussion of the PRA-friendly techniques used for this study.

Participant Observation and Informal and Semi-Structured Interviews

Participant observation methodology has a long history of employment within anthropological scholarship for good reason. As Barrett (1996:123) suggests, the opportunity to wander around a village, talk to residents, spend time in their homes and join in community work projects when appropriate, represents the field workers most basic technique to generate both ethnographic data and the empathy needed to build trust that lies at the heart of solid research. Observations are at times systematic, in my case, including such assessments as: the structure and style of the non-governmental organizations working within my primary research communities; the tasks and division of labour during the planting of potato tubers; or the rituals practiced during important spiritual festivals, like the Festival of our Lady of Guadalupe and All Soul's Eve. At others, interaction is more casual, including conversation around the hearth during a meal of potatoes and *yajwah* – a tasty salsa of ground chili peppers – or the discussion of national politics with an NGO colleague over a beer in one of the two Ravelo village *pensiones* or restaurants. Participant observation generated a tremendous amount of information, with one of my biggest challenges proving to be that of detailing my observations in my journal, particularly in my primary research communities when almost complete darkness fell at six pm and the sub-zero temperatures at 3500 meters

precluded comfortable reflection. My flashlight proved to be a poor substitute for a reading lamp and my sleeping bag a still poorer alternative to central heating.

Participant observation, on its own, has its limitations, of course. Outsiders, particularly those relying on translation, can easily misinterpret what they hear and see. Time constraints can limit the effectiveness of this tool as well. Conditions in one year or during one season can influence a misleading account of trends or patterns if previous or subsequent years and seasons are not witnessed or taken into account. While I did not have the benefit of multi-year experience in these communities, I was able at least to witness community life during all four seasons. And thanks in no small measure to IPTK, I also had the good fortune to have been able to identify a solid group of regular informants with whom I was able to discuss my observations, including IPTK colleagues, particularly my IPTK research assistants Don Cornelio and Alberto, and several local key informants. In Chimpa Rodeo, eighteen year old Lucia, Spanish-speaking daughter of the *autoridad maximo*, Don Angel, Don Angel himself, whose family hosted my extended visits, Leandro, a young literacy promoter, Don Ciprian and Don José, community leaders who always found time to answer my questions, and Doña Lucilla, a young widow with four children, were enormously helpful with my efforts to understand the fabric of residents' lives. In Mojón, these guides included the local school teacher, Doña Elvira, who let me stay in her home during my longer stays and assisted with translation, an IPTK community promoter, Don Justo, a young community leader, Don Eusebio and his mother Doña Donata, and Don Norberto and Doña Silvia, a middle-aged couple who always seemed to be home and willing to converse when I was in their community. In Ravelo, two municipal literacy coordinators, Prudencio and Manuel, two municipal extension workers, Justiniano and Irineo, a municipal councillor, Doña Cristina – the first female to win a seat – and a former employee with, PROSEMPA, Don Elroy, helped to keep me on the right track. Having my "base-camp" within the field offices of IPTK in Ravelo also offered a welcomed opportunity to learn both about IPTK's operations and about the development community in the area.

My close link with IPTK no doubt affected my reception within the municipality and communities and of course influenced my perception of events. Among some IPTK critics, there was a clear hesitation and reserve in our interaction. Others appeared to accept me on my own terms. On balance, the support and interest of the majority in my

research offset the clear reservations of a minority. And as will be seen in Chapter Five, my insiders view of IPTK did not preclude a critique of what I perceived to be their shortcomings, a critique made easier by IPTK's repeated invitation to openly express my observations, positive or otherwise.

Informal and semi-structured interviews were also critical to the emergence of what I consider to be a credible and fair account of the character and experience of these communities and the region that housed them. A list of predetermined questions guided but did not limit interviews with informants ranging from a local shopkeeper in Ravelo to farmers preparing *chuño*. As a singular tool, interviews with a heterogeneous mix of people can create a confusing, possibly misleading picture for a newcomer. When coupled with other methods, however, they can contribute to a clearer picture. Semi-structured interviews with Chimpa Rodeo residents, for example, made me aware of some of the residents' continued use of the services of a traditional healer or *curandero*, a practice that did not come out in the survey, despite a question on treatment sought for medical ailments.

There is an additional point about semi-structured interviewing that I would like to stress here. Hoping to respect PRA principles, I approached the interview process with an intention to ignore positivistic textbook pronouncements about the need for detachment and "never providing the interviewee with any formal indication of... [one's] beliefs and values (Sjoberg and Nett 1968 in Oakley 1995:35). While I attempted to avoid leading questions, Ann Oakley's advice about the benefits of a non-hierarchical approach and some investment of one's personal identity for a mutually informative, less extractive exchange seemed infinitely more sensible than a pretence at scientific distance. I consequently chose a conversational approach to my interviews, aware that the flow of the conversation would not always head in the direction I had planned. Participants were aware that I had a list of issues or questions that I wanted to cover, which I did review from time to time. But I allowed the interview to take unexpected turns. Oakley's (1995:58) comments on this matter synthesize my perspective rather well:

... [T]he mythology of 'hygienic' research with its accompanying mystification of the researcher and the researched as objective instruments of data production [should] be replaced by the recognition that personal involvement is more than

dangerous bias – it is the condition under which people come to know each other and to admit others into their lives.

Of course, there is always the danger of respondents telling the researcher what they think the researcher wants to hear. While my informants did not strike me as particularly eager to provide the “correct” answers, this hazard underscores the importance of methodological triangulation as well as the need for a sufficiently representative sampling of respondents. My extensive experience with semi-structured interviewing also helped me to assess the sincerity and reliability of the informant.

Participatory Rural Appraisal (PRA) Workshops

Within my research context, particularly my part-time and time-bound presence in each community, and given the limited time farmers could spare, I was able to implement only one intensive PRA workshop within each community. Participants’ positive response to the workshop exceeded my expectations. Under more ideal circumstances, this workshop would have been the first of several.

In Chimpa Rodeo, after a false start earlier in the month when the mid winter winds nearly blew the rock-secured tin roof off the community meeting place, the workshop lasted a full day and a long evening, the night-time session lit by the dim flame of a small propane lamp. In Mojón, residents were able to spare a full two days and we were not obliged to work after sunset. My objectives for these workshops were fourfold. I wanted to understand the broader community dynamic better through exercises requiring collective process and decision-making that facilitated the participation of residents outside leadership circles. I hoped to demonstrate to residents and my IPTK assistants that it was possible to facilitate community assessment and planning work in ways that were inclusive and enjoyable for those unaccustomed to reading and writing. I also wanted to offer indigenous participants an opportunity to reflect on their situation, conditions and options in ways that were more evaluative than descriptive, as had been the case in previous rapid rural appraisal exercises described further in Chapter Six. Finally, I was hoping to get a better sense of participant’s perception of their community’s conditions before and after outsider intervention, particularly conditions related to the conservation of the genetic diversity of their most cherished crop, potatoes. Provided below is a synopsis of the exercises implemented in each community

with the help of two IPTK assistants. The majority of exercises were adapted from an excellent PRA guide prepared by NGO workers in the extreme north of Potosí, Silvestre Ojeda and Iñigo Retolaza (1999). But first, brief explanations about my introduction to the workshop, the technical choices I made, the evaluation tool used and the issue of consistent attendance are in order.

By way of introduction to my research and to explain the journey and preparations I made to arrive in their community, I used three visuals. First, I presented a roughly sketched map of Canada that identified my ancestors' migration from Europe to Canada and my own pattern of migration since I turned sixteen, including temporary residence in five Canadian provinces and three countries outside of Canada. While the distances I had covered were likely unfathomable, and my map of Canada about as familiar as a map of the moon, my story of migration and my decision to travel a long distance to get to know them better seems to have hit a responsive chord with people who also had a long history of migratory behavior, albeit within much smaller boundaries. I also distributed a small album with photographs taken over four seasons in each of the five provinces I had lived in, as well as pictures of my immediate family, then residing with me in Sucre. These photos were the source of much interest and it took some time before the album was returned.

Next, to explain my research in language that was accessible to people less comfortable or unfamiliar with Western development concepts, I drew an illustration of a tree with deep roots. These deep roots, I explained, represented their *saber Andina*, a knowledge base that had nurtured a diversity of crops including potato varieties we have all benefited from, including, I added, Canadian families. The clouds in the illustration represented training that could either help this diversity to grow or drown it. It was my hope, I explained, that my research and our workshop together would help to tell a story about how outsiders have helped or could help them to conserve the tree representing their *saber Andina*, more particularly the native potato varieties this knowledge conserved. I took the significant number of heads nodding during and once the translation was completed to mean that my explanation was essentially understood. Of course, they were also asked whether my explanation had been clear.

Finally, in an attempt to illustrate the flow of the research and my perception of our overlapping roles as well as the research's potential benefits to all concerned, I drew a

Venn diagram with overlapping circles. There were fewer heads nodding at the end of this presentation, possibly because my diagram was less clear or because speculation about potential benefits was premature. A more interactive exercise designed to explore our respective interests and potential gains would, of course, have been much better. But this short-cut approach due to time considerations made clear, at least, my desire to respect the need for reciprocity in the relationship.

Reciprocity in a relationship can also be established through attention to process, not only to product. One of the strengths of PRA techniques is that they facilitate exchange that is accessible, inclusive, and respectful of the local context, offering opportunities for participation for even the most reticent onlooker. The materials used can be very basic, indeed sought from within the community itself. Seeds, stones and a flat piece of land, for example, make excellent alternatives to pen and paper for those unable to read and write. Climatic conditions, however, can and did throw a wrench in the works. When my communities were able to meet for a workshop with me, the winter winds were at their fiercest, defying my intent to use Mother Nature's implements. So flip chart paper and markers had to serve as the next best thing.

Again inspired by Ojeda and Retolaza's excellent collection of PRA techniques (1999), the evaluation rating system used for most exercises in the workshop, as well as for the group's evaluation of the PRA exercises themselves, was built on participants' identification with potato farming. Scoring options ranged from one potato to indicate a poor value to five potatoes indicating a very good value. Participants in both Chimpa Rodeo and Mojón appeared to like this system, demonstrating considerable comfort with its use. Potatoes were also used to evaluate the workshop and each of its exercises. In Chimpa Rodeo, since we had worked well into the night, participants were too tired for a detailed evaluation session and opted instead to rate the entire workshop. Participants expressed disappointment with the fact that we were not able to complete all the exercises planned. They proceeded, nevertheless, to give the workshop four out of five potatoes. There was time and energy in Mojón for a more thorough evaluation. The "Before and After" workshop and the "Potato Varieties Game" were both evaluated at five potatoes while the "Crop Assessment Matrix" and "History of the Potato" were given four. Participants' overall rating of the workshop was five. Having had their workshop

after the workshop in Chimpa Rodeo, residents no doubt benefited from the lessons we had learned in Chimpa Rodeo.

Finally, a word on attendance seems wise. The number and identity of participants in each session did not remain constant, a fairly commonplace pattern that I later observed in the municipal planning sessions and local meetings I attended. Thankfully, there was a solid core of regular participants, albeit largely men. But a break for food or to stretch usually meant the loss of one or two participants for a short time and the arrival of others. Departing participants often returned from the activity that called them away; but not always during the same exercise. The consistent participation of women was particularly problematic, with their attendance fluctuating tremendously. The family and farm animals simply had to be attended to. These comings and goings clearly created implementation challenges. But one soon learns to relax and go with the flow. I was somewhat comforted by the fact that the more transient participants appeared quite comfortable with the notion that others might speak on their behalf, not surprising given the strong communal sense of rotating leadership responsibility I was to discover (see Sanchez 2002).

SYNOPSIS OF PRA WORKSHOP EXERCISES IN CHIMPA RODEO AND MOJÓN July and August 2002

1998 Diagnostico Rural Participativo (DRP) Update in Chimpa Rodeo

Description

Assessment of follow-up action taken in response to recommendations from an IPTK-facilitated Diagnostico Participativo Rural (DRP) workshop in 1998.

Contributions

Enhanced my understanding of the community's perception of this Rapid Rural Appraisal (RRA) workshop. The exercise was also included in an effort to demonstrate that community-based exercises are taken seriously and can be a useful tool for internal evaluations.

Drawbacks

Implementation reduced the number of exercises I could apply, exercises that in Mojón proved informative.

Observations

As will be discussed in Chapter Six, it grew clear quickly that IPTK's approach to this DRP planning exercise had been more extractive than empowering. There had been no verbal or written report returned to the community or a monitoring system developed to help the community to assess progress on recommendations. Recommendations also focused entirely on internal, community-based change. There was no evidence of discussion about outside factors affecting change.

Before and After Assessment in Chimpa Rodeo and Mojón

Description

Participants in three small groups evaluated conditions in their hamlets before outside development agencies set foot in their communities and since. It was made clear that they were not assessing the outsiders' interventions but rather simply recollecting conditions before outside aid arrived and conditions in the year 2000. Areas assessed included:

- level of community organization;
- amount of training available;
- quality of crop production;
- forestation levels;
- quality and amount of basic infrastructure;
- animal health;
- participation of men and women in public life;
- health conditions;
- access to schooling;
- soil conditions;
- strength of commercial potato production;
- strength of native potato production;
- permanent migration levels;
- use of artificial agro-chemicals (Mojón only).

Small group assessments were presented and discussed in plenary, with scoring changes occasionally made in response to clarifications or suggestions from other participants in the plenary.

Contributions

The exercise offered participants an opportunity to reflect on changes within their community. An exercise of this nature can represent an important first step to more in-depth discussion of internal and external factors contributing to those changes.

Group reports provided an important glimpse of participants' perception about their livelihood conditions and well being, as well as information to compare with external evaluations of their community's *development*.

The findings also proved useful for comparison with information provided during individual benchmark surveys, semi-structured interviews and the history of the potato exercise.

Observations

Table XVI and XVII in Chapter Six notes the scoring reported in both communities. Overall, residents reported improvements in the infrastructure and health conditions of their communities, as well as improved educational opportunities. There was insufficient time, however, for a wide-ranging discussion of factors contributing to negative or positive changes or to address the sustainability of the positive changes. Also, it is conceivable that some of the changes may have taken place independent of outside aid. In Mojón, for example, residents built their own small school without outside assistance.

However, it is interesting to note that within Chimpa Rodeo, a community with a 20 year history of outside intervention primarily designed to promote sustainable agricultural production, all three groups reported deteriorated crop production, soil conditions and potato crop diversity – elements that are key to the viability of healthy subsistence livelihoods and resilience. While it would be unfair to wag an accusing finger at external development intervention only, findings like these should encourage careful reflection of the predominant strategy and approach.

Mojón's history with outside development agencies was only four years old; the exercise was thus somewhat premature. Still, with respect to the quality of soil conditions, and the production of native potato varieties, a pattern of decline was again noted. Mojón's participants were also asked about the use of artificial agro-chemicals "before and after" outside aid. All three groups reported increased usage in the four years since the arrival of the development community.

Drawbacks

Participants' potential linking of before and after conditions with the work of external development agencies risked a simplification of a very complex change process. Unfortunately, there was insufficient time to implement the second part of this exercise – exchange about the various factors contributing to changed conditions.

History of the Potato Diagram in Chimpa Rodeo and Mojón

Description

In three small groups, two male and one female, and with the help of illustrations representing three possibilities of response for each item to be assessed (low, average and high), participants prepared a graphic history of potato production over approximately fifty years. To jog their memories, they were asked to illustrate the state of affairs in the year 2000 and at the time of four key national events the 1933 Chaco War, the Agrarian Reform Act of 1953, the 1983/84 *El Niño* drought; and the 1994 People's Participation Law that decentralized municipal governance. Conditions to be assessed within each period included: the levels of potato plant pests and diseases; soil quality; overall potato production yields; commercial potato sales; and the consumption of native potato varieties. Literacy skills were not required for participation; but the exercise did require the presence of at least one elder per group who would be able to recall conditions in 1933⁷. The recorders were told that they could present the information in whatever fashion they wished, but should also feel free to use the illustrations provided as a guide. At the top of each otherwise blank sheet of flipchart paper was a small graphic illustration identifying the time period.

Contributions

The exercise proved useful for cross-checking some of the information presented in the "before and after" exercise and for comparison purposes with benchmark surveys and informant interviewing.

Findings shed light on participants' perception of production trends, in this case in potato production, and served as a means of initiating dialogue about factors influencing those trends.

Although linear with respect to time, the exercise purposefully avoided the use of a matrix or table and allowed for the presentation of information in a non-linear fashion.

Drawbacks

People unaccustomed to drawing or using a pen on a regular basis were somewhat intimidated by the need to draw. None of the participants in the women's group, for example, volunteered to take on the recording role.

The exercise requires a level of focus and patience on the part of participants that can be draining.

Observations

The exercise offered a very good opportunity to assess comfort levels with a less structured tool, albeit one that required experience with a pencil or in this case a marker. Although the recorder/ artist chosen by group members generally was the adult with the

⁷ The women's group did not have a participant able or willing to describe conditions in 1933. Their report, therefore, did not include this period.

most formal education in the group, those who assumed this responsibility exhibited considerable apprehension. One recorder's hand started to shake when he began his drawings. I also noticed confusion about where one should start on the page. Western assumption about starting with the upper left-hand side and moving to the right of the page was not evident. My illustrations – meant only to guide people who were not artists – were followed very closely, with the order of the illustrations also followed very carefully. The low level of literacy skills within the groups was also evident. Several recorders who chose to label their drawings, possibly worried that they would not be recognizable, asked me to spell very basic words like *sana*, meaning healthy, for instance.

The findings proved interesting and fairly consistent with reporting elicited through other PRA exercises and the benchmark surveys. But the greatest benefit of this exercise appeared to be the intergenerational dialogue and learning the exercise facilitated. When the small groups reported their findings to the plenary on the earlier time periods, the senior resident within the group often elaborated on the conditions.

Because the participants in the Chimpa Rodeo women's group were uncomfortable with writing, my IPTK assistant offered to lend them a hand as recorder. Considering the less-structured system I had proposed to be much too confusing, he drew a matrix with each period listed on a vertical row and the conditions to be assessed on the horizontal row. The women then evaluated conditions using the one to five potato scoring system of the "before and after" exercise. When we later discussed his decision to make this change, he insisted that "since these exercises should be educational, we must demonstrate to participants a more logical presentation of information". It appears that I had not briefed him sufficiently about my rationale for testing a more open-ended, non-matrix format. His intervention proved a solid reminder of the challenges alternative methodologies pose for those of us trained in Western systems and logic.

Since the exercise took much longer than I had anticipated and seemed to be quite demanding for participants, I anticipated the evaluation of this exercise in the plenary thereafter to be quite low, possibly two potatoes out of five. To my surprise, a lively debate took place over its worth, with one participant insisting on a three while another insisted on a five. Through consensus, the plenary decided to compromise on a four.

Crop Trend Analysis in Mojón

Description

Participants were asked to conduct a kind of cost-benefit analysis of their crops according to the agreed upon criteria listed on the vertical axis of a matrix. The positive criteria were: high yield; good nutritional value; good market value; rapid production time; easy on soil fertility; and good climate resistance. Negative criteria were: hard on soil fertility; disease prone; labour intensive production; and high input costs, this last criterion being one participants specifically asked to include. The crops evaluated included commercial potatoes, native potatoes, wheat, oats, and three uniquely Andean crops including *tarwi*, *papa lisa* and *oca*. Again, the last two were added at the

suggestion of participants. To assess each crop according to the various criteria, the evaluation system from the “before and after” exercise was employed, five potatoes being high and one potato being very low. The entire session was done within the plenary, with each gender reporting separately and taking their turn at going first to discuss and determine their rating of the crop. Within each gender group, ratings were established on a consensus basis after open debate about each item.

Contributions

Open assessment and debate of this important subject matter in a plenary format revealed leadership dynamics of importance to my understanding of the decision-making structure in the community.

This exercise may have influenced more evaluative discussion about production realities and options within the community.

Drawbacks

Because the exercise had quite a few criteria for consideration as well as a good number of crops to assess, there was a risk of consensus for the sake of getting on with the exercise.

While the assessment criteria were presented to participants for approval and were based on a similar exercise conducted in the extreme North of Potosí, ideally participants should have determined the assessment criteria, as well as the base value that is appropriate for each criterion. A crop's impact on soil fertility, for example, might be more important in the Mojón context than good market value. Again, exercises such as these should be used to promote critical discussion, not as ends in themselves.

Observations

Offering the women a separate “voice” in the plenary facilitated far more participation than I had observed in other plenary sessions. Although the men sometimes tried to pressure the women to reply before they were ready, they generally expressed their own opinion, as evidenced in the scoring differences.

Residents appreciated the exercise, giving it a four out of five when we evaluated it. However, in my view, the exercise proved too ambitious for the time available. It might have inspired a few participants to begin to evaluate their crops in light of the production context and their priorities; however a much longer session, as well as a follow-up session linking these findings to broader trends and factors, would have enhanced the value of the exercise. For anthropological purposes, it was good to observe this type of decision-making in a larger forum. For development planning purposes, small group work before plenary discussion might have made this technique more effective.

Finally, this cost-benefit analysis, with its focus on the tangible assets of crops, left me with an uncomfortable sense that it reflected the occidental priorities and development perspectives of its original designers (Ojeda and Retolaza 1999:41). Notably absent

from the criteria list were criteria related to a crop's cultural significance that, in the case of potatoes, are significant (see Table II).

Varieties Game in Mojón

Description

Participants were divided into two teams, one working inside the schoolroom and the other outside. In a competition lasting fifteen minutes, each team was asked to list the names of potato varieties still produced in the community and those abandoned within the past two generations.

Contributions

Served as a good energizer as it changed the pace of the activity and its competitive structure made it fun.

In very little time, one can develop a preliminary sense of a community's knowledge about its crops. The exercise also represented another opportunity for intergenerational exchange and learning.

Drawbacks

Those who take the competition too seriously can be left discouraged if they don't win, possibly diminishing their interest in further participation.

Observations

The exercise was intentionally short, meant to energize the group through an activity they might, indeed did, enjoy. On its own, this method clearly does not paint an accurate picture of potato diversity in the community. However, the comparative consistency in the number of varieties provided by both groups does suggest a pattern that warrants careful attention (See Table III).

On their own, none of the techniques and tools described in this chapter on my field methods would have provided me with a solid appreciation of the Jalq'a world I had the good fortune to peer into with Western lenses and acute interest. Considered together, however, they helped me to construct the account narrated and analyzed in the next two chapters. Having presented the theoretical foundation for the dissertation and assessed the methodology used to investigate its local application and significance, it is now appropriate to deliver that account.

TABLE II MOJÓN, BOLIVIA, PRA EXERCISE: CROP RANKING, August 2000
 (1 = low; 3 = average; 5 = high)

CRITERIA	CROPS		COMMERCIAL POTATOES		NATIVE POTATOES		WHEAT		OATS		TARWI		OCA		PAPA LISA	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
GOOD YIELD	3	3	1	2	2	1	3	2	2	1	1	1	1	1	1	1
GOOD NUTRITION	2	3	4	5	3	3	2	1	2	1	4	3	4	3	4	3
GOOD PRICE	2	1			4	3	2	1	2	3						
RAPID GROWTH	4	4	3	3	2	1	4	1	2	1	2	1	2	1	2	1
MODEST SPACE REQ'D	3	2	3	3	2	3	2	3	1	3	3	4	3	4	3	4
RESISTANCE	2	1	2	1	2	1	2	1	4	2	1	1	1	1	1	1
TOTAL POSITIVE	16	14	13	14	15	12	13	8	13	11	11	10	11	10	11	10
NEEDS FERTILE SOIL	4	4	4	4	3	3	3	3	2	2	4	4	4	4	4	4
DISEASE PRONE	4	4	4	4	3	2	3	1	2	1	3	4	3	4	3	4
LABOUR HIGH	5	5	5	5	3	2	2	2	2	2	4	3	4	3	4	3
COSTLY INPUTS	5	5	5	5	2	3	2	3	2	2	3	5	3	4	3	4
TOTAL NEGATIVE	18	18	18	18	11	10	10	9	8	7	14	16	14	15		
AVERAGED DIFFERENCE	-1.8	-2.2	-2.3	-2.2	-0.3	-0.5	-0.3	-0.9	0.2	0.1	-1.7	-2.3	-1.7	-2.1		

TABLE III MOJÓN, BOLIVIA, PRA EXERCISE: VARIETIES GAME, August 2000

GROUP ONE VARIETIES CULTIVATED YR. 2000	OVERLAP	GROUP TWO VARIETIES CULTIVATED YR. 2000
1 ABAJEÑO	1	1 ABAJEÑO
2 ALQU'A CUCHI	1	2 ALQU'A CUCHI
3 CHARANSQUI	1	3 CHARANSQUI
4 ICHU ULLO		4 MISIULLU
5 LAPIA	1	5 LAPIA
6 LLOCALLA		6 PITU WAYAQ'A
7 PITU ACU		7 QURU ULLU
8 QU'ELLU SONKO	1	8 QU'ELLU SONKO
9 QUNA NARA		9 QUNA NARA
10 WACA LURU	1	10 WACA LURU
OVERLAP ON VARIETIES ABANDONED	6	11 YANA Q'OULLU
GROUP ONE VARIETIES REMEMBERED BUT ABANDONED		GROUP TWO VARIETIES REMEMBERED BUT ABANDONED
1 AMAJAYA	1	1 AMAJAYA
2 CH'UI SILLO	1	2 CH'UI SILLO
3 JASUTILLO	1	3 JASUT'ILLO
4 Q'UCHI ALCA	1	4 Q'UCHI ALCA
5 SAPALLO	1	5 SAPALLO
6 MORADO SONKO		6 SULEN'QU
7 ACAWIRI		7 TENEQ'EA
8 QURU ULLU		8 YANA IMILLA
9 YANA QOYLLU		9 YURAQ IMILLA
10 YURAQ Q'OULLU	1	10 YURAQ Q'OULLU
OVERLAP ON VARIETIES ABANDONED	6	

CHAPTER FIVE

THE JALQ'A FARMERS OF CHIMPA RODEO AND MOJÓN: ROOTED AND RESILIENT

Land, then, is not merely soil; it is the foundation of energy flowing through a circuit of soils, plants and animals... [A]n ethic to supplement and guide economic relation to land presupposes the existence of some mental image of land as a biotic mechanism. We can be ethical only in relation to something we can see, feel, understand, love or otherwise have faith in. (Aldo Leopold, *A Sand County Almanac* in Cajete 2000:135)

In the communities, from childhood on, you learn that the earth is alive, that she is called *Pachamama*, that she nurtures mankind... (San Martin 1997:90)

Tucked within the spiny ridges of the Cordillera of Potosí, a small mountain range within Bolivia's Southern Cordillera (Ochoa 1990) are Chimpa Rodeo and Mojón, the two Jalq'a settlements in Northern Potosí's Chayanta province that agreed to let me catch brief but informative glimpses of their individual and community character. In return, they asked only that I share food, coca leaves, my photos and the products of my research – signs of respect and appreciation. This chapter begins with an ethnographic snapshot of Chimpa Rodeo and Mojón and the fine people I discovered there over four seasons of their agricultural production cycle. To ensure that my interpretation of their day to day lives, traditions, and production practices are understood within the broader tapestry of the peoples of their home region, the discussion moves back and forth between their particular experience and that of the indigenous peoples both of their home department of Potosí and the wider Andean region. Special attention is paid to the strategies that have facilitated community resilience in the face of considerable ecological challenges and the livelihood roadblocks set by Westerners from outside their indigenous world. Tables and figures that support my observations are also woven into this chapter. Field

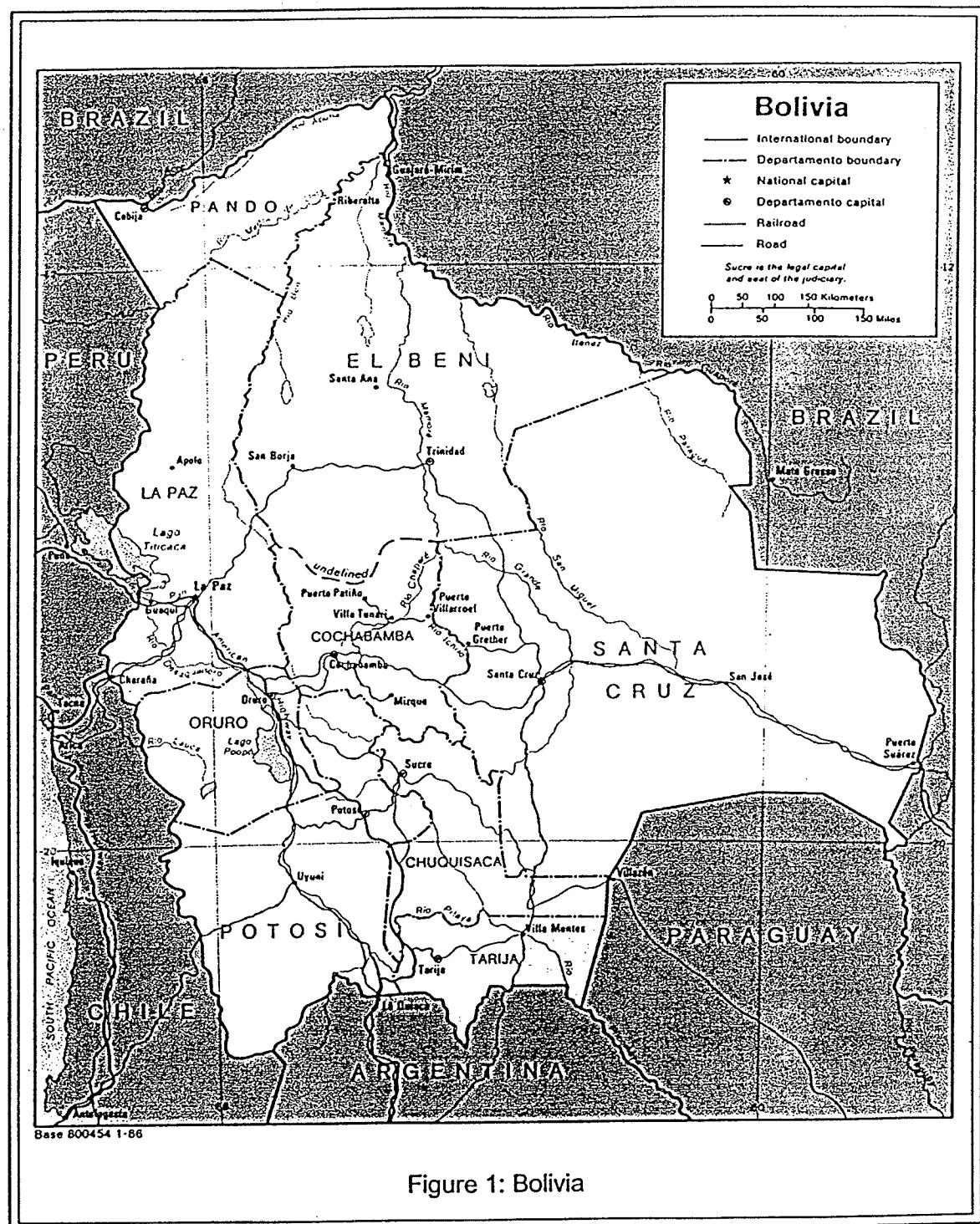
notes that elaborate on selected community traditions and rituals addressed in this chapter's main text are presented in Appendix Two.

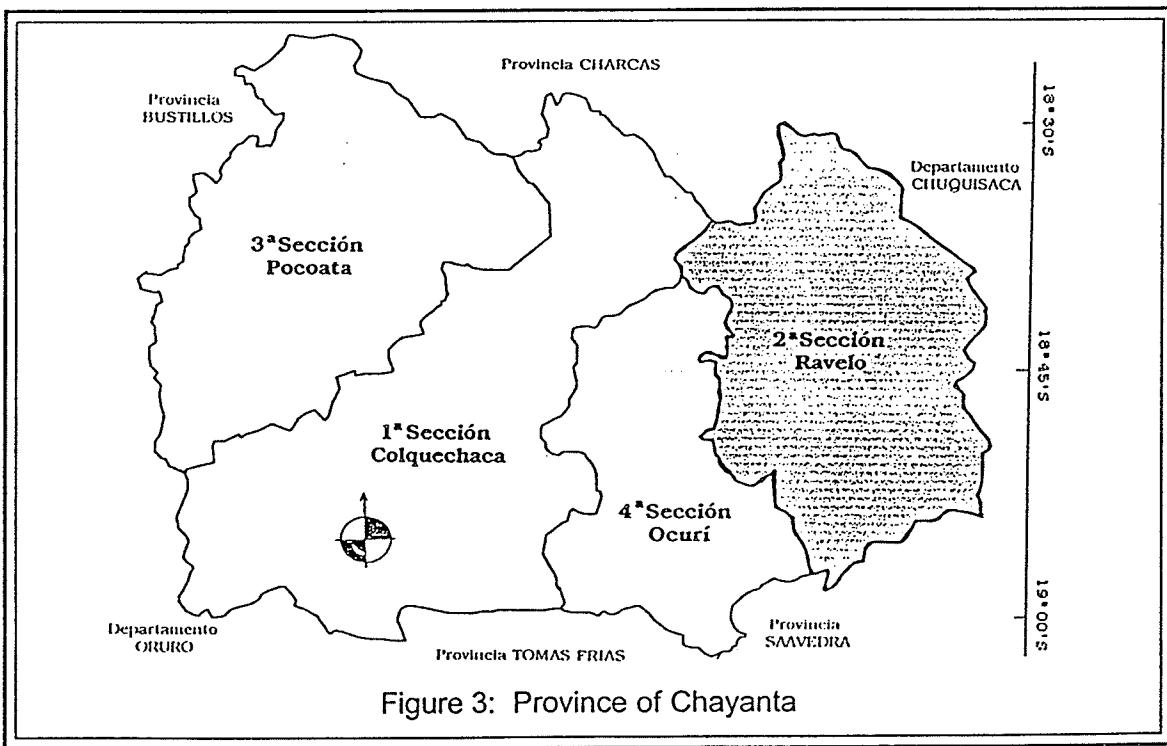
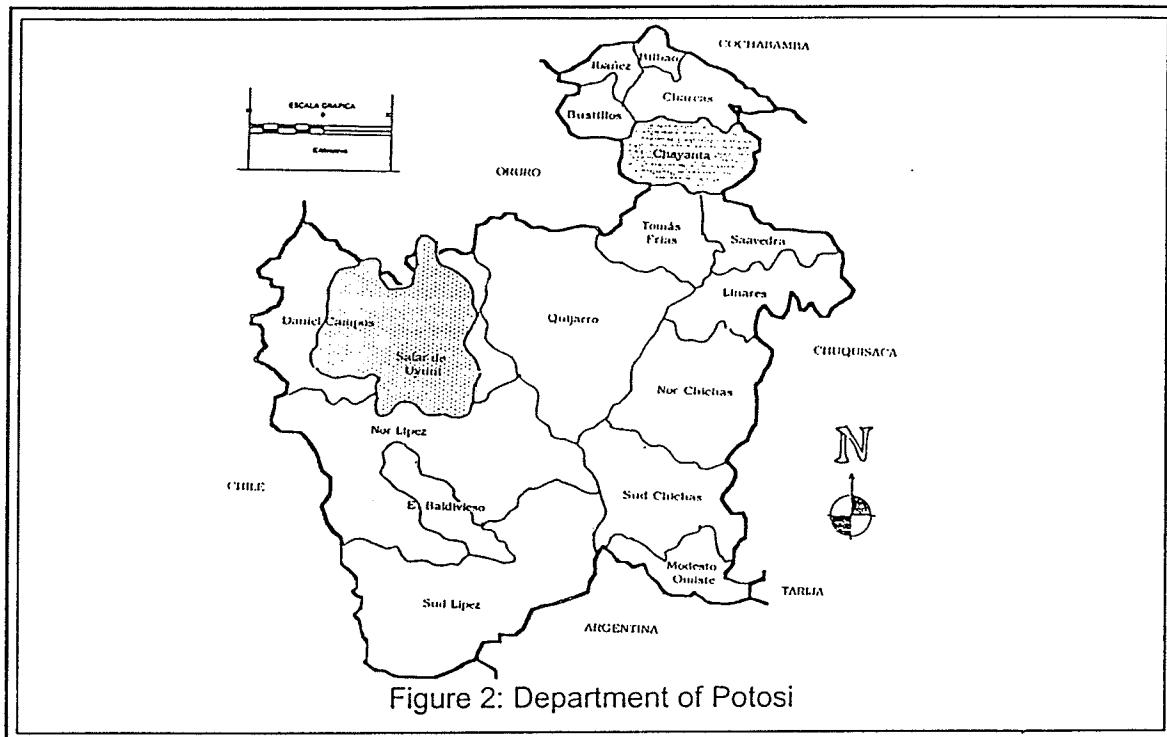
Jalq'a Settlements in the Puna Baja

Chimpa Rodeo is an ex-hacienda hamlet¹ that is home to 33 families. Mojón, with 46 families, is an *originario* community, original because its residents were never subject to the servitude of the *hacendado* or large landowner. In an effort to strengthen their family's livelihood, farmers in both communities dedicate some of their cropland for commercial production. For the overwhelming majority, however, wholehearted petty commodity production is not viable. Semi-subsistence and in some cases subsistence agriculture remains predominant (Benezçon 1994). It is the system that has characterized much of the farming in this region since late 19th century trade was liberalized and the government courted tin and silver barons, destroying commercially viable wheat production (Platt 1982:14).

At approximately 20 km and 10 km from the municipal capital, both Chimpa Rodeo and Mojón have reasonable access to Sucre markets (see maps in Figures 1 to 4 below). Like most of their neighbours in Ravelo, however, few of the 79 families of these two settlements have managed to benefit economically from their surplus produce. They fit all too easily within the generalized socio-economic profile of the Ravelo municipality described in the Introduction. Chimpa Rodeo has an advantage over Mojón when it comes to potential gains. A forty-five minute walk takes one to the main road into Sucre. It also has a comparatively good secondary service road making motorized travel possible except during the worst of the rainy season. None of the hamlet's residents own a vehicle. But farmers belonging to credit associations can usually find the funds to hire tractor services for a few hours during the planting season.

¹ Chimpa Rodeo, together with a neighbouring hamlet, Ura Rodeo, form a larger community – Rodeo Huayllas – with both sharing a common chapel and one union local whose elected official or *dirigente* generally alternates between each hamlet. Their geographical separation from each other, however, appears to have influenced a somewhat distinct identity. Historically, in fact, under the indigenous *ayllu* system of social organization to be described later in this chapter, the residential settlements were generally in small hamlets. Hamlets were in turn linked together in a larger, minimal *ayllu* called *cabildo* (Platt 1982: 44). Mojón also consists of two hamlets, Mojón *Baja* and Mojón *Alta* (lower and upper Mojón); but the geographical spread is negligible and the residents function as one tightly-knit unit.





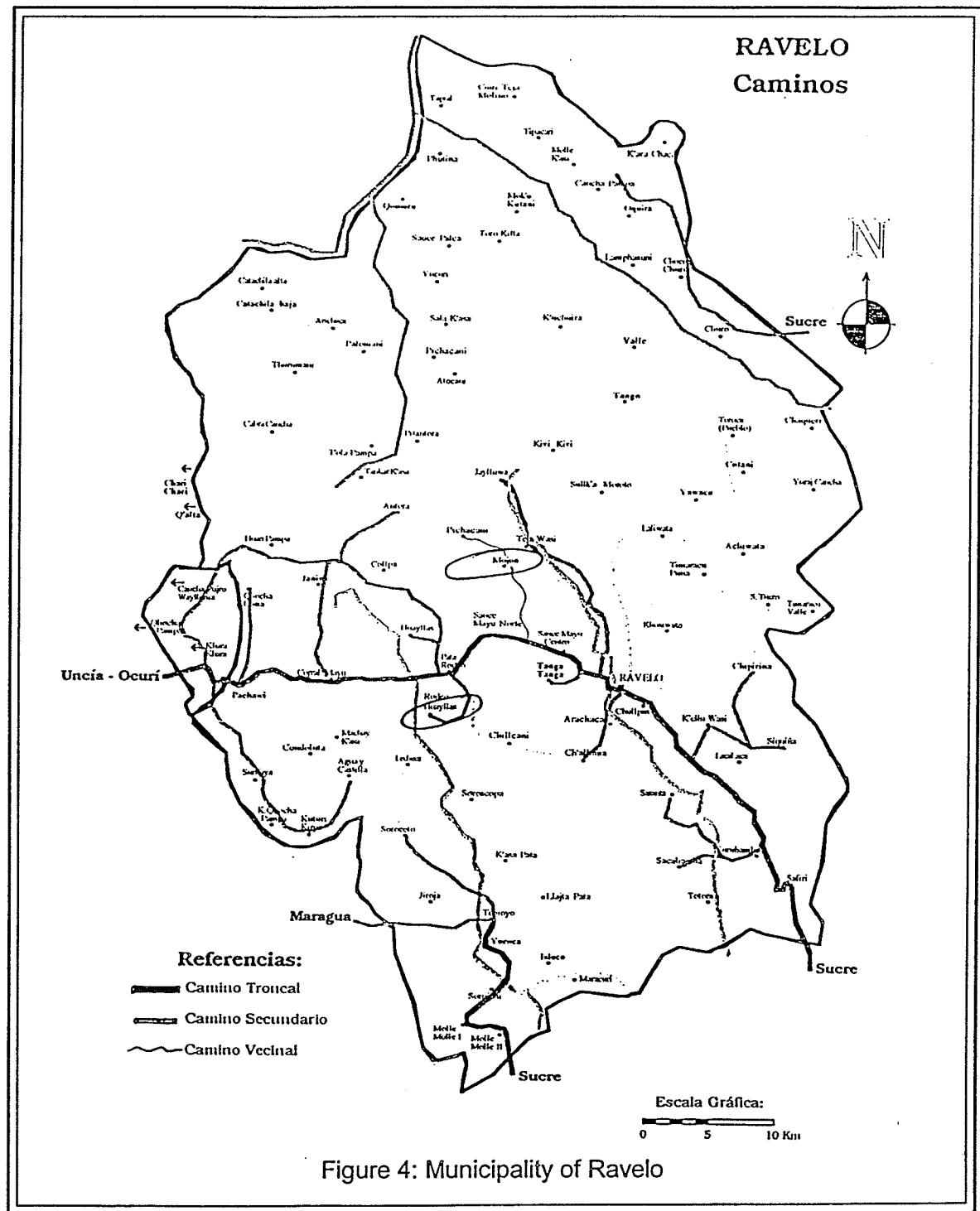


Figure 4: Municipality of Ravelo

The trek into Mojón is another matter. Mojón's service road is barely navigable at the best of times² and impassable during the rainy season. One heavy thunderstorm can convert the winding, boulder-filled road into a rushing river, as I discovered during a very wet and lonely hike into the community in late October 2000. Motorbike travel is thus the favoured option for extension workers in a hurry. Local residents and regular visitors like me tackle the two-hour or so journey on foot. Mechanized ploughing is not practised. Mojón is clearly the more isolated of the two communities, not so much for residents used to regular treks to valleys and markets, but for development agencies seeking a more accessible location for its assistance programs. Their interaction with external institutions is in fact only four years old. In contrast, Chimpa Rodeo has an approximately twenty-year history of external development assistance.

At almost identical elevations of 3550 and 3500 metres respectively (Mamani 1999), and being just over 10 km apart, climatic and land conditions in these *puna baja* or low highland communities are comparable. Geographers classify the area as semi-arid (Thorwaite cited in Mamani 1999:32). Hail, frost and water shortages are a constant worry. Although there is a greater amount of vegetation in Chimpa Rodeo, in part because of NGO-supported reforestation efforts, the topography in both communities is uneven, intensely eroded and heavily deforested. Large gullies are a common feature since there are now few trees and bushes to stop the winds and rains from digging deep. Root-hungry sheep, introduced by Spanish conquistadores, have cleared indigenous foliage rather effectively. Soils are lightly acidic (6.8 pH) with organic matter levels poor to moderate (Mamani 1999:32). It is important to note, however, that the ecosystemic diversity characteristic of the Bolivian Andes is applicable to these communities. Land fertility can vary from hill to plateau, requiring differing fallowing periods and a variety of land-use strategies. But a consistent theme which emerged in all my conversations with residents of both communities was how *cansado* or tired all their land had become. They blamed this growing infertility on a number of factors, including deforestation and land-use intensification due to consumption needs, market considerations and *minifundismo*. Some farmers, particularly the older women amongst my informants, pointed an

² UNICEF's construction of household latrines, launched and completed within six months after my departure, resulted in a small extension of the road but no significant improvement.

accusing finger at the increasing use of chemical fertilisers and pesticides that rob the soil of valuable nutrients.

The households in Chimpa Rodeo and Mojón are semi-autonomous economic units, *semi* autonomous because in addition to their farming activities they also depend on labour exchange and to a lesser extent external labour markets to fill consumption and income needs (see Collins 1988:116). Households rather than individuals, as Lambert writes of Andean communities elsewhere, are conceived of as the units of ceremonial and economic participation (Lambert 1977:5). Land inheritance rules, on the surface at least, reflect patrilineal structures in that male heads of households pass land onto their sons, and a virilocal marriage system stemming from strict exogamic rules within one's hamlet sends women from their birthplace to that of their future spouse. However, if a man has no heirs, he may give his daughters a part of the family holding, converting them, as Platt (1982:42) has suggested about Macha women in the neighboring municipality, "into highly desirable matches for the sons of land-scarce families". Widows can also own land and a man may choose to marry a woman with land in the valley, generally to re-establish a pattern of vertical control (addressed below) in circumstances where such land has been lost (Platt 1982:42). Amongst my research participants, there were cases of uxorilocal residence, as well as husbands with wives who owned valley lands. Three families also reported *puna* land titles in their mother's name. These strategic marriages used to ensure access to adequate land (Harris 1985:319) clearly caution against a pigeonholing of this society as patrilineal in the strictest sense. However, the bilaterality often found in Aymara societies of the *puna alta*, whereby women pass lands on to other women (see Lambert 1977; Collins 1988), is not evident in this region. Still, it seems wise to recall Webster's (1977) assessment about Quechua communities in the Andean region. Patrilineal biases that exist in the current system are not necessarily a matter of kinship, he cautions. They reflect, rather, the male role in certain political and economic domains where Spanish administrators demanded male participation (in Collins 1988:11).

While Catholic clerics would have it otherwise, betrothed young women tend to leave their parent's home almost two years before the official ceremony. The trial marriages that scholars like Carter (1977) have profiled in other Andean communities

appear to apply in Chimpa Rodeo and Mojón. Marriage, as Platt (1976:26) advances about the nearby Macha, "is not an issue of 'once and for all'; more a progressive process of cementing the union that develops through a series of informal and formal events". In response to my question about the rationale for the lengthy delay of formal proceedings, research participants noted only the practical need to raise funds to finance a wedding.

Being Jalq'a: Embedded and Invented

The story of the Jalq'a ethnicity of the people of Chimpa Rodeo and Mojón is a rather mysterious and somewhat confusing one. The Jalq'a speak Quechua and proudly claim descent from the once powerful Inca Empire. They are easily identifiable through their unique clothing, instruments, dance, songs, rituals and weavings and are largely agronomists of the *puna baja* and *cabecera de valle* (valley hilltops). Their presence and livelihood in the *puna baja*, however, is the first signal of some perplexity. In Peru, the term *jallka* or *jalca* is used to refer to residents of the *puna alta* (see Burchard 1976:411; Martinez 1994b:21) Of course, it is possible that the Bolivian term Jalq'a may not be connected to the Peruvian one. There is another suggestion that the name, and thus the word, *jalq'a* has its origins in the word *alqa* or *allqa*. This term is used both in Quechua and Aymara in the production of textiles to describe an optical representation of contrast and disjunction: black and white, green and red, blue and orange (Martinez 1994b:23). Jalq'a clothing and textiles, further discussed below, certainly reflect the extensive use of such contrast. But this explanation, though tempting, is speculative. One is in fact extremely hard-pressed to find written documentation about the specifics of the Jalq'a name, culture, history and traditions. In contrast to the substantive tracts capturing the life and times of their Llamero or llama-herding neighbours, Tristan Platt's insightful work on the Macha (Platt 1976, 1982) or Olivia Harris' work among the Laymi (Harris 1978; 1982; 1985) representing excellent examples, the Jalq'a appear to have been overlooked.

There has been some very recent research conducted by ASUR, a Sucre-based foundation of anthropologists intent on supporting the Jalq'a people chiefly through the promotion and sales of their exquisite weavings (Cereceda 1998). There also are

references to the Jalq'a in general works about the diverse ethnic groups in broader Chayanta (Pacheco 1994; 1996) and in Chuquisaca (Barragán 1994). However, neither colonial nor post-colonial republican accounts of indigenous peoples make mention of this ethnic group (conversation with Veronica Cereceda, Sucre, June 2000). Since the Jalq'a are one of the major ethnic groups within a two-hour radius of the country's constitutional capital, this seems a rather curious oversight.

Part of the explanation for the dearth of material about the Jalq'a may rest in the lack of clarity about their origins and the possibility of a comparatively recent beginning. Amongst scholars in the area, there is a considerable debate and confusion about who they are that is certainly far from resolved. Their location within the *ayllu* system of traditional governance is particularly problematic. To elaborate on the brief explanation offered in my Introduction, an *ayllu* is the complex indigenous social organization and governance system of the residents of the Bolivian *puna* or highlands. The households of individual hamlets form segments of more inclusive and larger social groups [minimal to maximal *ayllus*] (Godoy 1986:738). At the core of this *ayllu* system is a multifaceted governance, land-management and regional economic development strategy discussed below (Platt 1976; 1982; Harris 1985; Rivera 1992).

In a 1994 atlas of the *ayllus* of Northern Potosí,³ researchers simply list the Jalq'a as members of the maximal *ayllu*, *Tinkipaya Chhaxru*, noting that under this *ayllu* there were the ethnic sub-groups of Tinkipayas, Yamparas and Jalq'as. Referencing Platt (1987) and Saignes' (1986) charts of the Northern Potosí *ayllus*, Sucre-based researcher Diego Pachero suggests another pattern. There are Jalq'a who are a sub-unit of the Yampara ethnic group and others of the Tinkipaya subgroup, with the Jalq'a ultimately belonging to the Moromoro *ayllu* of the Qharaqhara *ayllu* that was itself a member of the highest umbrella organization, the Charkas Nation (Pacheo 1996:227; Pacheo 1994:19). Yet, some elderly informants within the Pacheo study (1994:46-49), declared with

³ The atlas was commissioned by the now defunct Farmer Self-Development Program in Potosí (PAC) supported with European Union funding. The program was discontinued in 1999 because the Bolivian government was not contributing the counterpart funding needed to access the European funds.

confidence that the Jalq'a have existed since the time of the Incas and in fact preceded the Yampara. They also suggested that there had been a "llamerization"⁴ of some of the Jalq'a, accounting perhaps for a decline in their visibility and numbers.

ASUR researchers raise questions about the Jalq'a's *Yampara* and *Tinkipaya* roots. Founder and recently-deceased Director, Gabriel Martinez (1994a:5), hypothesized that the Yampara were probably not a legitimate ethnic group, but rather an "ethnic" invention by colonial administrators to describe the *other*. As for the Jalq'a, Martinez (1994a:2) speculates that as a unified ethnic group with distinct dress, rituals and so forth, they are comparatively young. Because there is no reference to them in colonial and republican literature, he wonders if the Jalq'a might not be a re-invented ethnic unit formed as recently as the 19th century, possibly representing the coming together of various disenchanted *ayllu* units (also see Cereceda 1998:7/8 and Martinez 1994b:18).

The Jalq'a cosmovision, nevertheless, does not betray superficial invention. The thought structure so pronounced in their weavings and rituals reveals complex, supernatural, chaos-creation beliefs that, according to Martinez (1994a:7), differ significantly from the order-conservation orientation of their Llamero neighbours, although both groups share the concept of duality that is characteristic of a pan-Andean worldview. The way that both the *originario* and *ex-hacienda* Jalq'a communities are said to embrace a common macro-identity, despite some intrinsic structural differences, also suggests an ability to deal with differing or opposing orientations at once. Their name, as suggested, might well reflect this interest in contrast and opposites (Cereceda 1987 in Pacheo 1998:45). According to Cereceda et al. (1998:9), "the Jalq'a represent a desire for a macro-identity that incorporates both the small, independent communities of today as well as the original *ayllus* that they belong to, without losing their local identity". Even outsiders can step with ease into the Jalq'a identity when they take up residence in a Jalq'a community (Cereceda 1998:9). The strong duality of their cosmovision seems, as June Nash (1979:122) so astutely articulated in her masterpiece on Bolivian miners, "capable of entertaining co-existent and sometimes contradictory worldviews".

⁴ *Llamero* is the name given to the Jalq'a's indigenous neighbours in the remaining municipalities of Chayanta. Because many live in the *puna alta* or highlands above 3600 metres and can therefore shepherd llamas, the description *llamero* seems to have caught on.

My own observations certainly support this conclusion. There were clear differences between Chimpa Rodeo and Mojón that appeared connected to their varied histories of interaction with the outside world. Still, within both the *ex-hacienda* and *originario* communities, I observed household traditions, festival celebrations, and attitudes that revealed a Jalq'a identity that was both unifying and elastic all in one. An incident within Ravelo's August 2000 municipal planning meetings that gathered Jalq'a representatives from across the municipality offers an insight into the strength of the unity side of the equation.

Representatives from the Jalq'a community of Qharaqhara, an *originario* community that still maintains some of its *ayllu* governance structures, joined the Ravelo meeting, despite the fact that departmental bureaucrats from Potosí had drawn them into the political boundaries of the neighbouring municipality of Ocurí, a largely Llamero territory. Their Jalq'a *compañeros* welcomed their presence and insisted on their participation, leaving municipal facilitators no choice but to admit them. During the meeting, Qharaqhara residents pledged a determination to reverse the government's unilateral decision to shear their socio-political ties to their Jalq'a people, galled at the nerve of those who dared to tell them where they belonged.

Cereceda and her ASUR colleagues make note of another characteristic of the Jalq'a people that is of relevance to this study and that might indeed support the notion of their shorter Jalq'a lineage. Although several of the original communities still claim membership in an *ayllu*, in contrast to some of the larger ethnic units in Northern Potosí like the Macha and Tinkipayas, the Jalq'a's socio-political structures do not appear to have the same level of complexity. Nor are their members accountable to the traditional regional authorities as is the case with the larger groups (Cereceda 1998:9). While Harris' work among the Laymi (1985:327) also suggested that the authority of the *ayllu* leaders there had diminished, at least with respect to land-use decisions observed in the early eighties, the Jalq'a do seem to have selected only the elements of the more elaborate system that suits them best. And however unclear its rationale and history, this flexible structure, coupled with an inclusive duality in their cosmovision, might well explain their ability to live with a hybrid governance structure that stitches indigenous *ayllu* processes onto the farmers' union structure of the *mestizo* world now governing

most Jalq'a communities.

Research participants could not solve the puzzle of their origins for me, reporting only that their parents, grandparents and great grandparents were Jalq'a and that they were different from the Llameros, particularly in their temperament. The Jalq'a, they insisted, were much less aggressive than the Llameros, who, after all, still practised *tinku* or ritualised battle. Several also claimed to be quite different from the "civilized" people of the city. They were simply who they were. Mojón residents, as "originarios", were also able to identify the particular *ayllu* that they belonged to: *puna* Sawana Wata, a lower level unit of the Moromoro tier noted in Pacheo's study (1996:230). What does emerge from this confused tale of conception and gestation is the dialectic between the possible "hybridisation" of identity (Escobar 1995) on the one hand and, on the other, constructed meaning and material culture that are unique and consistent. Billie Jean Isbell (1978:81) suggests another angle to consider in our rush to interpret identity as participants "encounter and manipulate situations that are less than ideal". Paraphrasing Robert Murphy (1971), she writes, "by looking at the relations between the ideal and activity, we will see a dialectical process that in itself is structure" (1978:81). Platt (1992:135) also offers an important reminder about the need to keep in context the anthropological quest to pinpoint genealogy and identity:

From the start, however, we should remember the anthropological truism that if our object is to understand the creation and transformation of ...memories of identities today, what matters is not simply the genealogical origin of cultural elements but also the changing fields of social meaning in which they are embedded.

One system that is at the center of the *ayllu* structure and fundamental to an understanding of the peoples of the *puna*, including the Jalq'a residents of Chimpa Rodeo and Mojón, is the practice of ecological complementarity and what the Spanish called "doble domicilio" or dual residence. A full articulation of the dynamics of this complex pre-Incan, pan-Andean construction (Burchard 1976:406, 408) will not be repeated here since it has been profiled by others with great care, beginning with John Murra's ground-breaking article in 1972 (also see Murra 1985a and 1985b and 1984; Harris 1985; Shimida 1985; Dandler and Sage 1985; Burchard 1976; Platt 1976). However, given the continued adoption of key components of this system within Chimpa

Rodeo and Mojón, and its significance as an effective resilience strategy, selected features of its design and current application are highlighted.

Ecological Complementarity: Resilience Thinking *Par Excellence*

Ecological complementarity, as Murra (1985a:3) describes it, is the simultaneous control by a single ethnic group of several dispersed ecological tiers. The *ayllu*'s internal processes of differentiation and governance appear beautifully designed to facilitate the division and management of these dispersed land-holdings, with endogamy within one's minimal *ayllu* useful to the administration and control of lands spread over dispersed ecological zones (Platt 1976; Harris 1985). The multiplicity of lands, spaced between *puna* and valley ecosystems, but of sufficiently close proximity, can serve both as an adaptation to high levels of climatic risk and as an effective method of generating wealth (Murra 1984). Labour exchange mechanisms and the possibility of at least one of the ecological tiers surviving the hard lessons of an unpredictable mountain microclimate contribute to an increased likelihood both of adequate subsistence and of production surpluses. Ecological complementarity then is an adaptive management system that as Burchard (1976:372) puts it: "permits the human population to maximize the variation which exists within the environment in such a way as to enhance its long-term food production capacity and minimize risk". It is a very strategic approach to food security since, as Netting (1971:11) notes, "the long term security of any population is based not on its average level of production and consumption, but on the way in which it is able to weather periods of maximum scarcity" (in Burchard 1976:403). On the ingenuity of this system for efficient production, Dandler and Sage (1985:128) write:

The vertical organization of production in an ecologically diverse environment such as the Bolivian Andes creates complementary exchange relationships between different ecological zones. For example, the higher altitude areas act as the repository of clean potato seed [tubers] to provision the lower intermontane valleys. Such vertical organization permits a sequential timing of production tasks through a series of consecutive, though overlapping, agricultural cycles. This allows households to spread the demands on labour more evenly over the year, reducing the burden on women and children, whilst providing

the nutritional complementarity and the regular provisioning of food from different ecological zones.

An especially clever communal land-management component of ecological complementarity that is practiced on *puna* lands only, called *manta*, also enhances environmental benefits and the potential economic return from surplus production. Decisions about which fields to sow, crops to plant and fields to fallow are collective. Traditionally, the leader of each minimal *ayllu* distributed the *mantas* among the households of a hamlet. Now, the hamlet's households are well aware of the mantas for their use. However, collective control is maintained over the selection of fallows and over the direction of the rotational cycle (Platt 1982:45; Rivera 1992). This corporate group decision-making structure ensures adherence to crop rotation and fallowing cycles that not only benefit the commons, facilitating more ecologically sustainable production processes, but the community economy as well. Its inherent yield and market control mechanisms can be conducive to better returns on surplus production, that is, of course, if the surrounding communities also follow this practice.

There may also be a justice ethic at work within this system. As Silvia Rivera (1992:92) points out, the distribution of risk among the family members of a hamlet ensure that all will receive at least a minimum level of production to satisfy their basic needs. Citing Murra (1967b:343), Burchard (1976:428-429) offers several examples of how, within this system, the community assumes responsibility for the welfare of the "old, the disabled, and the 'poor'". In his analysis of the petty commodity regime in late nineteenth century Chayanta, Platt (1982:45) suggests that the *manta* system also serves as a mechanism to increase leverage when disputes arise over lands bordering a neighbouring *ayllu*. Individual vulnerability to land usurpation is reduced. Pressures on individual farm families to sell their land are likewise curbed. In sum, the system maintains an important internal control of vital resources.

The system of non-monetized product exchange or bartering between the *puna* and the valley, called *trueque*, is another substantive feature of ecological complementarity. Burchard (1976:456) considers this standardized exchange to be a critical component of

the adaptive process of ecological “verticality”⁵. An expression of Andean reciprocity anchored in a cosmovision that recognizes the give and take within both the natural and supernatural world, *trueque* is at the same time a practical response to the need for balanced diets and for products that are unavailable at home. Although monetization has affected the availability of products for barter, *trueque* remains a critical ingredient in the resilience of the subsistence and semi-subsistence farm family livelihoods in Northern Potosí today, including the Jalq'a communities in Ravelo.

Hand in hand with product exchange is labour exchange. Three of the most common forms are: *ayni* – a farm family will offer services, products, tools, or animals in direct exchange for another farm family's services, products, tools or animals; *minka* – group work parties perform a service for a particular household with the hosts providing food and beverages as well as in-kind payment for their day or days of labour; and *faena* – several households or the entire community pitch in to complete community service projects. Sanchez (1982:158) insists that these manifestations of the reciprocity concept, particularly *ayni* and *minka*, should not be interpreted as devoid of vested economic interests or competitive motive. Transactions are related to competition for social prestige and social acceptance. Whatever the motive, in contrast to the rules of competition in the free market economy where profit at the expense of the other is all too common, these reciprocity processes are, with rare exceptions, of benefit to both parties.

The need for products that cannot be harvested from the land or purchased with production income, such as tools, inputs, school books or the new medicines that promise a speedier recovery, also requires an additional resilience strategy: temporary migration for paid labour. Most families send one or two of their adult members to the city to work as day labourers or domestics. This short-term labour migration, averaging a total of 29 days and 25 days among my respondent families in Chimpa Rodeo and Mojón, is not entirely new. Both colonial and republican regimes pulled *Indian* labourers from their Potosí fields for work in tin and silver mines, however foiled in their efforts to recruit a permanent labour pool (Platt 1982:78).

⁵ Murra originally called the system ecological verticality, capturing the notion of its multiple tiers and levels. However, he later agreed that the term complementarity is a more encompassing concept (see Murra 1985b). It certainly captures the Indigenous notion of interconnectedness better.

Two final features of this governance and land management system deserve to be highlighted. First, community leadership positions are non-hierarchical but rather rotational. They generally last a year and alternate among the male heads of household. Responsibility for governance is thus shared. No single family bears a long-term sacrifice of its strongest male producer; and no single family is afforded the opportunity to dominate the community's direction and affairs. Loyda Sanchez (2002), a well-respected Bolivian educator who in the mid-1970s attempted to organize Andean campesinos into syndicated cadres along "rational lines" – to no avail – attributes this communal sense of rotational leadership to an Andean preference for knowledge sharing.

Last but in no way least, there is a very profound spiritual dimension to ecological complementarity. The indigenous stewards of this system, including Chimpa Rodeo and Mojón farm families, practice a cross of indigenous-Catholic spirituality that is intimately linked with their homage to *Pachamama* – the earth-goddess responsible for soil and human fertility (Dandler and Sage 1985:128). About the significance of *Pachamama*, San Martin (1997:90) writes:

Pachamama is the mother of all flora and fauna, maternal guardian of fertility and health, food, life and the well-being of the "children of the earth" who respect her.

Pachamama, therefore, is continually thanked for the gifts she shares with her stewards through a ritual called *ch'alla*. A local corn-based brew, *chicha*, is prepared for this purpose with thimblefuls splashed onto her soils every time her human children acknowledge or petition her help. During festivals and saints' days, the ritual is more formal and elaborate. The blessing includes coca leaf offerings, a tray of special ingredients obtained from a *curandero* or faith healer, the smoking of cigarettes to pacify the devil, and chasers of 80 proof alcohol brewed in the region. Anointment of these offerings takes place in all four directions of the planet. During wedding celebrations, participant's sip *chicha* from *tutma* shells (a type of calabaza plant) held in each hand to

symbolize the couple's new partnership and to honour the duality central to their take on the universe.⁶

These more significant festivals also occasion the sacrifice of sheep, and sometimes goats, pigs and cattle, with both the meat and intestines cooked and consumed by all in attendance, including *Gringo* researchers! Lines of sheep's blood are smeared on the faces of the local hosts or celebrities for the occasion, given the good fortune this sacrificed blood represents. Cattle are butchered in honour of the celebration when they are no longer of use for plowing and are of diminished economic value. An ample supply of coca leaves is also paramount for these occasions, although when the family budget can handle it, coca leaf mastication is a daily, daylong activity (see Burchard 1976; 1975; Allen 1988).

Pachamama has been given a Catholic base by her people as well. During two major religious festivals I attended, including the festivals of our Lady of Guadalupe and All Souls Eve, I repeatedly heard prayers that substituted *Pachamama* for the Virgin Mary. The ensuing legend about how the Virgin of Guadalupe festival gained importance in the lives of the people of Chimpa Rodeo also highlights this syncretism – the intimate marriage of Indigenous-Catholic belief. An elder from Chimpa Rodeo recounted the story during a 1998 planning exercise with an NGO partner:

This event occurred more than a hundred years ago, around the year 1862. *Don Vincente Ticona* was admiring a very pretty stone in an area called “*pasto cancha*”, the pasture field. Out of curiosity, he picked it up. As soon as he did his “*calzuna*” or pants fell down without anyone having touched them. He tried to pick the rock up again since he wanted to take it home, but each time he attempted to touch the stone, his waist belt loosened even though it had been fastened tightly and his pants fell down again. So he decided to leave the stone in the same place, thinking that it might be a sacred object. Indeed, it wasn't just an ordinary stone, but rather had, on one side, the image of the Virgin of Guadalupe.

⁶ Sucre's mestizo residents also practice *ch'alla*, especially during carnival, when similar ingredients are used to bless the home in all four corners. My next door neighbour in Sucre, a mestizo women from a well-known Sucre family, rushed to our home on the first morning of carnival with all the fixings for a proper *ch'alla*. She assured us that this blessing would bring us good luck during our sojourn in Sucre. Although we were all non-smokers, she insisted that we each inhale at least a few puffs of a cigarette to placate “*El Diablo*”. The NGO friends who helped me with my research also practiced a *ch'alla* blessing whenever a significant new purchase was made or a special event occurred. When we relaxed with a beer after a hard day's work, like grace before a meal, we all spilled a drop on the wood floor, bidding thanks to *Pachamama*.

Don Vincent Ticona was the *arrendero* (a local leadership position within the *arriendo*, the colonial land demarcation system that incorporated local hamlets) and advised the people of the area to move the object to a secure place, in the middle of a craggy peak that was nearby. Afterwards, *Juán Ckasicora* took it to his house in Ravelo and there the image of the Virgin of Guadalupe disappeared.

One day, those who were shepherding sheep in the *pasto cancha*, saw in the sky a splendid dove that was flying in the direction of a rock. It approached and sat there, completely still. And so the shepherds approached the rock to see what would happen. But they did not see a dove. It had disappeared. What they saw in this space was once again the image of the Virgin of Guadalupe. It was a miraculous apparition for the shepherds. It is possible that it was present to appease, reflect upon and correct the situation of the Natives who were suffering the abuse and exploitation of landholders who benefited from their free servitude.

Once the people of the Chimpa Rodeo *arriendo* learned of this miracle, they decided to construct a small *chojilla* [house] on this spot. They also informed the *patrón*, landowner Fortuoso Ramos, the *mayordomo*, or *arrendero* Mayor, Valintín Mamani, and the administrator Ricardo Muñoz. The *patrón* didn't believe them or pay much attention to the report.

There was one of those days of black clouds and storms, when you feared nature's power. So they had a meeting with the *mayordomo*, the administrator and the people of Huayllas and they constructed a chapel on the site where the rock with the image of the Virgin of Guadalupe stood.

At that time, a foreigner, *Don Pascual Choquiviri* from Condo in the department of Oruro, arrived with his llamas. When he saw the image [of the Virgin] he attempted to capture and visualize it by painting it [on the rock]. He was not successful and fell gravely ill. His son, therefore, had to complete his father's work.

Afterwards, the parish of Ravelo was invited to exorcize and bless [the chapel] and celebrate a mass, where many people had gathered. Later, the Bishop of Potosí also celebrated a mass there. Since then, every September 8 a mass is celebrated and they have a festival with much devotion. (*Vincente Yucra, Chimpa Rodeo, August 1, 1998*)

As Gledhill (1993:89) correctly suggests, colonized peoples "do not simply appropriate the symbols of the dominant order but subject them to powerful inversions"

and, I would add, to careful *subversion*. *Don Vincente* appears to have interpreted or been passed down a story foreshadowing Indigenous residents' ultimate liberation from their *haciendado* bosses. The legend demonstrates how physical and political domination do not necessarily go hand in hand with a colonization of the spirit. Myths, as Nash (1977:136/139) proposes in her investigation of myth and ideology in the Andean highlands, are a "way of responding to change". When the miners she studied experienced despair and disillusionment with political solutions, they "turned to their cultural origins to find the strength to survive" (Nash 1977:136). Myths can offer a comparatively safe intra-cultural critique of the dominant – the insider story or joke the outsider doesn't quite get. Referencing Scott (1990), Rahman (1999a:42) writes of a similar phenomenon in his study of the female credit holders with Bangladesh's Grameen Bank. Scott argued (1990:xii) that people who are deprived in society resist the oppression through the construction of their own "hidden transcripts". Rahman effectively demonstrates how discussions and behaviours "behind the backs" of Bank staff represented a welcomed opportunity to critique the power of the dominant. In the *Casa de la Moneda* in Potosí – a museum that charts the history of Bolivia's contribution to imperial wealth through the production of silver currency – there is a collection of colonial oil paintings completed by indigenous artists. According to the guide that interpreted this collection for me, a discerning visitor will notice that these paintings also include carefully disguised images of Andean mythology and beliefs. While the untrained viewer contemplates the *glory* of Spanish and Catholic imperialism, the trained observer finds symbols mocking the patron. In addition to being a pragmatic strategy to maintain cultural and environmental resilience, ecological complementarity is part of the highlanders' internal transcript. The system captures highlanders' connection to a natural world and to a broader cosmos they insist on interpreting on their own terms.

Of course, until INRA – the new land reform legislation of 1994 – Spanish colonizers and the political regimes in their wake ignored indigenous peoples' demands for territorial versus individual title (Urioste 1988:167). This turn of a deaf ear to their

requests seriously disrupted ecological complementarity.⁷ Nevertheless, in places like Northern Potosi, where the government presence was weak, principal components survived. As Murra (1984:119) observed and in keeping with my observations in the year 2000,

It is remarkable that, in spite of the pressure exercised against everything Andean and those who created them during the 450 years of colonial and republican regimes, we still encounter among highland peasants a preference for locating their fields in complementary fashion, on several different ecological tiers, sometimes located several days' walk from the centre of population. There is well-documented, contemporary evidence of sizeable groups who have managed to maintain their ethnic self-awareness, along with access to their outliers in the lowlands.

With its risk management and collective decision-making structures, product and labour exchange, temporary labour migration that helps people to stay on their land, and rotational leadership at the community level, it is tempting to paint ecological complementarity with a utopian brush. Those who have studied the system more closely than I have will quickly counter that it is not conflict-free or completely egalitarian in the sense of a one for all and all for one ethic (see Murra 1985b). Inter-ayllu conflict over land occurs, sometimes with violent and tragic consequences, as appears to be the case along the Potosi border with the department of Oruru (although colonial and post-colonial land demarcation have no doubt fuelled this feuding). When land is scarce, as described in Platt (1982), the youngest sons can be turfed from their highlands homesteads onto more marginal lands. Women remain largely outside the structure of public governance. There are also haves and have-nots within the system, although exchange mechanisms reduce the possibility of individual families going hungry. It is especially important to remember, as well, that wealth for these semi-subsistence farm families is not measured by cash income or homestead infrastructure alone. More significant, in their estimation, are the numbers of animals owned and husbanded. Cattle, in fact, are reported to symbolize the equivalent of a savings account.

⁷ The Bolivian government's land reform legislation of 1994, INRA, allows for the territorial claims of Indigenous peoples. Although painfully slow in its implementation, particularly given the new breed of "cowboy" squatter eager to slice off a handsome share of the pie, the legislation is welcomed and the source of important, albeit challenging, court claims.

Clearly, as with all systems, there are flaws in the design that, in addition to outside factors, weaken it. But it is a system that, when left to flourish, has allowed habitation on unforgiving lands beyond hand-to-mouth subsistence. Platt's (1982:28) findings on the robust wheat economy of the region before tin and silver mines shifted the nation's priorities represent an excellent case in point. It might also be argued that the system is one of "deep ecology" where, in Nazarea's (1999:104) words, "there is an affective link or emotional identification with the environment...a force that is much stronger than logical, objective justification for environmental conservation". My informants' comments about their lands or soil being tired, sick or burnt reveal such emotional identification. Most importantly, this system has contributed to the stewardship of one of the world's greatest shares of cultivated plants and in-situ crop and intra-crop diversity at levels most Western farmers could hardly fathom, let alone produce. Finally, it is a system that corresponds quite closely with the list of resilience principles presented in Chapter Two (based on Levin 1999) including:

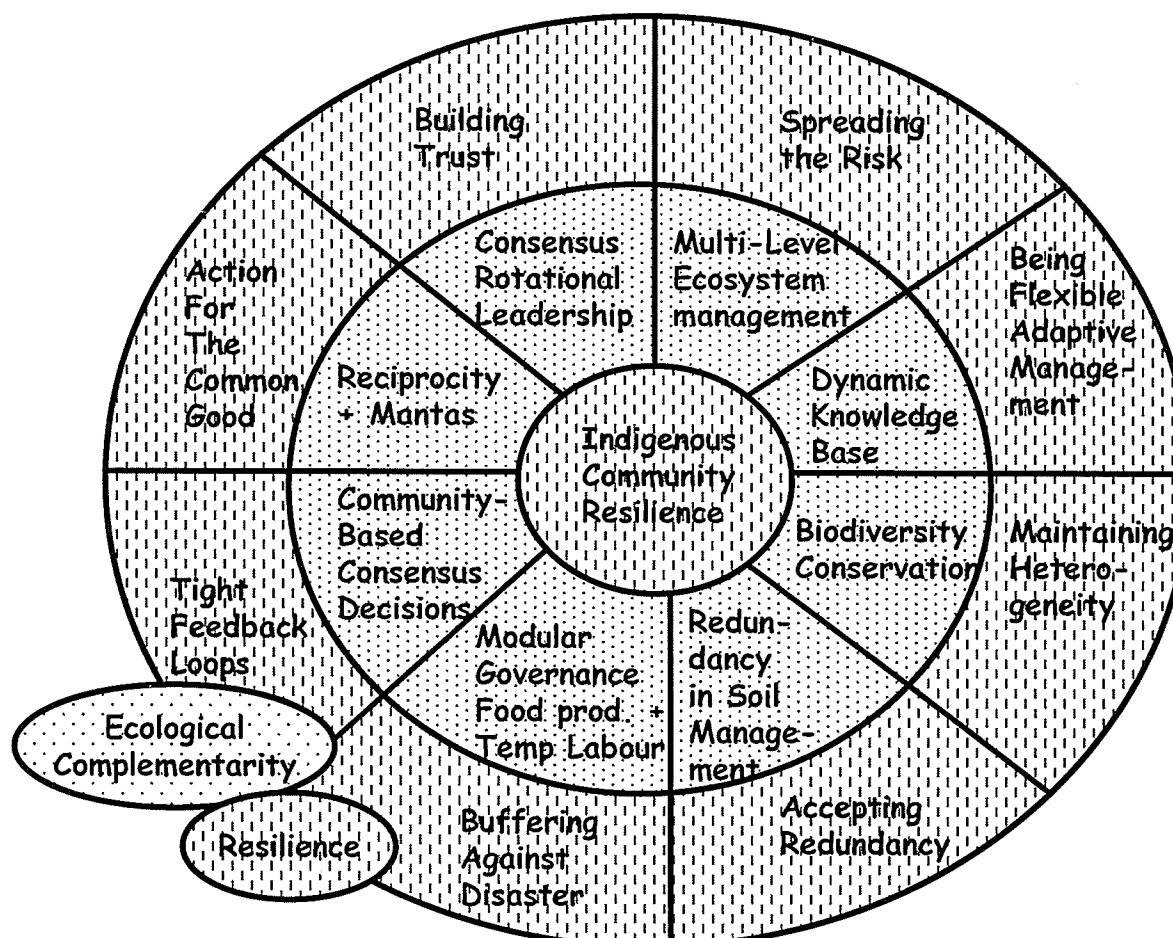
- The spreading of risk through the broadening of the scales at which communities rely on the ecosystem for services;
- The acceptance of redundancy through cropping and soil management systems that consider the interconnectedness of all natural resources and thus their potential value, if not immediately apparent.
- The nurturing of a knowledge base that is dynamic, memory-based, evolving, yet grounded in experience, and capable of reacting and reorganizing quickly under rapidly changing circumstances of mountain ecosystems;
- The maintenance of heterogeneity, especially through biodiversity;
- The existence of modular governance and natural resource management structures, providing a buffer against the domino effects of natural disaster;
- Multi-layered, decentralized levels of governance that strengthen feedback loops by minimizing the distance between decision, activity and benefit;
- Action for the collective good through collective land management decision-making that enhances environmental and social cohesion;

- The strengthening of trust through consensus decision-making, rotational leadership, knowledge and power sharing, and reciprocity practices.

Figure 5 features a kaleidoscope-like lens that I have developed to demonstrate this convergence. The outer ring of this “resilience lens” represents the central principles of resilience while the inner ring captures the chief components of ecological complementarity. The principles in the outer ring can be shifted one or several positions clockwise or counter-clockwise to reveal a new convergence with the components of ecological complementarity. For example, if one shifts the “Action for the Common Good” principle one position clockwise, this principle also corresponds with the ecological complementarity component “Consensus Rotational Leadership”. If shifted over two positions, it likewise fits with “Multi-level Ecosystem Management”, given the risk management principles this strategy supports. Similarly, if one shifts the resilience principle “Tight Feedback Loops” one position counter-clockwise, there is a new convergence with “Modular Governance” since smaller, local decision-making units facilitate enhanced communication as well as a sense of responsibility and ownership. Shifting this principle two positions counter-clockwise also works because redundancy in soil management (leaving fields fallow for years for example) can also act as a buffer against natural disasters. In the relationship between ecological complementarity and resilience one discovers a comfortable symbiosis.

The attempt to balance the good of the commons with the common good has kept ecological complementarity alive for centuries, weakened but not completely destroyed by Spanish *conquistadores* and more recently by the pull of a market economy and development enterprise that trumpet values of competition and comparative advantage. The subjects of my particular enquiry, the Jalq'a farm families of Chimpa Rodeo and Mojón, live with this dual, conflicting reality. A more in-depth examination of their particular experiences and responses now ensues.

Figure 5: Ecological Complementarity Through A Resilience Lens



Homespun Wool and Polyester Satin

My Western lenses glimpsed only limited, albeit multi-seasonal, slices of the cultural and community character of these Jalq'a communities. An openness to my presence, however, coupled with a variety of qualitative and participatory research techniques outlined in Chapter Four, helped me to observe important elements of this traditional-modern dialectic, including similarities and differences between the way the two settlements responded to it. When it comes to tangible or material manifestations of their culture, such as clothing, weaving and community celebration, the patterns and trends within Chimpa Rodeo and Mojón are quite similar. Traditional women wear a long-sleeved black dress called *almilla* that falls just below the knees and has a vivid, multicoloured embroidered band circling the hem. Their heads are covered by a thinly brimmed *juq'ullu* or cream-coloured bowler-like hat, designed along the lines of the European Derby of the 18th and 19th century (Platt 1992:135) and trimmed with a removable, multi-coloured woven band. *Ojotas* or flat leather sandals are worn year-round, in rain, wind, hail and temperatures that can drop well below freezing. I was always amazed not to find blackened or missing toes. A black, body-length woven shawl called *llijslla* is thrown over their shoulders.

Doubled over the back half of their *ch'umpi* waistbelt is a hip-wide, two meters long *axsu*, named after the tunic of their pre-Colombian female ancestors (Cereceda 1998:19). It offers added protection from the always-chilled earth that serves as their primary seat when cooking, attending meetings or socializing with their families and neighbours. What stands out about this enormously sensible garment, however, are the intricate patterns of supernatural animals called *khurus* – wild, indomitable animals impossible to domesticate. Some are easily recognized but zoologically impossible, such as llamas with three humps. They are crimson red or bright orange and are woven into backgrounds as black as a moonless night or brown like *Pachamama*'s rich soils. There is an almost total absence of abstract geometries or mirrored symmetry. Called *pallays*, these figures, according to Cereceda et al. (1998:30/31), reveal a dualistic worldview that is fluid and continuous yet dark and without reference points (also see ASUR 2000). There is also considerable artistry and creative impulse in these Jalq'a weavings. As Kevin Healey (1992:32) observed about the work of the Jalq'a, "weaving is a

conceptual activity like literature or painting that communicates a way of experiencing the world, not explaining it". Tristan Platt's (1976:12) insightful observation about Andean weaving in general also merits citation:

In societies without writing, one of the first places where they portray the collective memory is the body...[P]recisely, the Andean weavings contain more information than if they were a second skin...[They] offer social information [and] ...represent a conceptual and symbolic universe that is surprising in its richness.

My informants offered a rather straightforward explanation for the figures in their traditional *axsu*. The figures in their weavings were revealed to them in dreams. That is why no two weavings are the same.

Traditional males also wear a *juq'ullu* hat and *ojota* sandals, as well as an *almilla*, only in their case this is the name given to their white shirt. The shirt is sufficiently long-waisted to be tucked into trousers, called *calzón*, the Spanish term for underwear, appropriately so as they barely cover the buttocks and pelvic area and require a rope tied tight around the hips to keep them in place. Both the hem of the sleeves and trousers have a very thin band of varied colours embroidered on them, embroidery that men themselves complete, possibly to personalize or label their uniform. Wrapped around their waist is a shorter and thinner *llijlla* shawl. It can be converted into a carryall for small bundles of produce or other items needing a lift to market or home. Finally, a dark *poncho* of black or brown with almost invisible stripes is pulled over their head and shoulders when the sun sets for the night. Some ponchos also contain a faint border of the *pallay* figures similar to those featured in the *axsu*. Of particular interest in the men's uniform are the black bands or large rectangular patches a third of the way down each sleeve. These stand in sharp contrast to their predominantly white uniform, a symbol of the oppositional forces in the universe and a reminder, seniors explain, of the need to be awake and vigilant at all times (Cereceda et al. 1998:17). Both men and women sling a small woven bag over their neck and shoulder to hold their coca leaves.

While more of Mojón residents have held onto traditional dress,⁸ the adoption of more Western garb is considerable in both locations. The majority of those I spoke with

⁸ Extension workers estimated that there are still at least 25% in traditional dress within Mojón. It has not been possible to confirm this estimate, since a goodly number of families were away in the valley.

reported an almost complete switch to Western dress within the past one to two decades. For women, this means an indigenous version of Western clothing reminiscent of colonial styles. The outfit includes a *pollera* – a very full, gathered skirt of polyester satin that reaches just below the knee and sits over a polyester and cotton crinoline – a satin, front-buttoned blouse, a synthetic wool cardigan, and a large synthetic wool shawl or blanket worn as a shawl. A wide-brimmed straw hat with a bright ribbon is the preferred headgear. Their sandals continue to be the *ojotas* of the traditional dress. From little girls to seniors, none of the females I encountered in either community wore trousers or jeans.

Western clothing for males is almost indistinguishable from that of the mestizo male in urban centres – baseball cap or fedora crowning the look. A closer inspection reveals shirts and trousers, sometimes jeans, which are generally patched several times over, stitched or fastened with a safety pin, and crusted with dust since water to wash clothes is extremely limited. Nor do their feet find comfort in the copy-cat "Adidas" sold in the city. With some exceptions, like their mothers, wives and sisters, they too walk with *ojotas*. Most of this "modern" clothing, although occasionally produced at home among families with sewing machines, is either purchased in Sucre's black market or, more often than not, from the second-hand clothing shops that have diverted donations from Western church basements into their urban stalls. The prices requested, in fact, are frequently higher than those scribbled on the leftover tags of charities from afar. I found a "Value Village" price tag for Cdn. \$3.00 on an article the shopkeeper wanted US \$5.00 for, no bargaining permitted in this case.

The senior women I interviewed had little good to say about the flimsy synthetics from the city. They complained of their especially poor protection from the weather. One woman asked, "What would we use [otherwise] to cover ourselves from the cold and rain?" Younger women countered that these modern clothes were lighter and more comfortable. They were definitely flashier and if there was water available, much easier to wash and dry. Males of all ages noted that temporary migration for urban employment required this city clothing, although one ageing farmer expressed a deep sadness over the change, equating it to a loss of the Jalq'a culture. There was also some talk that

complaints regarding how cold the winter season had become reflected, in fact, this shift to the poorly insulated clothes from the city.

Once again, however, the new has not entirely replaced the old. During cool highland evenings and bone-chilling nights, the males of both communities proudly cloak themselves with the finely crafted, hand-woven sheep-wool *panchos* generations of wives and sisters have created. The patterns of these contemporary weavings no longer included the complex *pallays* of the *axsu*. Their bright colours – particularly amongst Chimpa Rodeo families able to afford artificially dyed wool – and geometric figures reflect a new generation of taste as well as a possible decline in the inter-generational transmission of the chaos-creation mythology. But the artistry in this entirely memory-based production remain strong. On an *awaykurqu* – a loom of smoothed tree branch poles that leans loosely against an adobe wall – and with a needle of chizzled sheep-bone, young women produce textiles Westerners would, and sometimes do, frame for their living room walls.

Jalq'a husbands are proud of their wives ability to weave beauty from the matted wool of local sheep. They openly value other skills as well, such as their expertise in animal husbandry. While virilocal marriage places young wives at the mercy of her spouse's family and friends in her new hamlet, there is not the strict gender-role stereotyping often found amongst the more affluent *mestizo* residents in conservative Sucre. Farming, for example, is a joint, family activity (see Tables IV and V). There is some task differentiation. The men generally guide the heavy wooden plow, pulled by a pair of *yunta* or oxen, and women cook the midday meal when additional workers are recruited. Because of their fertility, women are generally preferred for the placement in the *surco* or furrow of the potato tuber and other seeds, although there are exceptions. But both genders line up behind the *yunta* to complete the planting process. In addition to digging a furrow, this planting process includes verification with a pick-axe that there is a sufficiently deep trench, the dropping of the potato tuber, the application of artificial fertilizer in the case of introduced varieties, the spreading of sheep manure, locally referred to as *guano*, and the covering of the furrow.

TABLE IV CHIMPA RODEO, BOLIVIA, FOOD PRODUCTION DIVISION OF LABOUR

Families (14)	Furrow			Seed			Cover Seed			Plow			Meals			Chemicals			Harvest			Selection			Thrashing			
	M	F	M+F	M	F	M+F	M	F	M+F	M	F	M+F	M	F	M+F	M	F	M+F	M	F	M+F	M	F	M+F	M	F	M+F	
Family 1	yes				yes		yes			yes			yes			yes			yes			yes			yes			yes
Family 2	yes				yes		yes			yes			yes			yes			yes			yes			yes			yes
Family 3	yes			yes				yes		yes			yes			yes			yes			yes			yes			yes
Family 4	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes
Family 5	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes
Family 6	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes
Family 7	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes
Family 8	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes
Family 9	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes
Family 10	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes
Family 11	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes
Family 12	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes
Family 13	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes
Family 14	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes
TOTALS:	14	0	0	0	14	0	1	0	13	13	0	1	0	14	0	8	3	3	0	0	14	0	1	13	3	0	11	
Percentages:	100			100			7		93	93		7		100		57	21	21		100		7		93	21		79	

TABLE V MOJÓN, BOLIVIA, FOOD PRODUCTION DIVISION OF LABOUR, August 2000

Families (8)	Furrow			Seed			Cover Seed			Plow			Meals			Chemicals			Harvest			Selection			Thrashing				
	M	F	M+F	M	F	M+F	M	F	M+F	M	F	M+F	M	F	M+F	M	F	M+F	M	F	M+F	M	F	M+F	M	F	M+F		
Family 1	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes	
Family 2	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes	
Family 3	yes			yes			yes			yes			yes						yes			yes			yes			yes	
Family 4	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes	
Family 5	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes	
Family 6																													
Family 7	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes	
Family 8																													
Family 9	yes			yes			yes			yes			yes						yes			yes			yes			yes	
Family 10	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes	
Family 11																													
TOTAL:	8	0	0	0	7	1	5	0	3	8	0	0	0	8	0	4	0	4	0	0	8	0	0	8	7	0	1		
Percentages:	73			64	9	45	27		73				73			36	36		73			73	64		9				

No Response = 

Both women and men also join forces when the crop is ready to be gathered and sorted. The potatoes are generally divided into five primary categories for use: seed, consumption, bartering/gifts, sale, and for post-harvest processing. The primary example of the processed product is the freeze dried potato, *chuño*, popular among highlanders who must cope with a long, dry winter season.

With some exception, heavy infrastructure projects are generally left to the males of the community, as is the delivery to market of surplus produce. Exceptions generally occur when the male member of the family is unable to contribute his labour for *faena*, such as for the maintenance of a community road, or in the case of women-headed households. During the road maintenance activities I observed, for example, there were always at least a few women present. Their agility with a pick-ax seemed equal to that of any male on the road crew.

There is gender-based differentiation when it comes to the care and management of livestock. Males husband the large animals, like cattle, while women, with the assistance of their children, accept responsibility for the breeding and nurturing of the smaller livestock that include sheep, goats and a few pigs. Women's animal husbandry is especially valued since sheep provide the manure for crops, the wool for clothing, the bones for implements and the blood and food for ritual celebration.

The worship of Pachamama and women's role in planting demonstrate the honouring of women's fertility and their capacity to nurture. But this power to create is perhaps also feared by their male counterparts, as the following legend⁹ of the origins of the potato suggests:

An Inca prince went on a walk with his sister and brought her into the farthest mountains. He left her there and said to his parents that she was the victim of the voracity of a serpent. The parents cried but later forgot about her because the prince had paid the witches and shamans to say that the princess had caused the ruin of the Inca empire.

⁹ I received a copy of this legend from an IPTK colleague shortly before my departure from the field. He had clipped it from an agricultural magazine published in Sucre but had not noted publication information, only the name of the person who recounted it in the magazine: R.L. Salazar. I was thus unable to confirm the extent to which the people of Chimpa Rodeo and Mojon knew of this legend. I include it here with this note of caution because my IPTK informant was convinced of its authenticity as a highlander legend and because its story fits well with the creationist mythology of the people of this region.

In the meantime, the Princess cried tears that were alive and the teardrops fell and grew into beautiful plants and flowers that produced fruit in a short period, in hours, and so the youth who was by then starving took the fruit, examined it, smelled it, took a bite, then ate it. She then fell asleep. In her dreams the moon revealed that the best fruit was actually in the earth. When she awakened, she dug up the plant and discovered tubers as large as the head of an Indian. She separated the tubers and saw that they were mealy and good to eat. Thereafter they were her only food during her entire exile.

After ten years, a group of merchant Indians encountered the princess. They led her to a village after having seen much [of her] labour. The Indian girl brought many potatoes and tubers that were later planted and cultivated. The Inca [King] rejoiced at seeing his daughter and called his son to reprimand him for his conduct; but the Prince continued to insist that the Princess had really been the tragic victim of a snake. The princess said nothing against her brother. But the Inca was not content with his son's response. So he called the prophets once again. Petitioned for a second time, they declared that God had given them this message. The disappearance of the Princess has saved the Imperial Empire from great calamities and her reappearance was a sign of wealth for the Empire. Evil had been converted to enormous good and forever more we will have continuous examples of this good in the form of new potatoes. The INCA was satisfied, gave thanks to the Sun and hosted a great banquet for all the people of the village to celebrate his daughter's discovery. During this feast, everyone came to know the miracle potato and later they shared its seeds with all in attendance. At the request of the Princess, they planted the precious plant, with each plant yielding one hundred more.

Women's fertility, as this legend suggests, is clearly celebrated. Childcare, however, is not a uniquely female task. Infants and toddlers are strapped on male as well as female shoulders by the colourful awayo or baby blanket. Both parents openly demonstrate tenderness and affection for their young children. Still the bulk of domestic responsibility rests squarely on women's shoulders. Some men I spoke with admitted that women often bore the heavier workloads. Women's workday did seem endless at times. But both genders displayed the industriousness critical for subsistence and semi-subsistence livelihoods. Both also found time to join neighbours for conversation, sharing food and beverages when visits corresponded with mealtimes. Women and men were equally keen participants in community festivals. Some of the extension workers I

met subscribed to theories about Andean complementarity that suggest a comparatively strong gender equity component within this system.

The women I met were certainly not defeated or downtrodden. Women's participation during festive occasions went well beyond a service role. During special celebrations like that of our Lady of Guadalupe, villagers called on both a wife and husband to serve as the festival's *madrino* (godmother) and *padrino* (godfather). Women were consulted when important production, purchasing or parenting decisions had to be made. Indeed, in public meetings that I attended, decisions were sometimes postponed if male representatives had not had the opportunity to consult their spouses first. When widowed or abandoned, women had the option of returning to their home community or remaining in their married home. If the latter, her in-laws were there to assist when needed. Still, women's voice in the public governance of both communities was generally indirect and quiet. The political leverage of a woman-headed household was thus especially marginal (see Wiest 1998). Except when widowed or if there were no brothers, equity of land rights remained elusive for most women. Girls were the first to be plucked from school to shepherd domestic animals. Until recently, women were excluded from public office and union representation, with the modest gains of today the result of outside pressures for greater gender balance.

Women's vulnerability to spousal abuse was particularly telling, especially during festivals when their men drank to excess. One male informant joked that wife-beating during festivals was a welcomed release! An eighteen-year-old woman told me that she never wanted to get married because, during festivals, husbands on drinking binges hit women. Patriarchy here, as elsewhere, has an insidious presence that speaks to the darker side of community. Those struggling to end this kind of gender-based oppression have their work cut out for them.

A more joyous side of community is to be found in the pageantry, music and dance of the Jalq'a. Religious festivals and national holidays are almost always occasions for celebration (see Appendix Two entries on the Festival of our Lady of Guadalupe and on All Souls' Eve). In true Jalq'a fashion, male youth will don colourful paper maché or wooden masks, bring out at least three different instruments, including Andean pipes, a small lute-like *charango* and a drum, and dance in a circle, enticing both men and

women of their community to join them in the dance. The instruments, dances and songs are slowly changing, however. Residents over 30 years of age in both communities lamented the decline of the more discernible expressions of their Jalq'a culture, such as the disappearance of the Jalq'a *charango*, differentiated as Jalq'a by its comparatively large size. Traditional Jalq'a songs and dances have also failed to capture the imagination of today's youth. As Tables VI and VII indicate, an average of 59% of the 25 families I surveyed said that their children did not know Jalq'a songs and 45% hadn't learned Jalq'a dances. The dances and songs of their sons and daughters, although remaining folkloric in style, were hybrids from peri-urban *barrios* or neighbourhoods, transported through schools, migration and new technologies. Residents' concerns about the impact of these modern influences were considerable. Within Chimpa Rodeo, 50% of respondent families feared their grandchildren would no longer follow Jalq'a ways. An even greater percentage in Mojón, 64%, predicted a probable switch to modern ways within two generations.

Spiritual and Practical: Living With Contradiction

Like their Andean *comuñeros*, both Chimpa Rodeo and Mojón residents demonstrate indigenous spirituality within the Catholic religious rites of passage. They also report a strong spiritual and intuitive dimension to their land-use and production practices. Most farmers I met, for example, noted their consideration of the lunar cycle when deciding to plant or harvest their crops. To ensure that one's bull will be *gordo* or fat, it should be castrated when the moon is full. A careful monitoring of the flowers of the peach tree in the valley will help one to predict the season ahead. During the Festival of the *Virgin de Guadalupe* in early September, some people check to see if it will be a good year for production by looking to see if the *muña* flowers bloom towards the sun. If their petals droop like tears, or if there are few blooms, it will be a bad year (Choque 1999).

TABLE VI CHIMPA RODEO, BOLIVIA, LITERACY AND CULTURAL LONGEVITY PERCEPTIONS, July 2000

Families (14)	No. of Males	No. of Females	Functional Literacy			Signature Only		Children Know Jalq'a		Grandchildren Remain Jalq'a
			M	F	Total	M	F	Dances	Songs	
Family 1	3	4	1	1	2	1		yes	yes	
Family 2	1	1	1		1		1	yes	yes	yes
Family 3	1	5	1	2	3		2	yes	yes	
Family 4	5	3	3	2	5	1	1	yes	yes	
Family 5	2	4	1	2	3		2			
Family 6	3	1	2		2	1	1			yes
Family 7	4	1	3		3	1	1			
Family 8	1	2				1				yes
Family 9	5	3	4	1	5	1	1			yes
Family 10	2	2	1		1		2	yes	yes	yes
Family 11	2	1	1		1	1	1			
Family 12	4	3	3		3	1	1			yes
Family 13	5	3	3	1	4	1				
Family 14	6	3	1		1	3	2	yes	yes	yes
Totals:	44	36	25	9	34	12	15	6	6	7

% Literacy among Males

57%

% Literacy among Females

25%

% Literacy (total)

43%

% Males Sign only

27%

% Females Sign only

42%

% Children know dances

43%

% Children know songs

43%

% Survival of Jalq'a Culture

50%

TABLE VII MOJÓN, BOLIVIA, LITERACY AND CULTURAL LONGEVITY PERCEPTIONS, August 2000

Families (11)	No. of Males	No. of Females	Functional Literacy			Signature Only		Children		Grandchildren Remain Jalq'a
			M	F	Total	M	F	Dances	Songs	
Family 1	1	2				1		1	1	1
Family 2	4	2	3		3	1		0	1	0
Family 3	4	3	3		3		1	1	1	1
Family 4	4	4	2		2	1		0	0	0
Family 5	1	6	1		1		2	0	1	0
Family 6	5	3	1	1	2	1	2	1	1	1
Family 7	3	3				1	1	0	0	1
Family 8	5	3	3		3	1	1	1	1	0
Family 9	3	3	2		2		2	0	0	0
Family 10	1	2	1		1		1	0	0	0
Family 11	2	1	1		1	1	1	0	1	0
Totals:	33	32	17	1	18	7	11	4	7	4

% Literacy among Males	51%
% Literacy among Females	3%
% Literacy (total)	28%
% Males Sign only	21%
% Females Sign only	34%
% Children know dances	36%
% Children know songs	63%
% Survival of Jalq'a Culture	36%

Planting and harvest activities always begin with a *ch'alla* blessing; a *ch'alla* is likewise performed on new animals, tools and agricultural inputs. Babies are protected through the *ch'alla* long before parents bring them to the Catholic priest for baptism. Few could articulate a clear rationale for these beliefs, except to note that this was the way of their grandparents. Like Indigenous peoples around the world, their cosmovision appeared to reflect the circular, holistic and connected knowledge systems (Rengifo 2000; AGRUCO 1998; San Martin 1997) highlighted in Chapter Two. Of course, the diversity of human thought and approach common to all human societies is present here as well. One senior resident told me, for example, that he had experimented with planting when the moon was full. He observed no noticeable difference so continued to plant when it was most practical and convenient. This decision offers an excellent example of the pragmatism that also characterizes Jalq'a decision-making.

If we return to the planting process, a good measure of practical consideration is also evident. Fertile women are supposed to place the seed in the earth. Ninety percent of families surveyed noted this requirement. However, when women are otherwise engaged, men will handle this task, as I discovered when I found two brothers in Chimpa Rodeo planting an early crop in a small field beside their house. Within another potato planting exercise in Mojón, an elderly gentleman and his granddaughter dropped the potato tubers into their narrow trench. Freed from the Western need to reconcile competing ideas and processes so that there is one clear logic, these Jalq'a farmers, as highlighted in my earlier citation of Nash (1979), seem able to live with more than one logic at a time. Bending the rules seems not to be so difficult when one is comfortable with differing realities. The stitching of the modern onto traditional ways or vice versa, although neither straightforward nor free of tension, should not, therefore, be interpreted automatically as a sign of unwelcome cultural erosion. The Jalq'a of Chimpa Rodeo and Mojón are active agents in their transition to a world of blended traditions and practices (see Escobar 1995). They make choices and construct meaning that makes sense to them within a context of cultural and historical situations that, not unlike the ecological

conditions they monitor so carefully, are in a state of flux. Their application of governance structures outsiders have introduced offer evidence of this agency¹⁰.

In both Chimpa Rodeo and Mojón, the Indigenous *ayllu* structures have given way to the Western structures of organized labour. The residents of Mojón claim membership in the Sawana Wata *Ayllu* and retain a couple of traditional positions. However, in both Chimpa Rodeo and Mojón, it is the local *dirigente* or community head of the *syndicato de campesinos* (farmers' union) who calls the community meeting to order. An agenda is determined, participants' names are recorded, minutes are taken and rules of order established. Participation in such a meeting soon makes it clear, however, that traditional governance systems have not been replaced entirely by the new. The rotational leadership structure of the *allyu* system, for example, has been stubbornly maintained. The *dirigente* position rotates to a new family from year to year. Consensus decision-making and shared responsibility are consistently preferred over a voting system in which a narrow majority can rule. Resources to assist with the organizing needed to assert their rights vis-à-vis the dominant society are clearly welcome. But the wholehearted adoption of a system with winners and losers does not sit easily with people who need collectivity and cooperation to survive and prosper.

Nor has the value of "minutes" – the documented interpretation of the literate few – surpassed the value of an openly negotiated account of events and decisions. There continues to be accountability to decisions that reflects the understanding of a broader cross-section of residents. The acceptance of oral versus documented evidence offers the possibility for a change of perspective. Such flexibility suits people necessarily more concerned with the impact of the decision on community relations than with a decision etched in stone.

In the *originario* community of Mojón, residents have, not surprisingly, held on to more components of *ayllu* governance. Vestiges of this system today include the ex-oficio presence of an *alcalde comunal* or community mayor and two local *curanderos*,

¹⁰ The practical agency of the Jalq'a farmer calls to mind practice theory. Influenced by the scholarship of Pierre Bourdieu (1972), this theory seeks to explain the dialectic between human activity and the systems humans operate within (Ortner 1984:148; also see Rahman 1999 and Gledhill 1993). However, other than my inclusion in Chapter Two of van der Ploeg's critique of Bourdieu's view of indigenous knowledge as practice without theory, treatment of the applicability of this conceptual framework to the world and agency of Andean highlanders will be left to future scholarship.

healers who practise a blend of faith healing and curative medicine through the use of local shrubs, herbs and other substances with medicinal value, such as human urine regularly used to treat coughs. The community mayor was in the valley when I was present. However, I did meet the curanderos, although without my researcher's notebook in hand. The first was a woman who I met on a very informal basis at the schoolteacher's house before I discovered her status as a local healer. My encounter with the other *curandero* was more substantive. It seems worth recounting now, as it sheds some light on the tension between indigenous beliefs and modernity that also shapes the lives of the Jalq'a in my study.

I sought the male *curandero* out after hearing rumours that his young toddler was dying, the probable result of severe dehydration from gastro-enteritis. I asked the local schoolteacher to take me to the his home, thinking that I might be able to help if only to offer rehydration fluid and funds to assist with medical attention in Ravelo. After a ten-minute walk from the school, we arrived at the *curandero*'s home with homemade rehydration fluid to find a child who, in this mother's eyes, seemed extremely weak, but thankfully not on her deathbed. Her obviously worried parents reported an improvement from a couple of days previous, as she had only one bout of diarrhoea and two episodes of vomiting the night before. We offered the rehydration fluid and, if they needed, money to seek medical attention in the Ravelo health centre.

The *curandero* and his wife initially hesitated to accept my makeshift concoction of bottled water, salt and sugar, understandably wary of a stranger from afar. My Quechua-speaking companion explained who I was, the purpose for my presence in Mojón, the fact that both the *autoridad maximo* and the community had agreed to my research and why the liquid might help. The couple eventually decided to feed it to her, feeling, perhaps, that they had nothing to lose. I noticed that they had already been giving her fluids, likely with herbs and natural medicines from the area. Since there were a couple of potable water taps in the community, I assumed that the water was potable. Ever the Western thinker, however, I quickly surmised that the extremely unhygienic container holding the liquid was contaminating the concoction, defeating its purpose.

Acceptance of some financial assistance with their daughter's delivery to the health centre in Ravelo was another matter entirely. They had not taken their daughter to the

centre in the first place because, they explained, they would be forced to pass a series of crosses en route – markers of road deaths – that could evoke bad spirits and make her worse. The teacher, an outsider from a more urban background, later complained to me that their inaction actually reflected an unwillingness to spend money on the child's health care. "Animals", she remarked angrily, "are more important to *these people* than their children", a comment I was to hear from outsiders at least a few times. But the rationale for their avoidance of modern medical attention seems far more complex. Apart from the evocation of bad spirits, five additional factors might have also influenced their decision. Since my visit was not an occasion to quiz them on their beliefs, these reasons are speculative, based on broader discussions with villagers and field workers.

First, fear of the unknown might have also contributed to their reluctance to visit the Ravelo clinic, since neither had visited a health centre before. Second, the idea of health care without a spiritual dimension probably seemed ludicrous. Third, the cost for a full prescription of the medicines that they would have been asked to purchase for their daughter would have been well beyond their means. In any case, neighbours would have declared the medicines to be of limited value since their experience with the one or two-day supply that they could afford would have yielded poor results. Fourth, a *curandero* using the tools of modern medicine may have left an impression within the community that modern medicines are superior, thereby risking the viability of a business that supplemented their family's livelihood. Finally, the young child's parents no doubt believed that their treatment would succeed. Indeed, without the intervention of modern medicine, their child recovered.

As an ex-hacienda community, Chimpa Rodeo villagers have abandoned all *ayllu* leadership positions, including the position of *curandero*. They are, in fact, quite familiar with and use Western medical services, since a small health post is a forty-five minute walk away and an international NGO in the area has drawn selected residents to preventative health care training workshops. Still, despite the advice of their Western teachers against dependency on *curanderos*, they too reported the use of such services, even though travel to an indigenous healer outside the hamlet was often a much longer trek than the walk to the near-by health post or to Ravelo's municipal health centre. As a matter of fact, I discovered this continued use of *curandero* services during a

conversation with one of Chimpa Rodeo's trained health promoters. She sought the services of a *curandero* to deal with severe headaches, dizziness and blurred vision – possibly migraines. The remedies from the local health post, likely an inexpensive mild painkiller, had not worked well. But, she reported, her two visits to the *curandero* had helped quite a bit.

Other differences between the two communities include the fact that school-age children in Mojón have had access to three years of primary school in a tiny, one-room adobe schoolhouse that the community built on its own just a few years ago.¹¹ Chimpa Rodeo families have been sending their kids on a 45-minute hike to a larger area school until the fifth grade. Literacy rates, in part, reflect this difference. As noted in Tables VI and VII above, 47% of the members within my 14 respondent families in Chimpa Rodeo had some functional literacy while only 28% of the members within the 11 families in my Mojón household survey reported a similar level. The percentage difference between the males was only 8%. The illiteracy of the women of Mojón appears to have made the substantive difference with only 3% versus 32 % within my Chimpa Rodeo sample able to read, write and compute basic arithmetic (see "Literacy for Commerce" entry in Appendix Two). These are reported figures, not verified through rigorous testing. They do correspond fairly well, nevertheless, to the general census data for the area cited in various local reports (see IPTK 2000; 1999a; 1997; NOVIB 1999; PAC`1996).

There are also significant socio-economic differences between the Chimpa Rodeo and Mojón settlements. Noted in Tables VIII through XIII, these suggest that if one were to conduct a wealth-ranking exercise with the twenty-five principal families in my study based on infrastructure and animal holdings, Chimpa Rodeo's residents would undoubtedly be placed on a higher rung than their Mojón counterparts. However, as the closing discussion of this chapter suggests, if one were to place Chimpa Rodeo's farm families within a resilience lens, they would not necessarily fare better.

¹¹ During my last brief visit in March 2003, the municipality, with funds from the educational reform program, has completed the construction a new facility that facilitates access to grade five.

TABLE VIII CHIMPA RODEO, BOLIVIA, DEMOGRAPHIC DATA (14 of 33 families or 42%), July 2000

Families (14)	Adults		Children		Language Spoken		Valley Migration		Permanent Relocation to City (No. of Persons)	Wife's Village/Municipality
	Male	Female	Male	Female	Quechua	Spanish	Temporary (No. of months)	Full-time (No. of Persons)		
Family 1	2	2	2	4	9	2	3	2	0	Sauce Mayu/Ravelo
Family 2	1	1	2	2	5	1	6	0	0	Lequecha/Ravelo
Family 3	2	1	4		7	4	2	0	0	Chimpa Rodeo/Ravelo
Family 4	2	2	4	1	9	5	1	1	0	Ura Rodeo/Ravelo
Family 5	1	5	1	1	7	2	0	0	2	No response
Family 6	1	1	2		4	3	0	0	0	Valley/ Chuquisaca
Family 7	3	1	2	2	8	5	2	0	1	Lequecha/Ravelo
Family 8	1	2	1	2	6	2	2	0	0	Pajly/Ravelo
Family 9	1	2	4	1	8	6	0	0	2	Ravelo/Ravelo
Family 10	2	2			4	1	1	0	0	Valley/Chuquisaca
Family 11		1	2		3	2	0	0	0	Ura Rodeo/Ravelo
Family 12	2	2	6		9	2	2	0	0	Chimpa Rodeo/Ravelo
Family 13	3	2	2	1	8	5	4	1	2	Chimpa Rodeo/Ravelo
Family 14	1	3	6	2	12	3	1	0	2	Chimpa Rodeo/Ravelo
Total:	20	28	35	20	99	43	24	4	18	

Total Adults	48
Total No. of Children	55
Total Survey Pop.	103
% Speaking Quechua	96%
% Speaking Spanish	42%
Avg. Months in Valley	1.7
% With Residence in Valley	4%
% Siblings/Children Permanent Move to City	17%
% of Ravelo Municipality Wives	85%

TABLE IX MOJÓN, BOLIVIA, DEMOGRAPHIC DATA (11 of 46 families or 24%), August 2000

Families (11)	Adults		Children		Language Spoken		Valley Migration		Permanent Relocation to City (No. of Persons)	Wife's Village/Municipality
	Male	Female	Male	Female	Quechua	Spanish	Temporary (No. of months)	Full-time (No. of Persons)		
Family 1	1	2		1	4		5	0	0	Mojon, Ravelo
Family 2	1	2	4	1	8	3	5	0	0	Moroto, Ravelo
Family 3	3	2	1	3	9	2	5	2	0	Pichacani, Ravelo
Family 4	1	3	3	1	8	2	5		3	Mojon, Ravelo
Family 5	4	1	1	3	9		5		1	Tana Pacaje (valley)
Family 6	1	1	5	2	9	2	10	9	0	Mojon, Ravelo
Family 7	3	2	1	1	7	1	5	0	0	Chokochuro (valley)
Family 8	4	3	2	2	9	4	5	2	0	Kisca Cancha, Ocuri
Family 9	2	3	1	1	7	3	4	0	0	Mojon, Ravelo
Family 10	1	1		2	4	1	5	0	0	Quellu Casa, Ravelo
Family 11	1	1	2	1	5	1	3	0		Antora, Ravelo
Totals:	22	21	20	18	79	19	57	13	4	

Total Adults	43
Total No. of Children	38
Total Survey Pop.	81
% Speaking Quechua	98%
% Speaking Spanish	23%
Avg. Months in Valley	5.2
% With Residence in Valley	16%
% Siblings/Children Permanent Move to City	5%
% of Ravelo Municipality Wives	72%

TABLE X CHIMPA RODEO, BOLIVIA, INFRASTRUCTURE AND ANIMALS, July 2000

Families (14)	Household Amenities					Animals						
	Latrine	Tap (FHI)	Green-house	Thatched Roof	Tile Roof	Cattle	Sheep	Goats	Pigs	Chickens	Horses	Mules
Family 1		yes	yes	yes		4	30	9				
Family 2	yes	yes			yes	4	15	3	2	7	1	2
Family 3	yes	yes		yes		8	26	10	7	7		
Family 4	yes	yes	yes	yes		8	37		5	7		4
Family 5		yes		yes			20		3	4		1
Family 6	yes	yes			yes	5	25	10	4	3		1
Family 7		yes			yes	7	30	7	5	6		
Family 8	yes	yes			yes	8	30		6	2	1	
Family 9		yes		yes		4	20		10			
Family 10	yes	yes	yes	yes		6	25	5	1	5		
Family 11	yes	yes		yes			25		2			
Family 12	yes	yes		yes		10	30		5	5	2	1
Family 13		yes		yes		2	10					
Family 14	yes	yes		yes		2	30		1			2
Totals:	8	14	3	10	4	68	353	44	51	46	4	11

Avg. No. HH with Latrines 57%

Avg. No. HH with Taps 100%

Avg. No. HH with Greenhouse

21%

Avg. No. HH with Thatched Roofs

71%

Avg. No. HH with Tile Roofs

28%

Avg. No. of Cattle

4.8

Avg. No. of Sheep

25.0

Avg. No. of Goats

3.1

Avg. No. of Pigs

3.6

Avg. No. of Chickens

3.3

Avg. No. of Horses

0.3

Avg. No. of Donkeys

0.8

TABLE XI MOJÓN, BOLIVIA, INFRASTRUCTURE AND ANIMALS, August 2000

Families (11)	Household Amenities					Animals						
	Latrine	Tap	Green-house	Thatched Roof	Tile Roof	Cattle	Sheep	Goats	Pigs	Chickens	Horses	Mules
Family 1		yes		yes		3	20	10	2	2		3
Family 2		yes		yes		3	20	10	3	3		2
Family 3		yes		yes			15		4	4		1
Family 4		yes		yes		2	30		2	4		2
Family 5		yes		yes			6		3	3		
Family 6		yes		yes				6	1	4		1
Family 7		yes		yes		4	8	8	3	1		2
Family 8		yes		yes		1	10	10	2			2
Family 9		yes		yes		5	30	10	1	1		1
Family 10		yes		yes		1	10			2		
Family 11		yes		yes								
Totals:		0	11	0	11	19	149	54	21	24		14
% of HH with Latrines		0%										
% of HH with taps		100%										
% of HH with Greenhouse			0%									
% of HH with Thatched Roofs				100%								
% of HH with Tile Roofs					0%							
Avg. No. of Cattle						1.7						
Avg. No. of Sheep							13.5					
Avg. No. of Goats								4.9				
Avg. No. of Pigs									1.9			
Avg. No. of Chickens										2.2		
Avg. No. of Horses											0	
Avg. No. of Mules												1.3

TABLE XII CHIMPA RODEO, BOLIVIA, CROPS PRODUCED, July 2000

Families (14)	Potatoes	Wheat	Oats	Barley	Tarwi	Corn	Oka	Izaño	Fava Bean	Papa Lisa	Quinoa	Peas	Valley Fruit	Chuño Production	Rotation	Years of Fallow
Family 1	yes		yes		yes	yes	yes	yes		yes	yes	yes		yes	4	1
Family 2	yes	yes	yes	yes	yes	yes	yes		yes	yes	yes	yes	yes	yes	3	3
Family 3	yes	yes	yes		yes	yes	yes				yes	yes		yes	4	3
Family 4	yes	yes	yes	yes	yes		yes		yes	yes		yes		yes	4	2
Family 5	yes	yes	yes		yes		yes		yes		yes			yes	3	2
Family 6	yes	yes	yes	yes	yes		yes		yes	yes				yes	3	2
Family 7	yes	yes	yes	yes	yes	yes	yes		yes	yes	yes			yes	3	2
Family 8	yes	yes	yes	yes	yes		yes							yes	4	0
Family 9	yes	yes	yes		yes		yes		yes					yes	5	0
Family 10	yes	yes	yes	yes	yes		yes			yes				yes	5	1
Family 11	yes		yes		yes		yes		yes		yes			yes	3	1
Family 12	yes	yes	yes		yes		yes	yes	yes	yes	yes			yes	3	3
Family 13	yes	yes	yes	yes	yes		yes		yes					yes	3	1
Family 14	yes	yes	yes	yes	yes		yes				yes			yes	4	2
Totals:	14	12	14	8	14	4	14	2	8	7	7	2	2	14		
% of family	100	86	100	57	100	29	100	14	57	50	50	14	14	100		

Avg. crops on rotation cycle, i.e., 3 crops = 3 years

3.6

Avg. years of fallow in relation to rotation cycle

1.6

TABLE XIII MOJÓN, BOLIVIA, CROPS PRODUCED, August 2000

Families (11)	Potatoes	Wheat	Oats	Barley	Tarwi	Corn	Oka	Izaño	Fava Bean	Papa Lisa	Quinoa	Peas	Valley Fruit	Chuño Production	Rotation	Years of Fallow
Family 1	yes	yes		yes	yes	yes	yes		yes	yes			yes	yes	5	5
Family 2	yes	yes	yes		yes	yes	yes			yes				yes	3	5
Family 3	yes	yes	yes	yes	yes	yes	yes		yes	yes			yes	yes	2	1
Family 4	yes	yes	yes	yes	yes	yes	yes		yes	yes			yes	yes	2	5
Family 5	yes	yes	yes		yes	yes	yes		yes			yes		yes	2	1
Family 6	yes	yes	yes			yes									2	1
Family 7	yes	yes	yes	yes	yes	yes	yes		yes	yes	yes	yes		yes	3	5
Family 8	yes	yes	yes			yes	yes		yes	yes		yes		yes	4	6
Family 9	yes	yes	yes	yes	yes	yes	yes		yes	yes				yes	5	1
Family 10	yes		yes		yes	yes	yes							yes	2	1
Family 11	yes	yes	yes	yes	yes	yes	yes		yes	yes		yes		yes	3	3
Total:	11	10	10	6	8	11	8	0	8	8	1	6	0	10		
% of family	100%	91%	91%	55%	73%	100%	73%		73%	73%	9%	55%		91%		

Avg. number of crops on rotation cycle (e.g., potatoes yr. 1; wheat yr. 2; tarwi year 3) 3.0

Avg. years of fallow 3.1

The most defining differences between the two communities relate to their respective application of the ecological complementarity strategies arguably at the core of community resilience on highland landscapes. Without exception, my Mojón informants practice *doble domicilio* or dual residence and have valley lands in production. Indeed, with migration to the valley lands for periods of an average of 5.2 months, my respondents practice *doble domicilio* generally with the entire family in tow (see Table VIII). Only a third of my respondents in Chimpa Rodeo own valley lands. Respondents there spend, on average, less than two months in valley regions in order to barter for valley products and to pasture their animals (see Table IX). When they are not needed, they lend their animals, particularly cattle, to valley farmers in need of their manure and the services of a *yunta*. In exchange, the host farmer agrees to monitor and pasture the animals. Greater preoccupation with school attendance in this ex-hacienda community also motivates mothers with school-age children to spend most of their time in Chimpa Rodeo.

Both communities practice *trueque*, *ayni* and *minka* on a regular basis. Both farming communities also use the *yunta* and a wooden plough to till their lands, although as noted in the opening pages of this chapter, if cash is available, a significant number of Chimpa Rodeo's farmers also rent one to three hours of tractor services to prepare the land for planting their crops. Both communities also practice rotational cropping and express a strong belief in the value of a healthy fallowing period for nutrient regeneration, although land-use pressures, particularly in Chimpa Rodeo, are now a significant limiting factor. But in Mojón most residents practice the *manta* land management system described above. To recap, within the *manta* system, harvested crops are not shared. Decisions about the agricultural production strategies are, with families well aware of their *manta* fields and most respecting the community's collective judgement on crop rotation and fallowing options. Mojón's *manta* fields are indeed a source of some pride. All have descriptive names, easily identifiable by local residents. During my first visit to Mojón, my local guide pointed to and rattled off the names of sixteen different *mantas* on the surrounding hillsides, much like a prolific father racing through the names of his offspring. Some hacienda landlords had, I was informed, borrowed the *manta* practice, wisely recognising its environmental benefits. But Chimpa

Rodeo's farmers did not follow the practice. While consultation within the extended family was evident, structurally at least, individual farm families make land-use decisions.

My purpose in raising the issue of the differing degrees of ecological complementarity practiced in Chimpa Rodeo and Mojón is not to offer definitive judgement about their respective resilience. Such assessment, if at all feasible given the complexity of such an analysis, would require a considerably longer sojourn within each community and the active participation of a broader cross-section of residents. My intent here is simply to raise questions again about the conventional western criteria used to assess well-being and sustainable livelihood. Murra's (1967:389) research into earlier Andean societies reveals that the "poor in the Andean world were those who grew up without the necessary kinsmen to support their claim for the resources of the ethnic group" (cited in Burchard 1976:428). An adequate land base upon which one could cultivate foods and husband animals was of chief importance. The *manta* system in operation within Mojón is a proactive adaptive management strategy to maintain a healthy land base. Yet as the next chapter demonstrates, the development actors that have come to lend a helping hand to the farmers of Mojón and Chimpa Rodeo have not treated this system, nor the other components of ecological complementarity practiced in these communities, as an essential foundation for their new development partnership. It is to a history of the nature of the external intervention in Chimpa Rodeo and Mojón that this study finally turns. Given Chimpa Rodeo's considerably longer experience with outside aid agencies, Chapter Six offers a far more detailed portrait of development assistance there.

CHAPTER SIX

EXTERNAL DEVELOPMENT INTERVENTION: THE MONOCROPPING OF PEOPLE, PLANTS AND KNOWLEDGE

We [the aid institutions] broke the equilibrium that existed before!
Employee with Bolivia's National Potato Seed Program (PROSEMPA)
1989-1994, August 2000.

"Mi papa me ha enseñado, mas que los tecnicos!" (My father taught
me [about potato diversity] more than the extension workers.
Chimpa Rodeo farmer, July 2000.

[K]nowing their views, opinions or experiences is not relevant anyhow.
In the end farmers are made identical to the image ascribed to them in
modern agricultural science: invisible men (van de Ploeg 1993:224)

External development agencies first established a significant presence among the indigenous farming communities within the regional municipality of Ravelo just over two decades ago. Their entry heralded the launching of Western-driven agricultural extension work and thus the arrival of extension agents eager to replace traditional farming practices, perceived to be inferior, with modern, more promising technologies for the rural poor. This chapter chronicles their development intervention programs, training approaches and influence that continue to inform the situation today. It begins with a very brief history of the arrival of aid in the region, providing context for a more substantive assessment of the programming and *capacity-building* orientations of three of the most influential non-governmental actors championing the cause of Ravelo's *campesinos*, a Bolivian regional NGO, Instituto Politecnico Tomas Katari (IPTK), an American-headquartered international NGO, Food for the Hungry International (FHI), and a multilateral NGO, The United Nations International Children's Fund (UNICEF). Woven tightly into this presentation are my reflections about how these NGO actors treated the natural resource management skills of their beneficiaries, particularly the

ecological complementarity and resilience principles at the centre of their indigenous knowledge systems. Residents' perceptions of conditions before and after outside development workers arrived in their communities and their reports on the decline of potato biodiversity since their grandfathers tilled the land are also carefully sewn into the narrative.

Chimpa Rodeo's farmers spoke of having interacted with external development agents since 1980. Recollections of dates and factors influencing their arrival were not precise. However, most farmers who remembered these early relationships recalled state-supported agricultural extension agents as the earliest development actors to call upon them. Accessible communities, like Chimpa Rodeo, were high on the list for assistance. One of the first institutions to work within the municipality of Ravelo, and subsequently Chimpa Rodeo, was the now defunct government-sponsored Instituto Boliviano Tecnico de Agropecuaria (IBTA), the Bolivian Technical Institute for Agriculture and Animal Husbandry. In 1980, IBTA sent staff to test and promote new technologies, featuring *improved* potato varieties and agrochemical inputs to enhance product size, health and yield (interview with former PROSEMPA employee May 5, 2000; confirmed by local resident, June 2000). "Green revolution" agriculture, first launched in the late 1940s by American academics concerned about Mexico's "antiquated" agriculture (Altieri 2002) finally had arrived, better late than never in the eyes of its promoters.

The introduction and training in the use of new varieties and technologies was steady but gradual. But when *El Niño* wrecked havoc on the Bolivian countryside in 1982-1983, external effort was intensified. Agronomists were turned into emergency workers charged with ensuring future potato harvests in the face of heavy crop loss. Communities in other parts of the country that were forced to eat their seed¹ pushed policy makers into a panic mode. With funding from the Inter-America Development Bank, unscreened, introduced potato varieties, initially from Argentina, flooded aid distribution networks and local seed markets, even though farmers in the municipality of

¹ Farmers in this region produce potatoes from their tuber root rather than from seed. However, they commonly use the word *semilla* or seed when referring to the planting of potato varieties. Thus, when the word seed is used in this chapter with reference to the planting of potatoes, it should be assumed that the "seed" is a tuber.

Ravelo had actually managed to conserve 30% of their own seed for the next year's planting season (Interview with ex-PROSEMPA worker, May 5, 2000)². Crisis management and national interests fed short-term thinking and across the board measures that overrode local consideration and context. A well-known agronomist with a residence in Ravelo studied this history during his five year tenure (1989-1994) as an extension worker with the National Potato Seed Program, PROSEMPA. Although sympathetic to the very troubling options facing decision-makers, he considers the aid community's interventions, launched through the *El Niño* emergency, to be at the root of farmers' problems today.

Imported with the donated introduced varieties were plant diseases previously unknown to the region. To treat these diseases, pesticides were required. Chemical fertilisers were also recommended for introduced varieties unaccustomed to the hard soils and still harsher climate of highland farms. Both required cash which, in turn, created a need for sufficiently high production volumes. Chemically induced yields and larger more uniform introduced varieties also put the less prolific, albeit more resistant, native potato varieties to shame, or so it would seem on the surface. Farmers raised on the principles of reciprocity were also comparatively open to the gifts of tuber seeds promoted as superior (see van der Ploeg 1993:223). More and more Ravelo farmers turned to a few introduced varieties with their addicted and arguably destructive relationship to substances harmful to the land.

With Dutch and Swiss help, new agencies emerged to help manage and shape this new potato monoculture. In 1983, in cooperation with IBTA, a seed distributor was formed, called la Unidad de Producción de Papa or SEPA. The introduction of new high yielding tubers and techniques also required external training and on-going advisory services. In 1989, IBTA, again with European assistance, launched PROSEMPA, and its research twin, PROINPA – Proyecto de Investigación de la Papa. These two quasi-governmental agencies emerged as important organizations for Ravelo's potato farmers,

² In their study of potato production in Bolivia, Dandler and Sage report that, unlike officials in Santa Cruz and Chuquisaca, conscientious planners in the department of Potosí had actually managed to keep imported varieties out of the seed markets (1985:135). This does not appear to have been the case in Chayanta. What these authors may have failed to consider was the stronger link Northern Potosí farmers had with markets and exchange mechanisms in neighbouring Chuquisaca. Indeed, several of the farmers in the municipality of Ravelo hold valley lands in Chuquisaca. In any case, my informants, including a worker with the National Potato Seed Program, insisted that Argentinean tubers arrived in Ravelo with a vengeance.

particularly with respect to the production of seed (tubers) for distribution and sale. In 1994, the government closed PROSEMPA, shifting the bulk of its work to PROINPA. Through seed cleaning services, PROINPA maintains a connection with Ravelo farmers today. However, they no longer operate a training program there.

El Niño did not appear to be the major catalyst for non-governmental intervention in Ravelo; but the “green revolution” it accelerated was adopted by the non-governmental organizations (NGOs) that arrived in its aftermath. This was the case for the NGO with the longest and strongest overall presence in Chimpa Rodeo and Mojón, a Bolivian organization called the Instituto Politecnico Tomas Katari (IPTK). IPTK was named after the 17th century Indigenous freedom fighter from the community of Macha, a six hour road trip from Ravelo. Given IPTK’s leading role in the externally funded development programming within these communities, in this chapter I pay comparatively detailed attention to its origins, character, contributions and approach. Moreover, IPTK’s agricultural training programs reflected models promoted by organizations like PROINPA and PROSEMPA and are therefore illustrative.

Instituto Politécnico Tomas Katari: Defending the *Proletariat* Farmer

Although entering the municipality of Ravelo in 1982 with a forestry program featuring the fast-growing but thirsty eucalyptus tree as well as imported pines, IPTK emerged as a really significant development player in this zone only at the end of the decade. IPTK had already sustained a major presence in the municipality’s home province of Chayanta, a region of Potosí long ignored by government authorities more interested in extracting mineral wealth than strengthening community. Founded in 1976 by activists from the Catholic Left – including a once exiled mestizo academic born and raised in the municipal headquarters of Ocurí, the village of Ocurí, about a two-hour journey from Ravelo – the organization was determined to assist Chayanta’s Quechua farmers take greater control of their lives. From a base in Ocurí, IPTK first tackled the abysmal health care services in the region, which, in 1976, were almost non-existent. Drawing a small amount of assistance from Europe, the fledgling IPTK began with a one-room “hospital” in the founder’s residence. In a little over two decades, Ocurí staff developed one of the best-equipped regional hospitals in the country. Infant mortality

rates that in 1976 within the rural areas of Potosí averaged 205 per thousand, averaged, in 1998, 110 per thousand within the most marginal municipalities of Potosí, an impressive 46% decline (NOVIB 1999:17)³. With additional support from European patrons, the organization also founded an affordable health care facility for Sucre's ever burgeoning peri-urban residents. Many of these migrants are *campesinos* from Northern Potosí. Programming for this population has since expanded to include a training institute designed to help migrants and their children adjust to urban society. Courses include legal rights education, literacy training, and dance and sports programming for children and youth. Most recently, the organization launched a radio station that targets a peri-urban audience.

An innovative national training program for *campesino* youth with leadership potential, Centro de Profesionalización Rural (CENPRUR) also emerged as a major IPTK initiative, grabbing international accolades in recent years. Villages from all over the country select their best and brightest to send to the Ocurí training centre perched on a hill overlooking the village and, since the year 2000, a millennium hillside sign that reads: *IPTK y Nuestro Pueblo* (IPTK and Our Village or People), 1976-2000. Once admitted, students participate in a three-year, government accredited program to become *medio tecnicos* – medium level technicians – in one of four fields: agriculture, nursing, civil engineering and public administration. In 1996, the UNDP rated this program to be one of the six most successful training programs of its nature in the country (NOVIB 1999:34).

Program graduates are certainly popular with development institutions in the region. I was repeatedly introduced to *medio-tecnico* graduates of CENPRUR who had joined the ranks of municipal government staff, including Ravelo's municipality, or the offices of Potosí's departmental government. International non-governmental agencies like UNICEF, the World Food Program, UNFPA, also recruited CENPRUR graduates, with IPTK itself hiring its share of their "medio-tecnicos". IPTK's practicum students from Sucre's largest public university, as well as former IPTK staff, were also scooped up by the development community on a regular basis. I found one working with CARE USA in

³ IPTK also runs a large primary health-care facility for migrants largely residing in the peri-urban sectors of Sucre. Their urban program also includes informal educational and sports programming for impoverished children and literacy and legal rights education for women.

Potosí and another with MEDA, the Mennonite Economic Development Associates, a bi-national Canadian-American agency that focuses on micro-credit and small business development. IPTK students and workers had clearly earned a solid reputation, extending IPTK's influence well beyond the agency's institutional borders.

Extension programs in all four of the province's regional municipalities: Ocurí, Colquechaca, Pocoata and Ravelo, initially covered primary and curative health care, literacy and gender equity education and agricultural production training. The government's increasing assumption of health-care programming and the arrival of UNICEF's literacy program for women in the region influenced a focus on agricultural production and the strengthening of the farmers' union movement (NOVIB 1999). Specific initiatives undertaken in Chimpa Rodeo included reforestation through community tree nurseries, the genetic improvement and health care of livestock, fodder production, the design and provision of appropriate technologies such as grain silos and low-cost greenhouses, irrigation systems, community road improvements and area-based farmer training on improved seed, animal husbandry, the benefits and use of chemical fertilizers, pesticides and insecticides and the institutional strengthening of the local *sindicato* or union (see IPTK 1999c).

Somewhat off the beaten track, Mojón's relationship with IPTK, and any other outside agents for that matter, is considerably shorter. IPTK staff headed to Mojón for the first time in 1996 to implement a potable water program, co-funded with PROSAVAR, a government organization specializing in water services. Exposure to Mojón's needs and residents' eagerness for more assistance inspired the establishment of a longer-term relationship. A forestry program was launched in 1996 not long after the completion of the potable water system, initially featuring community tree nurseries but ultimately shifting to family-run nurseries, because, I was told, individual families proved to be more attentive stewards than the community as a whole. This program also included training for agro-forestry promoters.

Like their PROINPA and PROSEMPA colleagues, program documents and my conversations with staff suggest that until recently IPTK's extension staff – university-trained agronomists as well as "medio-tecnicos" from CENPRUR – appear to have considered unsophisticated production practices, with their consequent low yields, to be

a primary explanation for the gruelling poverty amongst the farm families in their *target* communities. In a report that captured the findings of a donor-sponsored planning workshop amongst field staff, weaknesses listed under the category "Andean ecosystems" included: the low farm production yields, limited capacity to negotiate [prices] due to low levels of education, minifundismo, the limited application of technology, and the low levels of forage production for animal feed (IPTK 1997:4). IPTK's openly socialist ideology had contributed to an awareness of broader geo-political and economic forces marginalizing these farmers and thus of the need to organize *campesinos* to effect political change. This political identity and the agency's willingness to risk government sanctioning, indeed the personal safety of its leaders during the organization's early history, set IPTK apart from a majority of NGOs in the department. But as agronomists trained in a mechanistic approach to science, the extension staff appears to have accepted the instrumental, positivistic development discourse of the day (see Escobar 1995). The West's technical solutions were applied to multi-faceted and complex local situations, without a clear analysis of their tacit "deficit orientation" or their consequences.

Ironically, a good number of the Ravelo program staff were members of families from the Chayanta *campo* or countryside. Several others were just a generation away, urban sons of rural migrants. Still, at the institutional level, there did not appear to be any serious attention to indigenous governance structures and alternative knowledge systems, even though the studies of anthropologists like Tristan Platt (1978; 1982) were readily available on IPTK bookshelves. Indeed, Platt appears to have stayed in CENPRUR's residences in Ocuri at one point during his research sojourn in the area and prefaced an IPTK-sponsored study on the *ayllu* governance system in the region (Pacheco 1996).

Some components of the indigenous farming systems were appreciated and encouraged, crop rotation and fallowing systems being two especially welcomed strategies. Product and labour exchange mechanisms were also recognized as important to the local economy, although, if programming documents offer any indication, on a fairly superficial level. But the more fundamental system of the dual landholding and *doble domicilio* that these communities followed to varying degrees

seems to have been considered more of a nuisance than one worth promoting. Staff were respectful of farmer's production responsibilities and availability when scheduling training events. Still, participants repeated departure to valley lands was frustrating for staff anxious to have participants complete their training modules. The idea of programming within both highland and dispersed valley communities does not appear to have been given much thought. The complex logistics and expense of dual track programming likely quashed that option. And with influential institutions – from the Sucre-based Faculty of Agricultural Engineering in San Francisco Javier University to the powerful World Bank – consistently advancing the benefits of occidental education and technologies, Western ethnocentrism finally ruled the day.

Within area-wide and in-situ workshops, farmers were thus encouraged to intensify production and trained to adopt higher yield agricultural production systems. The logic, it would seem, was that if farmers were able to farm better – enhance the quality and quantity of their crops for market – they could earn the funds needed to purchase the goods their families so desperately lacked. They would in effect be able to consume their way out of poverty, a message with an irony these critics of capitalism seem not to have considered.

Improved productivity for income generation objectives required a shift, of course, to higher yield potato varieties. To survive on the hillsides and valleys of parched highlands, these introduced varieties would require a healthy dose of pesticides and chemical fertilizers that were in turn best suited for these particular varieties. Moreover, compared to the rather humble, pockmarked, local varieties, these foreign interlopers were handsome and comparatively unblemished. They grew quickly, were more uniform, considerably easier to peel and thus very attractive to urban consumers in a hurry. It didn't seem to matter terribly that the water content of these new potatoes was also considerably higher, decreasing their nutritional value, or that they would need a costly chemical solution to survive from year to year. Nor was the extra time and fuel needed to cook these less mealy potatoes taken seriously. Funds earned could take care of these inconveniences. Potato monoculture, featuring two then three types, took hold, especially on farms closest to transportation routes.

Fortunately, for consumption purposes, most families held on to at least a handful of their favourite traditional varieties, preferring the flavour and consistency of their native potatoes. The Jalq'a families of Chimpa Rodeo and Mojón were no exception. Inspired by their parent's proud husbandry of ancestral varieties, a few also committed to the conservation of more. Most families also refused to make a complete switch to purchased fertilizers, although the amounts of sheep manure used decreased significantly in the early years of this new agriculture. But the commercial potential of faster growing and higher yield potatoes – at least in the short term – were too attractive to pass up. As will be seen below, many farmers planted most of their potato fields with the introduced tubers, abandoning or neglecting a significant percentage of the varieties that their lands and hands had once nurtured. One of IPTK's extension workers with family in the municipal capital wistfully recounted this story about his own mother's response to the *Green Revolution* she was witnessing. Upon seeing the rapid growth and substantial yield of the introduced potato crop her son had planted when he had returned home from his university program, she abandoned the approximately twenty varieties in her native collection, sowing a single introduced variety instead.

This story is a useful reminder as well of the broader impact this new agriculture could have. Even communities outside the direct reach of the NGO's programming were not immune to this agricultural revolution. Neighbours observed the high yields of NGO training program graduates and sought out the new tubers. In short, the impact of this agricultural extension training could and did extend well beyond communities directly partnering with IPTK or other development agencies with a similar program. Mojón's indigenous farm families, for example, were not the beneficiaries of IPTK training or support until 1996. Yet, as will be seen below, they too abandoned traditional varieties to make room for the introduced tubers.

Analysis of the precarious nature of market conditions, particularly given this external push towards full-fledged petty commodity production, seems also to have been overlooked. Documents I reviewed paid no discernable attention to the fact that the commoditization of the local economy would contribute to a mass of small producers in competition with each other (Dandler and Sage 1985:130), let alone to the notion that this competition might weaken the reciprocal exchange at the heart of ecological

complementarity. Field staff I interviewed confessed to not having paid much attention to the market in the early days since they perceived their job to be that of technicians changed with the improving production and yield. Nor, in these formative years, did staff members appear to have given much thought to – nor encouraged farmers to consider – the relationship between product availability and unit price. Farmers able to access credit for this more expensive production entered a vicious cycle of needing more volume to make-up for lower unit prices to be able to pay back loans for agrochemicals essential to increase volume. The challenge shifted from the availability of surplus production to obtain a modest level of disposable income to one of trying to make ends meet. Canadian farmers will recognize this phenomenon all too well.

Since the additional land needed for greater volumes was scarce, fallowing periods were shortened. Overused fields and drug-addicted crops made the soils *muy cansado* or very tired. A few farmers, in fact, referred to the land as being *enfermo* – sick – or *muy quimicado* – burnt. Like similar programs across the globe, the impact of this uniform chemical approach to production on the conservation of local varieties, or on the contribution these farmers had been making to global biodiversity does not appear to have garnered much attention from those shaping policy and programming. A CENPRUR graduate employed as an agricultural extension worker with another institution put it this way: “these professionals don’t know about this diversity”. What he learned about diversity, he said, he learned through discussion among other *compañeros* (interview July 31, 2002). A veteran IPTK extension worker, himself from a rural community in Chayanta, recalled his deep concern about the growing depletion of this potato diversity (informal interview, July 2000). There likely were others with similar apprehension. But out of loyalty to the greater cause or perhaps concern for their jobs, extension workers appear to have kept quiet about this matter. Those in charge certainly did not address this issue in any substantive way (see IPTK 2000 and 1999a).

The intensive, chemically dependent monoculture of those formative years has since been challenged within the organization. Most staff members I met also criticized the *asistencialista* or charity-orientation of the late 1980s, early 1990s. Too many handouts and not enough local ownership of the development process had created uncomfortable dependencies. This growing awareness, coupled with external challenges

to reductionist development approaches, donor evaluations calling for enhanced community ownership of the change process, and the federal government's adoption of the *Ley de Participación Popular* or People's Participation Act, decentralizing municipal resources and decision-making, contributed to a restructuring of the programming approach in 1994 (conversation with a former field program coordinator, July 2002). In close cooperation with municipal authorities, a more integrated programming approach was introduced. Participating communities, like Chimpa Rodeo and eventually Mojón, were invited to play a more central role in planning and implementation. By 1996, consultation had become par for the course, as did the training of community promoters to motivate and monitor the application of the more *sophisticated* techniques they learned (conversation with the former Ravelo program field coordinator, Sucre, July 2000). From this period on, IPTK also became a major player in the municipality's strategic planning, serving as the facilitator for five-year and annual planning exercises.

Indigenous farmers have also been encouraged to reduce (although not abandon) agrochemical treatment on their potatoes, relying on their sheep manure once again. Initial recommendations of 7 bags or 644 KG of fertilizer per hectare were lowered to a recommended amount of a maximum of 5 bags or 460 KG per hectare (interview with former extension worker in Ravelo, July 6, 2002). Crop diversification is also promoted since it has become increasingly clear that commercial potato production is not proving to be viable for the majority (PAC 1999). Enhanced wheat production, including the diversification of varieties, is now being encouraged, given its affinity for Ravelo soils. Through the planting of species once indigenous to the area, such as the very nutritious, leguminous pearl lupin called *tarwi*, and some native tree species, the value of indigenous plant varieties and the importance of intercropping is at long last acknowledged.

This incipient recognition of the importance of biodiversity has not extended, however, to an embrace of its importance to potato production. Potato monoculture, now featuring four faster-growing, introduced varieties, has not been challenged in any significant way by program designers in Sucre. The vicious cycle and tight grip of production for a competitive market is clearly not easy to break.

Fortunately, there are workers on staff who have found a way to promote the value of the crop's plant genetic diversity diversity, at least amongst the farmers with enough land. Added to the events within the local *feria* or agricultural fair is a prize-winning competition for the greatest variety of potatoes. These potatoes can include introduced varieties; nevertheless, the principle of diversity is championed. Within the two *ferias* I attended, one in Ravelo and one in Qharaqhara, winners displayed 39 and 76 varieties respectively. These totals did not necessarily represent the actual number of varieties each had conserved, as suggested through my reference to my May 2000 conversation with Holle in Chapter Four. Morphological changes undoubtedly contributed to a perception of more genetic diversity than actually present. But the participating Indigenous farm families, twelve in Ravelo and ten in Qharaqhara, were extremely enthusiastic about this contest. They expressed a determination to produce more varieties every year by collecting additional varieties either from neighbouring communities, during agriculture fairs, or by bartering with *comuñeros* in the valley.

Prizes awarded in this competition also attract participants. The prizes highlight another paradox that the *tecnicos* promoting this event seem to have missed. In the Ravelo *Feria*, prizes included a shovel, a 92-kg bag of introduced potato seed (tubers), and agrochemicals with a large bright yellow applicator for insecticide spraying, the latter without the safety gloves or eyewear these farmers can ill afford. The surprise I expressed at the nature of the winnings for a competition celebrating biodiversity appears to have had some influence. Fertilizers and pesticides were absent from the prize list in the Qharaqhara *Feria* they sponsored the next month. Alas, introduced potato seeds (tubers) and the applicator were still handed to the winners, again without protective gear.

Some additional commentary about the use of these chemicals on Ravelo farmlands should be a part of the public record. Next to IPTK's information booth at the *Feria de Ravelo* was a large display area promoting the products of the agrochemical giant, Novartus. Prominently displayed at their booth was a big sign promoting the company's *Ridomil™* product, a systemic fungicide for use on selected crops to control diseases caused by members of the phycomycete family of fungi (Syngenta 2003:1). Notably absent from their display table were user-friendly literature or diagramming on the safety

precautions required when spraying this chemical. On its web-cite, Syngenta (2003:1), the company that has absorbed part of Novartus' agrochemical division since the 2000 Ravelo Feria, warns workers not to enter the treated areas during the restricted-entry interval of 48 hours. They also advise handlers to wear long-sleeved shirts and long pants, shoes and socks, chemical resistant gloves made of waterproof material such as polyethylene or polyvinyl chloride, and protective eyewear.

During my exchanges with farmers, the use of *Ridomil*™ was not reported, possibly because it was just being advertised in the area. But this dangerous fungicide was being promoted in a region where few own shoes, let alone socks, fences are rare, the cost of protective gear is prohibitive and, if the application of fertilizers during the planting of potato tubers is any indication, few are aware of the consequences of unprotected application. Although considerably less toxic than an insecticide, the grainy powder applied on potato tubers – a Japanese fertilizer that farmers referred to as “18-40-60” – was sprinkled onto crops with the bare hands of farmers in *ojotas* or sandals. When the men, women or children applying the chemicals stopped for lunch, the hands they used as eating utensils were not rinsed. At best, they were wiped on an apron or pants already dusted with particles of the fertilizer.

Tamaron™, a Bayer product distributed through Chile, is the soluble insecticide of choice for potatoes in Chimpa Rodeo and Mojón. Bayer's website notes that it is “sumamente peligroso” or very dangerous (Bayer 2003a:1). It is harmful for humans when it comes into direct contact with their skin or eyes, if inhaled, or if “used regularly over a long period”, website writers warn. It is also dangerous for the environment, animals and fish (Bayer 2003a:1). Again, I did not observe protective wear among the farmers using this product. Nor did I come across any public education materials warning of the hazards of application and the need for careful storage. As for the warnings on product labels, few would have the literacy skills needed to decipher their message.

The continued purchase among 44% of the farm families in my study of an insecticide called *Folidol*™ is particularly disturbing. Extension workers reported that this insecticide had been banned because of its extreme toxicity. Also a Bayer product, this time distributed out of Brazil (Bayer 2003b), it is cheap and, contrary to the official

record, readily available. NGO workers stressed that they regularly warned farmers about the dangers of this product. I witnessed these warnings myself. But their concern seemed to stop short of organized legal action to prohibit its sales or an aggressive educational campaign to stop its purchase. I heard one particularly sad story about how a young girl from Mojón poured some *Folidol™* into her uncle's drink as a joke, thinking that it would simply make the drink bitter. She was clearly unaware that within minutes, he would, and of course did, die. Bayer's website on *Folidol™*, incidentally, opens with the words "**DANGEROUS POISON**" in large font and bold print. Under this caption is the additional warning: "**KEEP OUT OF REACH OF CHILDREN**" (Bayer 2003). If Bayer's sales to farmers in need of the cheapest product on the market is any indication, the company's concern for safety appears not to extend much beyond concern about the regulations of Western governments with enforcement capacity.

The amount of insecticide used during each planting season was comparatively modest, I was told, rationale perhaps for the low level of attention to safety issues. But the farmers themselves were beginning to have their suspicions about the impact of even modest levels of application. When I discussed the use of agrochemicals with a community leader from Chimpa Rodeo, he remarked, "the women of my wife's generation are not as strong and healthy as the women of my mother's generation. I think that the introduction of agrochemicals into our fields has something to do with it" (paraphrased from a conversation in July 2000).

During this period of IPTK's institutional reformation producer associations were also encouraged. Based on the principles of group collateral, it was hoped that these community credit groups would minimize individual risk and facilitate access to credit for costly inputs. Yet another paradox overshadowed this program component. The lending institution that IPTK partnered with, the Asociación Nacional Ecuménica de Desarrollo (ANED) – an ecumenical social credit institution headquartered in the Netherlands and supported through ethical investments from Northern donors – tied their credit support for this region exclusively to the purchase of the artificial inputs. Loans, in short, were specifically targeted for the purchase of a chemical fix. Both ANETH and IPTK staff I spoke with about this requirement were uncomfortable with this incongruity. But these kinds of policies were directives from the top, they responded, beyond their control.

Rocking the boat, they worried, could put their jobs at risk. They too seemed trapped in a system they were not entirely comfortable with. Rahman's (1999b:179) discussion of the "public transcript" versus the "hidden transcript" at work with the credit system he investigated is also instructive in this instance. The "public transcript" workers advanced championed ethical credit for social justice. They knew that, in practice, the system was flawed. But their normative behaviour was to follow the instructions of their superiors. In a national context of socio-economic and political insecurity, disclosure of their "hidden transcripts" – the *real story* shared with workers in a similar bind, often over a few cervezas or beer – was simply too risky.

This tension over the incongruity of assistance promoting chemical addiction reflects a still more fundamental dilemma for these fieldworkers: the conflict between the operations of a micro-credit lending program dependent on loan recovery for its viability (hence the link to chemicals for higher yielding, presumably *less risky* production) and the workings of a livelihood system dependent on sound environmental management for its resilience. In his study of social credit, Rahman (1999b:189) refers to the growing incompatibility between social development objectives and financial institutional sustainability. Grameen Bank workers were torn between "compassion and capitalism". The IPTK field workers in my study were torn between the call to help build a *municipio productivo* (IPTK 2000) and attention to ecologically friendly agriculture. If they didn't advance and subsequently recover loans, the credit program would fold. No longer able to access production capital, farmers would have trouble competing in a market requiring competitive production volumes. Both the farmers and the workers would fail to meet the stated objectives of the development assistance program. If the *tecnicos* were successful with their facilitation of credit groups, able to establish solid loan recovery rates, there would be even more credit for practices inherently harmful to the soil fertility needed for sustainable production. They were *damned if they did and damned if they didn't*⁴.

⁴ Within industrialized farming systems, small producers are generally on the front lines of this *Catch 22* situation, particularly those husbanding crops highly vulnerable to disease like potatoes. A Canadian Broadcasting Corporation (CBC) radio report on PEI farmers in the spring of 2001 (precise date not recorded) noted that unless farmers sprayed their potato crops with agrochemicals, they were ineligible for crop insurance.

While moving towards more sustainable practice, IPTK's programming during this new phase of work continued to feed chemical dependency, with extension workers and farmers unable to shift from a logic that emphasized the importance of high yields. Market proximity and demand for the introduced product from nearby Sucre would have made this habit especially hard to break. A primary objective noted in the Agency's 1996-1999 three year plan for Ravelo attests to this continuing, albeit contradictory, orientation:

To increase the agricultural yields of farm production units among the subsistence-farmer strata of Ravelo's puna baja, conserving and enhancing at the same time the natural resources of these farms. (IPTK 1999d:49)

True to their socialist roots, IPTK trainers and extension workers were also asked to promote a *conciencia critica* or critical consciousness among participants. Staff consistently informed farmers about their rights and the importance of union solidarity to confront corrupt and incompetent local, regional and national governance. IPTK's field workers, some of whom were from Chayanta and had trained in CENPRUR, were also encouraged to become active within the political arena, even to consider running for municipal office themselves. They were also asked to seek out and train young Indigenous leaders with political aspirations and potential. This political work attracted its share of critics, including NGOs that considered political campaign organizing to be in conflict with an NGO's non-partisan mission of service. IPTK staff elected to municipal councils would be called to make decisions that might place them in a conflict of interest with their salaried organizational home. There was, in fact, evidence of discontent with this dual identity. In one of the municipalities I visited, complaints about the IPTK staff presence on the municipal council had surfaced in a very damning letter from a group of angry citizens.

IPTK's most troublesome critic, at least during its first decade of existence, was a Bolivian government anxious to maintain control over a left-wing group bent on organizing peasant farmers. Early on in the organization's history, the Ocuri hospital and its offices were raided. Its occupants were held for a day, roughed up, issued threats, and told in no uncertain terms that they would be watched very closely (interview with an IPTK field staff member, November 2000). IPTK obviously outlived the intimidation of

that particular regime. But longevity concerns, including worries that donors might not want to risk support for an organization on the government's blacklist, appears to have taken considerable sting out of their political critique. The messages in IPTK's weekly journal, *Prensa Libre*, I was told, have been toned down significantly since the early days of the publication. The year 2000 editions that I subscribed to were especially moderate in tone, more like a popular community digest rather than the radical voice of the peasant farmer. The inclusion of a provocatively dressed young woman on the front cover to enhance sales signals this subdued political message and allure, not to mention a *machismo* incongruous with the gender equity objectives in its strategic plan (IPTK 2000).

Interest in electoral victory within municipal, departmental and national elections also appears to have quietened the rhetoric and shifted the organization's ideological positioning. The organization's more moderate strategy has indeed paid dividends. For its size, the organization's political arm, Movimiento Boliviano de Liberación (MBL), Bolivian Liberation Movement, has had its share of victories, including campaign victories for staff or ex-staff. During the Movimiento Nacional Revolucionario (MNR) administration prior to Hugo Banzer's final administration, the founder and Board president was elected to the national congress. Staff members also insist that the well-accepted Popular Participation Act of 1994 was the brainchild of the MBL. During my sojourn in Sucre in the year 2000, IPTK's former Executive Director was mayor of the city. CENPRUR graduates and former IPTK employees were also elected mayors of the regional municipality of Ravelo and Ocurí. During June 2002 elections, MBL's alliance with the MNR (an IPTK leadership preference that caused a split in the MBL and problems among their supporters in Ravelo) contributed to several victories, including the election of IPTK's president and founder to the country's Senate. The list of electoral successes is still more extensive but need not be elaborated here.

Of importance to this discussion about IPTK's political identity is not so much the numbers they have sent to government, but what I perceive to be a critical factor in the organization's reluctance to acknowledge, in a more substantive way, the Indigenous character of the Chayanta residents they support. IPTK's need for a uniform and unified movement to back its political ambitions explains, in my view, their preference for the

homogenized identity of peasant farmer. In a context of often corrupt, neo-liberal governance at the mercy of international financial institutions like the International Monetary Fund and the World Bank, they appear to have decided that the political momentum needed for social change requires participation under a single banner. The organizing of farmers is infinitely more straightforward than the organizing of diverse ethnic groups with alternative governance structures and socio-economic systems that do not quite fit the Western vision of a new social order. The concept of a monolithic farming culture conveniently swallows up the notion of diversity and Indigenous distinctiveness. Solidarity for IPTK is a solidarity of their *hermanos campesinos*, a possibly pragmatic but nevertheless assimilationist orientation that has contributed to their neglect of the Indigenous systems profiled within the considerable research available to them, including the very detailed work of Tristan Platt (1978; 1982). For this purpose, IPTK's leaders seemed willing to ignore the work of their own research team, including an excellent study (IPTK 1999) entitled: "The Market as Complement: Exchange in the Province of Chayanta, Northern Potosí". This excerpt from the study is worth repeating here:

The limited knowledge among the institutions about the subsistence strategies of the families in the communities within the province of Chayanta ... results in generalized proposals that don't consider subsistence strategies and their connection with the market as part of a logic of self-sufficiency, consumption diversity, and sustainable production. (Arcienega and Garcia 1999:49)

As these researchers suggest, IPTK was not alone in its neglect of the resilience strategies of the people they set out to assist. Anthropologist Sylvia Rivera's 1992 examination of the relationship between the *ayllu* system and development projects in Northern Potosí suggests that, while extension workers were generally familiar with the practice of ecological complementarity, they seemed to think that it was largely a practice from prehispanic times. They dismissed its importance as a fundamental component of the ethnic economy in contemporary times, despite an abundant contemporary bibliography on the theme (Rivera 1992:153). Rivera (1992:18) concluded with this biting critique of the generalized reluctance in Potosí to work with *ayllus*, organizations that she considered the "natural" institutions:

I was essentially always given the same responses, rationalizations that I heard voiced and repeated by many politicians and NGOs in Bolivia – that the *ayllu* and its authorities were corrupt and manipulated by the State; that the *ayllu* and its authorities don't know anything about projects to modernize their economy; that the *ayllu* and its authorities don't understand the political and economic dynamics of contemporary Bolivia; that the *ayllu* and its authorities are not democratic; that the *ayllu* and its authorities are only interested in festival parties and chicha; that the *ayllu* and its authorities are incapable of forming an alliance with the mining federations; and finally, that the *ayllu* and its authorities are folkloric relics of a dead civilization. These responses are based, in part, in ignorance and in part in the paternalism and racism that defines the urban political and Creole class in Andean countries.

A homogenized concept of farmer was not unique to IPTK, grounded as it was in the language and policy of the 1952/53 *Reforma Agraria*. This legislation, according to Platt (1982:19), "reflected the *mestizo*'s self-proclaimed emergence as the dominant *raza* – the common denominator between the *indio* and the *capa criola* landowners – able to spearhead the development of a strong modern *patria*!" To pave the way for smallholder land distribution favourable to their growing power and control, writers of this legislation therefore ignored Indigenous calls for territorial title (Urioste 1988), promoting the concept of *campesino* versus *Indio*. Platt's stinging assessment of their underlying agenda is right on the mark:

These developments have contributed to an image of the "mestizo" small producer as the vanguard of the rural property regime. From this perspective, the divvying up of small properties amongst *indios* can be conceptualized not simply as a simple agrarian policy that sought to adopt a simple mercantile system but rather, and no less important, as an ethnic offensive that sought the assimilation of the old "castes" into a mestizo universe. (Platt 1982:19)

IPTK's approach to *campesinos* is thus consistent with the predominant treatment of indigenous peoples throughout the country as well as in Northern Potosí. But to return to Rivera's (1992:18) explanation for the generalized reluctance in Potosí to work with *ayllus*, including "ignorance, paternalism and racism", the case with IPTK is not quite so straightforward. Having worked in the most isolated communities with traditions and land-management and governance systems found in few other Bolivian departments, IPTK can certainly not plead ignorance of the indigenous systems that have kept these

communities alive and once vibrant. The paternalism of Western thinking is undoubtedly a more important factor. Racism as a motivating force, on the other hand, seems too quick an explanation for IPTK's positioning, at least amongst the majority of the field staff I came to know in Ravelo. Committed, and hard-working, many with significant amounts of Indigenous blood flowing through their veins, staff spend long hours alongside indigenous program participants, learning as well as instructing. They plant crops and trees beside their *Jalq'a compañeros*, at times with blistered hands, and spend long nights in planning and training meetings to avoid having to ask participants to spare yet another day from their farming. I saw one extension worker bite the testicles off a ram during an in-situ workshop to demonstrate a comparatively painless way to castrate animals in the absence of expensive sedatives and sterilized tools. They return to staff quarters that were not that much better than those of the adobe villages they visit, pit latrine⁵ and all. While I encountered one exception, staff members consistently expressed genuine respect and concern for the indigenous farmers they were hoping to assist.

From what I was able to gather, executive staff had also all lived or worked this way for extended periods at one time. One veteran executive did complain that the collective ideology of Indigenous peoples seemed static, curtailing the questioning of one's conditions and situation. He seemed to be justifying the agency's campaign to mobilize a more *forward-thinking farmer*. A *mestizo* sense of superiority likely also explains his remark. But in general the organization's reluctance to consider the Indigenous character of their program communities in more than a superficial way appeared to me to be a strategic choice, linked tightly to their political ambitions and socialist goals. The morning after very impassioned May Day celebrations in Ocuri that drew the entire community in a torch-lit march through the village, a staff member revealed with unusual candour and passion what I came to see as IPTK's broader institutional perspective. "Bolivia's inability to move beyond its status as a living museum of exotic peoples", he shouted, was keeping the country and its people from the unity needed to challenge the injustice of capital" (paraphrased from comments made during an informal interview, May 2, 2000). A lawyer with an IPTK program in a municipality in struggle over the *ayllu*

⁵ The pit latrines were replaced with flush toilets in the early months of 2002.

versus union governance model, he was quickly angered by my comments on the importance of *interculturalidad*.

This lawyer's very open hostility towards Indigenous rights' movements he considered divisive was not echoed by other staff I met, especially not those working with the people of Chimpa Rodeo and Mojón. Time and time again I sensed that individual field staff were eager to attempt alternative programming but, as with the credit dilemma, felt caught in a system over which they had little control. One insightful young extension worker noted that "production was sustainable before because of the migration to the valleys" (informal interview, July 2000). It is also important to note that within the new 1996-1999 program phase and into the new phase begun in the year 2000, "culture" emerged as a more significant operational concept. Programming included the sponsorship of cultural events, featuring traditional costumes, dance, song and food. Materials recognizing cultural traditions were also produced, such as an annual Almanac wall calendar charting historical events and local festivals of importance to the lives of Chayanta's Indigenous peoples. Native plant varieties and sub-species diversity, as mentioned, were also beginning to be promoted in the agricultural fairs the agency sponsored. But this attention to culture fell short of a robust appreciation and integration of alternative worldviews and knowledge systems. The etic of culture – external, material manifestations of identity – were honoured (interview with a former Field Program Coordinator, July 2000). The emic or cognitive components of culture, the alternative cosmovision and perspectives on knowledge and the nature of the universe, were obscured, except, as noted, within some very solid research documents that, like the study on Indigenous market and exchange mechanisms, collected dust on crowded bookshelves.

Without a whole-hearted acknowledgement of the cognitive differences between Western and Indigenous peoples' learning styles and knowledge systems, or of the political biases shaping these perspectives, occidental approaches to *capacity-building* are bound to rule the day. As anthropologist Jane Collins (1986:654) so aptly put it about intervention approaches she observed in other Andean regions, "science not only mirrors the society from which it emerges, but recreates those mirrored images in other societies to which it turns its attention". Despite genuine respect for the skills and

stamina of the farmers with whom they interacted, IPTK's agronomists went to the field with the myopic glasses of Western plant scientists and organizers of the working *man*, lending support to a process the iconoclastic development thinker, Ivan Illich (1971) would call "a tooling of man to fit in". The ensuing assessment of one of the more recent community-based planning exercises in Chimpa Rodeo and Mojón speaks to this importation of the occidental way and point of view.

As part of an agency-wide community planning exercise called *Diagnostico Rural Participativo (DRP)*, extension workers headed to Chimpa Rodeo and Mojón with flip chart paper, markers and the latest tool kit of rural and rapid appraisal (RRA) methodology designed by Western experts. Trainers hoped to offer participants a stronger voice in the design of their community's development program and thus enhance the effectiveness of IPTK's program. During a three day workshop, participants learned to draw informative maps of their community, to chart the rhythm of their agricultural season, to document migration patterns, to sketch purchasing flows, and to outline the timing of local festivals. Memory based information was, for the first time, captured on paper. The information solicited was very useful, particularly to proposal writers in Sucre. However, the products were descriptive and extractive rather than analytical and empowering, addressing immediate needs rather than the community's strategic interests (see Appendix Four). Not surprisingly, participants proposed improved infrastructure and farming techniques as solutions to their problems, a conclusion that reinforced, albeit unintentionally, the notion that the farmers themselves were primarily responsible for their poverty and for its defeat. Staff bemoaned the community's apparent unwillingness to move beyond a discussion of basic needs (informal interview, July 2000). But documentation of this event, coupled with comments made to me since, suggest that they had not considered (or perhaps were unaware of) methods that would encourage analysis beyond practical matters. Diagrams, charts and tables were not used as discussion starters, and there were no exercises designed to analyse external culprits, not the least of which was an outside push towards a market with unfair terms of trade. Nor, until my PRA workshop two years later, did either a verbal or written report on these workshops make their way back to the community.

The methodology used with people accustomed to an oral transmission of knowledge were likewise biased toward Western perspective, planning objectives and linear thinking. Data gathering, including diagrams and matrices that flowed from left to right, was organized sequentially. The exercise required reading, writing and a solid measure of the Spanish language skills that favoured a tiny minority of literate participants, usually IPTK-trained union leaders who were somewhat more familiar with Western logic and process. To IPTK's credit, Quechua was the predominant language of instruction and discussion (not always the case within the NGO community), with Spanish the language that flowed from pens and markers. But writing and reading tasks for even the literate participants were not completed with ease. *Tecnicos* in the community were counted upon to draw up and interpret project documents.

The *tecnicos* facilitating this process spoke enthusiastically about the more inclusive process of the DRP planning system. If the results were extractive, their intent was certainly not. They too were products of an occidental system built on linear logic. As university-educated scientists with a technical orientation, they were also not very familiar with Indigenous learning styles. Nor did donor-driven program expectations, timelines, and the predetermined programming results requested in their program submissions make attention to process more characteristic of Indigenous learning systems very realistic. Additional examination of this last issue is worthwhile.

Sponsorship from international organizations generally requires the use of occidental planning systems that are frequently diametrically different from Indigenous ways. Proposals and reports, for example, are built around the international development community's very linear logical framework analysis (LFA) and/or results-based management (RBM) methodology. To obtain the money to proceed, there is a need, from the start, for indicators about inputs, activities, outputs, outcomes and impact that can be plotted onto pages of boxes, tables, and charts, a process I like to call "paint by number" development. These methods are with rare exceptions sacrosanct, needed for the donor's assessment of the merits of the program and reinforced within the training workshops and evaluations that they sponsor. In theory the information should be gathered through participatory methodologies with targeted beneficiaries playing a key role in data collection. In practice, the process requires time and experience local

participants rarely have. Less experienced NGOs are often forced to hire expensive external consultants to assist with these complex planning exercises or to *polish* the presentation of the information. Referencing Pottier (1993), Gardiner and Lewis (1996:44) have this additional observation:

...the idea that economic and social change can be framed within projects is central to the top-down, controlling urge of development activity. When questions are asked within the central conceptual framework of a project, it is all too easy to submit to the idea of 'social engineering' and to forget that most 'complications' involve real people in real-life situations around which straightforward decision-making boundaries cannot be drawn.

My review of IPTK's project documentation suggested that IPTK's very competent project management staff in Sucre had mastered the LFA approach extremely well. Submissions and reports followed donor guidelines very carefully. Evaluators the donors sent to assess the agency's work also reinforced IPTK's application of community participation methodology. Shortly after the completion of the community *DRPs* in Chimpá Rodeo and Mojón, a donor-sponsored evaluation praised the Ravelo team in particular for its effective *DRP* exercise, noting:

While there are limitations within the project...we consider that there are a group of successful elements that can and should be systematized and then shared. [These include] the training methodology for farmers and the role that the trained agricultural promoters play [in their communities]; the participatory methodology used in the design of *DRPs* through which the farming population are able to analyze their socio-economic situation, prioritise their needs and build community plans; the strengthening of the community's ability to become interlocutors in order to insert their community plan into the municipal POA [annual plan].

Considered within a Western development framework, the Ravelo team's training work looked good indeed. When it came to occidental farming techniques, their community promoters were well equipped to advocate for the Western formulas they had learned. IPTK's Ravelo team took to heart the participatory training workshops organizations like the United Nation's Food and Agricultural organization (FAO) and their European patrons had sponsored. Documents reviewed and conversations with extension workers revealed, however, that these patrons were also largely content with

the monolithic concept of farmer. They too failed to look beneath the surface at the approach and application of the *participatory* tools they were so keen to insist upon. No one seemed to be asking, "do these methodologies used to fill in the linear matrices and charts on flip-chart papered walls really work for Indigenous participants with a different cosmovision and minimal skills in the written language?" It seems almost as if they naively believed that the offer of participation alone would take care of the enormous cultural and power imbalances. A report of a national workshop on the environment and sustainable development in Cochabamba in 1994, sponsored by one of IPTK's major donors, does little to suggest otherwise.

In the opening remarks to the plenary by the representative of the European funder, the speaker began with a question about why, after so many years of human and financial investment, conditions in many rural communities remained as desperate, or perhaps more desperate, than they were before all the investment. Paraphrasing another development administrator, the speaker asked: "if we had put all the development dollars of cooperation in a bank in the USA and distributed the interest to the beneficiaries of our policies and programs, would that not have been better?" (CIPCVA 1994:1/2). A clearly rhetorical question, the speaker went on to hypothesize that at least part of the problem lay in the fact that the NGO community had not grasped sufficiently well the complexity of the development challenge. A more systematic approach was required. Nor were they working in a sufficiently concerted, strategic way, but were rather confusing beneficiaries with their divergent strategies. In sum, he suggested, an improved, more integrated and cooperative approach was needed, one with a gender focus and based on farmer participation (CIPCVA 1994:1/2).

Having worked in the development field since 1984, I can say with confidence and with all due respect that, by 1994, the keynote speaker's message was hardly new. Most participants in the room would have been able to recite this development recipe by heart: cooperative, integrated, systematic, gender-based and participatory. If the workshop report offers a fair overview of the proceedings and discussion, with the exception of a couple of presentations acknowledging (but not focussing on) the importance of Indigenous knowledge to the *campesino* economy, and a general recommendation to incorporate cultural and biodiversity considerations into strategies and work plans, the

analysis of the problem thereafter did not reach much deeper. IPTK's personnel operated as members of a broader development community reluctant to entertain the possibility that for just and sustainable work among Indigenous farmers, it might not simply be a matter of improving the poor performance of tried and tired systems. Nor would consulting more with participants to ensure a better reading of their needs and desires do the trick.

The professional community IPTK operated within did not appear ready to negotiate an agenda that might radically change the rules of the game as well as the power structures that define them. They appeared unprepared to investigate whether their limited intercultural understanding and skills might explain investments that were not achieving the expected dividends. Interestingly, the aforementioned external evaluation report completed for the sponsoring organization three years after the Cochabamba workshop referred exclusively to *campesinos*. Within Chayanta, evaluators noted with confidence, "the *natural* organizations of these communities are the farmers' union". In sum, IPTK was dependent for its financial resources upon external organizations that appeared to accept the dominant development discourse of the day, however couched in participatory language.

A municipal planning session in Ravelo during October of 2002, part of the annual review and update of the five year *Plan de Desarrollo Municipal (PDM)* or Municipal Development Plan, offers another all too typical example of *participation* that fails to consider the underlying issue of who defines participation, what meaningful participation is or, for that matter, the kinds of knowledge valuable to the development process. IPTK staff members were asked to facilitate and coordinate this joint departmental and municipal initiative. In this case, I had the opportunity to attend and participate in the opening set of workshops.

Following the national guidelines for participatory development planning, IPTK and Municipal facilitators had made every effort to gather a broad cross-section of representatives from the municipality to ensure as participatory a process as possible. Communities were asked to send their union *dirigente*, a female representative and someone specifically delegated as the community researcher. Most communities sent two representatives, mostly but not entirely male. My review of the list of 150 registered

participants revealed that 25% of those present registered with their thumbprint. The signature of many others was shaky at best. *Boletas* or questionnaires seeking demographic and production data were reviewed (see Appendix Five), with additional facilitators like me asked to animate smaller working groups for those having serious difficulties reading and understanding the instructions.

Questionnaires returned to organizers were extremely disappointing. Many were incomplete, with percentages often adding up to more than 100%. Literacy levels were simply not sufficiently strong for the use of this so-called *participatory* instrument. This was certainly the case with the questionnaires completed in Chimpa Rodeo and Mojón. In one case, the individual figures posted for categories describing the use and distribution of a potato harvest reported to be 1,150 kilos per hectare, totalled a yield of 1,334 kilos of potatoes per hectare. In another, participants placed *si* – yes – in these boxes rather than figures. When field staff could, they returned to the field to try to verify or correct the figures. But there were too few field staff to complete in-situ revisions within the time allotted for this exercise, so data-crunchers in Sucre were forced to use their best guess more often than not.

There were other plenary and small group sessions during this planning exercise that openly debated matters like a community's vision or that of the regional municipality. But again the products of these exercises, as with the *DRP* community-based ones, were a long list of basic needs that organizers had hoped to move beyond. So while planning entirely from above was at long last abandoned, IPTK's trainers, like many of their colleagues in this region and elsewhere in the country, continued to work with a toolbox of methods designed for literate Western planners. As with the *DRP* exercises in Chimpa Rodeo and Mojón, the findings ended up being more descriptive than analytical in their orientation.

IPTK's newest program component for its rural *campesinos* is a training program on the land rights of Indigenous communities, particularly those related to INRA, Bolivia's latest land reform act that clarifies land claim processes, allows for territorial claims, and within these territories, recognizes the legality of the traditional land-use practices and customs of each ethnic group, such as their internal governance and decision-making mechanisms (Albó 2000:28). The idea is to train "barefoot" legal promoters to carry the

message to their communities. For a majority unable to read and write, such service appears to be greatly appreciated, if participants' willingness to spend long, bone-chilling nights in crowded, dimly lit rooms is any indication. However, my review of the products of two of these IPTK-facilitated workshops again left me disappointed, though hardly surprised, with the continued application of Western process and perspective.

Posted on the rough adobe walls of the meeting rooms I observed were sheet upon sheet of descriptive information accessible to the few literate, Spanish-speaking participants present. These participants would of course report the information to their community afterwards. However, the information would be second hand and sometimes delivered by those who had not necessarily grasped its full meaning. For example, the morning after one session that ended at 4:00 a.m., I observed two teenage girls taking notes from the flip-chart paper still hanging on the walls. They were sent by their community, I was told, to transcribe the notes on the flip-chart papers since their representatives present the night before had not been able to read the notes.

Strategies that might make this legislation work in the favour of their Indigenous beneficiaries were also vague – never clearly articulated. Cultural identity issues continued to be obscured, particularly the messy politics of territorial, *ayllu*-based claims and governance options. It seems worth repeating here again that when Indigenous identity is obscured, so too are the skills and knowledge linked to that identity (McGovern 1999; Nazarea 1998 and 1999). This phenomenon is not uncommon. In her treatise on education, modern development and Indigenous knowledge, Seana McGovern (1999:19) posits, "modern social science procedures are mechanisms for understanding aspects of reality by focussing attention on particular aspects of reality that, in the process, marginalize or exclude other expressions of that reality". Within Ravelo, and more particularly Chimpa Rodeo and Mojón, resilience strategies like the ecological complementarity and the biodiversity conservation girding subsistence livelihoods, were downplayed in favour of an industrial-oriented reality ultimately of benefit to a nation's politically powerful citizens (Hanson 1985; Hunn 1999).

In its effort to help *campesinos* find their voice in a world controlled by a capitalist elite, IPTK favours a political path that requires a united movement with a common agenda and perspective. To the organization's credit the leadership is committed to work in Chayanta for the long haul. Unlike the international NGO community, they do not have

the option to come and go as they please. The agency is also working within the most marginalized areas within a national governance context that has considerable internal weaknesses and tremendous external pressures to promote a neoliberal economic agenda. The determination to effect change in this enormously challenging arena is impressive and should be celebrated. But Western solutions and a struggle for power predicated on Western terms clearly has not reaped the benefits envisioned for the organization's indigenous participants.

As Tables XIV and XV suggest, in the year 2000, estimates and reporting errors notwithstanding, and if we consider only the difference between direct input costs, like fertilizer, pesticides, manure and in the case of Chimpa Rodeo, tractor services, the average family among my fourteen Chimpa Rodeo respondents earned approximately \$265 CAD from their backbreaking labour. This is heartbreaking testimony to their terribly weak bargaining power in the marketplace. Mojón families in the survey lost \$35 CAD in the process, with 45% of those surveyed noting that low market prices had discouraged them from even bothering to sell their surpluses.

Families of both communities unable to barter enough produce or labour to meet all their needs, once again turned to temporary labour migration. They were forced to be, as one IPTK extension worker from another Ravelo community remarked, "maltreated and to work like slaves", an experience he had himself suffered when a motorcycle injury forced him to leave his professional employment for an extended period (interview July 6, 2000). Farmers with the means to leverage loans from the ANED/IPTK credit scheme for agrochemical purchases fell into debt. The previous year had not have been much better either. A 1999 evaluation report on IPTK activities in the broader municipality listed the average income of farm families at \$206 US, the bottom 16% earning \$25 US and the top 8% earning \$500 US (AIPE 1999:25).

IPTK's program, though failing to engage in process to build long-term sustainability and community resilience, is nevertheless making its way towards a longer-term approach. Several staff members I met were openly critical of the scientific arrogance of the early years. Most of the Ravelo staff I interacted with appeared very interested in training that might help them to move the organisation closer to a more balanced, intercultural strategy. Within the 1999-2002 program strategy document, there is acknowledgement, albeit all too brief, of the need to respect cultural diversity.

TABLE XIV CHIMPA RODEO, BOLIVIA, FOOD CROP PRODUCTION DATA, July 2000
 Reported Figures for the Year 2000, \$CAD (4 \$Bs = \$1CAD)

Families (14)	HA Cultivated		Est. Crop Sales		Tractor Fees	Manure Costs	Fertilizer KG	Urea KG	Pesticide (Litres)	Fert.+ Pest.	Net Gain / Loss	Casual Labour	
	Puna	Valley	Papas	Total								Days	Income
Family 1	1.5	1.5	\$210	\$300			85	72		\$54	\$246	25	\$125
Family 2	2.0	0.5	\$300	\$675		\$300	216	72	0.5	\$126	\$249		
Family 3	2.0	0.3	\$70	\$290			46	46			\$53		\$237
Family 4	2.0		\$300	\$444	\$123	\$400	184	46		\$183	-\$262		
Family 5	1.5		\$98	\$98	\$18		184	72		\$140	-\$60	50	\$313
Family 6	2.0		\$800	\$838	\$70		184	72	2.0	\$253	\$515		
Family 7	2.0	0.5	\$560	\$2,150	\$33	\$250	184	46	1.0	\$159	\$1,708		
Family 8	2.0		\$282	\$282	\$24		138	46	1.0	\$136	\$122	20	\$125
Family 9	2.0		\$480	\$480	\$33		138	72	1.0	\$148	\$299	200	\$2,000
Family 10	2.0		\$180	\$180			276	46	1.0	\$228	-\$48		\$360
Family 11	1.5		\$154	\$154			46	46	0.5	\$65	\$89		
Family 12	2.0		\$1,200	\$1,290	\$49	\$138	460	72	2.0	\$395	\$708		
Family 13	2.0	1.0	\$220	\$823	\$16	\$175	184	46	1.0	\$172	\$460		
Family 14	2.5		\$180	\$205			92	46	1.0	\$119	\$86	14	\$70
Total:	27.0	3.8	\$5,034	\$8,209	\$366	\$1,263	2417	800	11.0	\$2,231	\$4,349	309	\$2,993
Avg. puna	1.9												
Avg. valley		0.3											
Avg. papa income			\$360										
Avg. crop income				\$586									
Avg. tractor exp.					\$26								
Avg. manure exp.						\$90							
Avg. fertilizer use (KG)							173						
Avg. urea use (KG)								57					
Avg. pesticide use (Litres)									0.8				
Avg. input expense										\$159			
Avg. net gain											\$311		
Avg.days and income for casual labour												22	\$214

TABLE XIV MOJÓN, BOLIVIA, FOOD CROP PRODUCTION DATA, August 2000
Reported Figures for the Year 2000, \$CAD (4 \$Bs = \$1CAD)

Families (11)	HA Cultivated		Est. Crop Sales		Tractor Fees	Manure Costs	Fertilizer KG	Urea KG	Pesticide (Litres)	Fert.+ Pest.	Net Gain / Loss	Casual Labour	
	Puna	Valley	Papas	Total								Days	Income
Family 1	1.0	1.0	28	28			46		1.0	43	-15	7	35
Family 2	0.5	0.5	108	108	50		138		1.0	125	-67		
Family 3	0.5	1.0	16	16	63		23	12.0	0.5	26	-73	14	88
Family 4	0.5	1.0	40	40	75		46		0.5	38	-73	10	63
Family 5	1.5	0.5			50		46	23.0	0.5	48	-98	14	88
Family 6	0.5	0.5					46	23.0		48	-48	50	313
Family 7	1.5	3.0			50		46		1.0	49	-99	80	350
Family 8	2.0	1.5			50		138		1.5	134	-184		
Family 9	1.5	1.0	40	40	63		69		1.0	53	-76	80	700
Family 10	0.5	0.3					23		0.5	29	-29		
Family 11	1.5	1.0	180	482	10		115	11.5	1.0	99	373	20	
Totals:	11.5	11.3	412	714	411		736	69.5	8.5	692	-389	275	1637
Avg. puna	1.0												
Avg. valley		1.0											
Avg. papa income			37										
Avg. crop income				65									
Avg. tool exp.					37								
Avg. manure exp.													
Avg. fertilizer use (KG)							67						
Average urea use (KG)								6.3					
Avg. pesticide use (Litres)									0.8				
Avg. input expense										63			
Avg. net gain / loss											-35		
Avg.days and income for casual labour												25	149

There are also new research efforts to examine alternatives to potato monoculture, with staff expressing considerable enthusiasm for programming to preserve the biodiversity of the area through the recuperation of traditional potato varieties and soil restoration strategies. The 1998 CENPRUR curriculum for agricultural technicians now also includes content on Andean technologies, Andean cosmovision and several other topics that support ecological agriculture – a system that blends the best of traditional knowledge with useful principles in modern agricultural sciences (IPTK 1998; Altieri 2002; Delgado 1993). My conversations with a new generation of leaders within the organization also suggested a growing openness in reconciling political ambitions with Indigenous identity questions. Two veteran managers also expressed interest in alternative visions of governance and development strategies.

Political party ambitions and continued pressures to deliver donor-driven results within a Western development framework and imposed timelines remain significant challenges, however. Nor does IPTK operate in an organizational cocoon within this region. Any strategy aimed at building an intercultural approach that strengthens resilience must also consider the presence of other important development actors in the picture. While IPTK is the only significant local player in the region, there are several governmental and international organizations at work in the municipality of Ravelo. When it comes to Chimpa Rodeo and Mojón, there are two of particular importance. The first, a potent American newcomer working in Chimpa Rodeo but not Mojón, Food for the Hungry International (FHI), has linked its brand of Christianity to its development objectives. The organization's definition of hunger, for instance, includes spiritual as well as physical dimensions. The second, the well-known multilateral agency, UNICEF, has provided literacy programming in both communities. After my departure, the agency also funded the construction of ecological pit latrines in Mojón. An agency representing a myriad of nationalities, it not surprisingly espouses strong intercultural principles as suggested in its Bolivia program slogan, *iguales aunque diferentes* – equal although different (Albó 2000). I will now turn to a more substantive review of the orientation and programming of these NGO foreigners. Before doing so, however, it is important to stress that my assessment of each of these agencies is based on a considerably less rigorous investigation of their programs in Ravelo, and more particularly Chimpa Rodeo and Mojón, than I was able to do with IPTK. IPTK's willingness to host my research and

to let me observe them up close, warts and all, facilitated enormously their more detailed profiling. Moreover, IPTK's history and presence in Chimpa Rodeo and Mojón has, to date, been considerably more significant than that of FHI or UNICEF.

Food for the Hungry International: Aid for the Hungry in Body and Spirit.

In 1998, FHI made its way to Chimpa Rodeo hoping, it would seem, both to address the community's development and spiritual deficits. Founded by American conservatives of the Christian right, the organisation that arrived was substantive in size and grip. Since the organization first entered the country two decades earlier to launch a child sponsorship program, it had built up a core staff of over 200 people to oversee programming affecting over one hundred thousand direct *beneficiaries* located within the highlands of the country's most food insecure provinces (FHI 2002). During my research term, it was one of the four organizations that the United States Agency for International Development (USAID) had designated as its principal aid delivery partner (Conversation with CARE USA Bolivia Director, Potosí, November 2002). Like a multinational corporation, its healthy budget appears to have facilitated the opening of many doors, not the least of which are those of cash-strapped municipalities at the bottom of the UNDP's HDI. According to the Ravelo municipality's annual report for the year 2000, the organization contributed roughly 46% of the municipality's income from external, non-governmental sources (Ravelo Municipality's Year 2000 Annual Report, 2001).

The organization's establishment in Bolivia began during the *El Niño* disaster in 1983, when staff set up an emergency food relief program. According to FHI's 2002 web-site, the agency has since moved from relief to development, with a special emphasis on agricultural productivity, child nutrition, and maternal and reproductive health. Although not mentioned on their web-site, prior to 1993, the organization also co-sponsored literacy programming in cooperation with UNICEF in the Alonso de Ibañez and Bustillos provinces of Northern-Potosí (Centro de Estudios Sociales 1994:144). FHI has also undertaken a much welcomed *chagas* disease-reduction program in

thirty-eight communities⁶. The approach there is to build more resistant housing and to fumigate others that might carry the *vichuna* insect vector responsible for this sometimes-fatal disease.

FHI's program in Chimpa Rodeo focuses on the three post-relief priority programming areas noted on their web-site: agricultural production, child nutrition, and maternal and reproductive health. Contrary to stated claims on the agency's web-site, food aid is still a part of the child nutrition program. Food relief packages are regularly distributed to the school Chimpa Rodeo's children attend, prompting this comment from a school official I interviewed there: "Before the NGOs we had to do it all ourselves. Now everything is free" (conversation with a Rodeo school official, September 5, 2002).

Ministering both to the hungry and the "hungry in spirit", the organisation is openly evangelical in its approach, offering assistance that staff defines as holistic. FHI's 2002 motto posted on its web-site is "Meeting Needs with Holistic Ministry" (FHI 2002). The slogan on their field station wall in Pata Rodeo, Chimpa Rodeo's village neighbour, is still more precise: "Proclaim to all who suffer from physical and spiritual hunger". Their vision statement, also posted on these walls, reads, "God calls us and we will be there until there is an end to physical and spiritual hunger world-wide". "Unity and diversity" is advanced as one of the organisation's core values, alongside five others, including "the supreme reign of Jesus Christ", "love that builds a complete person", "integrity", "transparency", and "justice". In light of their powerful push to promote a *unifying* vision of the supreme reign of Jesus Christ – one my principal informant called a "Christian cosmovision" – the championing of diversity rings rather hollow.

Along with the *flush* toilets and potable water systems, recently provided to selected Chimpa Rodeo families able and willing to contribute a small counterpart fund, were training workshops that espoused a Christian cosmovision that might put an end to the

⁶ This disease results from an infection caused by the protozoan *Trypanosomas cruzi*. Many of the people infected by this disease will die early of heart disease. The disease is transmitted through the feces of infected *triatomine* such as the conenose or pigeon kissing bug (*Triatoma rubrofasciata*). The bugs tend to feed at night while the victim is asleep, so the individual is usually not aware of what has happened. The response to the disease infection can vary from swelling of the face, eye, or other parts of the body at the site of invasion, to a fatal outcome. Death may occur in 2 to 4 weeks. Young children are particularly at risk. (Global Bird Management Corporation 2003).

"animist fatalism of the Quechua farmer" (interview with a FHI staff person, Sucre, September 27, 2000). About this fatalism, my key informant remarked:

People in this region are very conformist. They don't really aspire to have more. They are also animists who always consider themselves punished. They can't see the future, only today. They seed so they can eat, not more. Why should they study? For what? If boys learn to read and write, it is to get a job. They don't aspire to be professionals. We have to change this. (Interview with a FHI staff person, Sucre, September 27, 2000)

The notion that Indigenous fatalism was the major obstacle to forward-looking thinking – to a vision beyond concern for basic needs – seems not only to have been the opinion of the FHI's staff person I interviewed. Under a sub-section of FHI's "Institutional Identity" document, entitled "Community Vision", this perspective appears to be shared by the broader institution: "The community and its peoples should advance towards the potential God has given them to progress beyond the satisfaction of their basic needs" (posted on an FHI field-station wall, August 2000). In response to a question about the possible socio-economic and political roots of the extreme poverty of the area, my principal informant explained that FHI did not address issues that might be construed as interference in the internal affairs of the nation. Besides, he argued, "the real causes of the extreme poverty in this area were fivefold: man's sins; his lack of knowledge and awareness; Satan's grip; a lack of resources; and an absence of assistance". He also added that FHI had serious concerns about the "pagan cult" of *Pachamama* inherited from the Inca period. The agency was considerably more comfortable, he insisted, with "the more powerful" Inca concept of *Pachakama*, interpreted as "God is sovereign". When asked about the extent to which the organization had integrated an intercultural approach into its program, he responded that interculturalism was not an operational concept FHI employed. He did, however, admit to FHI's need to conduct more research on the cultural identity of their participants to understand them better (interview with a FHI staff person, Sucre, September 27, 2000).

This informant, an agronomist by training, and a group of agricultural extension workers I met briefly, left an impression that when it came to agricultural production there was recognition of the value of some long-held Indigenous crop production strategies like crop rotation and fallowing systems. But the approach to agriculture was otherwise

in keeping with the Western, industrial model that dominated this region. Their focus, according to my informant, "was on marketable crops for profit". "Andean products", he declared without hesitation, "have no market" (interview with a FHI staff person, Sucre, September 27, 2000). FHI central office team did include an environmental specialist to advise on reforestation and environmental impact issues. However, after my brief explanation of my research, the American expatriate in this position was quick to remark, "We don't do biodiversity programming, so are you sure that you want to talk to me?" (informal interview, Sept. 5, 2000). I was later to discover that FHI field staff in the municipality of Ravelo had initiated the organization of an agricultural fair in the community of Pata Rodeo. Modelled on IPTK's Ravelo fair, it also included a competition on the highest number of potato varieties. Head office staff clearly did not always rule the day. Nor did FHI's employees – *tecnicos* in need of employment – necessarily share the agency's official ideology and perspective. Although my key informant painted a pretty standardized profile of the agency's operations, to reduce this organization into a completely homogeneous entity would be to fall prey to the reductionism this study seeks to challenge.

Staff diversity and this local initiative to enhance potato diversity notwithstanding, commercial considerations were paramount within FHI's approach to crop production. Introduced varieties and agrochemicals were offered through a low-interest credit scheme, not unlike the fore-mentioned ANED/ IPTK system but with the addition of a rotating seed-loan fund. The producers FHI gathered into groups, however, were not set up as independent producer associations, as was the case with the ANED model. Rather, they appeared to be organized as FHI producer clubs. Together with the credit, they received counselling and instruction in Christian beliefs, ethics and morals. Field staff expressed a strong desire to strengthen the independence of these producers' groups. The organization, I was told, usually spent a maximum of six years in a given region. Staff wanted to ensure that these groups could operate on their own. But the strategy was vague and, in light of what appeared to me to be an exceedingly paternalistic approach agency-wide, required a considerable shift in approach. Too, with funding patrons supporting messages like the one cited below, external pushes to abandon paternalistic policy and practice would be long in coming. In 1998, for example,

FHI's government donor, the United States International Development Assistance Agency (USAID) teamed up with the Peace Corps to co-fund the publication of a pamphlet that included this advice for the descendants of the indigenous designers of ecological complementarity:

Why Organize? Often working with other people can make our lives easier and more productive. For example, if you have to carry a big, heavy box alone, it is very difficult, but if you have a helper it is easier. You only have to carry half the weight. Working together can make your life in your fields easier and can help to make life in our community easier. If we work together we can help to achieve more in our community. (Centro de Servicios Agropecuarios Tecnicos, Chuquisaca 1998:3)

Not only were the authors of this pamphlet oblivious to the sophistication of the cooperation in ecological complementarity, they also appear to have confused weak reading skills with diminished intellectual capacity.

My several attempts to interview the field station manager of FHI's Pata Rodeo headquarters proved to be in vain. We spoke briefly in Pata Rodeo during a brief encounter in their field station residence. But after several calls and two missed appointments on his part, I realized that participation in one of FHI's agricultural training sessions in Pata Rodeo (involving some Chimpa Rodeo participants) was not likely. I did manage to participate in a session with a group of Chimpa Rodeo women on reproductive health conducted by FHI's Quechua-speaking nurse and an American volunteer, both of whom graciously received me in their quarters in Pata Rodeo when I had no place to stay one night. The session, about an hour and a half in length, began with a short presentation on feminine hygiene, interrupted by repeated late arrivals and subsequent reprimands of "*buenas noches*", good night, though nightfall was hours away. About ten women and one man attended, the man being there to represent his absent wife. Although there were some nervous giggles over the subject matter initially, the women spoke fairly freely. Without a translator, I was unable to understand the Quechua dialogue beyond a few phases and expressions. But the presence of the American assistant who also spoke very little Quechua forced the nurse to translate quite regularly.

The most contentious issue that was raised related to one woman's very blunt acknowledgement that girl babies were not nearly as valuable or welcomed as boys were. The discussion was tense and the FHI staff shut the debate down fairly quickly, obviously disturbed by the attitude expressed. The session concluded shortly thereafter with instructions for a socio-drama exercise the women were to conduct for homework. Religious matters were not raised in this session.

When Quechua was spoken I was able to concentrate my attention on body language and the mood. While somewhat shy at first, the women participants seemed relaxed. They appeared to welcome an opportunity to discuss these health and reproductive matters. The facilitators, on the other hand, appeared uncomfortable, tense and impatient with participants who were not responding as they had probably hoped. When leaving, they commented to me on the need for considerable patience. It would take some time yet to make an impact. There was also a notable absence of food, beverage or coca leaves to share with women accustomed to these symbols of respect and reciprocity. It struck me that these health workers would indeed be in for a long and patient journey!

FHI's willingness to contribute comparatively expensive material assistance, like flush toilets versus pit latrines, and their eagerness to provide services the community could easily handle on their own, such as the transport of fertilizer to the community, contributed to comments amongst NGO workers in the region and, indeed in other parts of the country, that a type of religious gerrymandering was at hand. In communities within the broader Ravelo sub-district, particularly Pata Rodeo next door, there were also rumblings of discontent about organizations that were not offering such generous services, IPTK being one of those. In the four short years since IPTK had discarded its *asistencialismo* – a charity orientation towards development – the approach had returned to the region in spades.

Nevertheless, as the session on reproductive health with Chimpa Rodeo women illustrated somewhat, the people of Chimpa Rodeo did not simply embrace what their latest, wealthy patron preached. Their Indigenous hybrid of Andean spirituality and Catholicism that was so clearly demonstrated during festivals like that of Our Lady of Guadalupe seemed especially impervious to the more literal Christianity of their wealthy

donors. Proud highlanders of the Andean cordilleras, they appeared to reconcile what they considered to be the beneficial with the undesirable. Still, when it comes to production, the “green revolution” dependency model that their first NGO partner, IPTK, is struggling hard to abandon has reared its serpent’s head once again. During the 2000 planting season, for example, several farmers mentioned having delayed planting because they were waiting for FHI’s overdue delivery of fertilizers to the community, a delivery service IPTK had long stopped. Moreover, aid tied to ideology that is so unapologetic in its devaluing of alternative spirituality and worldviews does little to safeguard strategies and knowledge critical to resilient agricultural livelihoods.

During a PRA workshop exercise that had participants assess conditions before and after external development actors first set foot in Chimpa Rodeo and Mojón, all six small groups (three in each community) reported that soil conditions and potato diversity had deteriorated since external institutions first set foot on their lands (see the “Before and After” exercise findings in Tables XVI and XVII). Four of the six groups also reported that the benefits of commercial production had weakened. In a complementary PRA exercise on the “History of Potato Production” in Chimpa Rodeo and Mojón (see Tables XVIII and XIX), all five participating groups reported a significant rise in the use of artificial agro-chemicals since *El Niño* relief agents carried pests into their potato fields.

Factors influencing the decline of soil fertility and biodiversity are, of course, many and complex. It would be unfair to point only an accusing finger at the development community and more particularly at IPTK and FHI. Nor were participants asked to evaluate the direct impact of external intervention but rather only to assess conditions before and since outside agencies established a presence within their community. It should also be pointed out that participants in the “Before and After” exercise from both Chimpa Rodeo and Mojón reported improved health and education services, forestation, animal health and infrastructure conditions. What is clear, however, is the fact that both IPTK and FHI’s strategies to enhance agricultural production, and their blind eye to the sophisticated resilience systems of their Indigenous participants, including the conservation of plant genetic diversity that broadens their survival options, have neither reaped the economic results anticipated or curbed the most repeated and troublesome problems facing these farm families, namely soil deterioration and soil infertility.

TABLE XVI CHIMPA RODEO, BOLIVIA, PRA EXERCISE: BEFORE 1980 (B) AND AFTER 2000 (A), July 2000
 (1 = very poor; 2 = poor; 3 = fair; 4 = good; 5 = very good)

Conditions	Organized Community		Training Available		Infra-structure		Quality of Crops		Forest Cover		Soil		Commercial Potatoes		Native Potatoes	
	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A
Group 1	2	3	2	3	3	4	3	3	3	3	4	3	4	3	4	2
Group 2	2	5	2	4	1	5	4	3	3	4	4	3	3	5	4	3
Group 3	3	3	2	3	2	4	4	3	4	4	4	3	4	3	5	3
TOTALS	7	11	6	10	6	13	11	9	10	11	12	9	11	11	13	8
AVERAGES	2.3	3.7	2.0	3.3	2.0	4.3	3.7	3.0	3.3	3.7	4.0	3.0	3.7	3.7	4.3	2.7

Conditions ... continued	Health of Animals		Human Health		Children's Education		Male Leadership		Female Leadership	
	B	A	B	A	B	A	B	A	B	A
Group 1	1	3	2	3	2	3	4	4	1	4
Group 2	1	4	2	5	4	4	3	4	1	4
Group 3	1	4	2	4	3	3	4	4	3	4
TOTALS	3	11	6	12	9	10	11	12	5	12
AVERAGES	1.0	3.7	2.0	4.0	3.0	3.3	3.7	4.0	1.7	4.0

(1 = very poor; 2 = poor; 3 = fair; 4 = good; 5 = very good)

Conditions	Organized Community		Training Available		Infra-structure		Quality of Crops		Forest Cover		Soil		Commercial Potatoes		Native Potatoes		Agro-Chemicals	
	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A
Group 1	2	4	2	3	1	3	3	5	1	4	4	3	4	5	5	3	1	3
Group 2	1	4	2	5	1	5	3	4	1	5	4	2	5	4	5	3	1	2
Group 3	1	4	2	3	1	3	1	2	1	5	4	2	5	2	5	2	1	3
TOTALS	4	12	6	11	3	11	7	11	3	14	12	7	14	11	15	8	3	8
AVERAGES	1.3	4.0	2.0	3.7	1.0	3.7	2.3	3.7	1.0	4.7	4.0	2.3	4.7	3.7	5.0	2.7	1.0	2.7

Conditions ... continued	Health of Animals		Human Health		Children's Education		Male Leadership		Female Leadership	
	B	A	B	A	B	A	B	A	B	A
Group 1	1	2	1	2	4	5	3	5	1	3
Group 2		4	1	3	1	5	2	3	2	2
Group 3	1	3	1	2	1	3	2	3	1	2
TOTALS	2	9	3	7	6	13	7	11	4	7
AVERAGES	0.7	3.0	1.0	2.3	2.0	4.3	2.3	3.7	1.3	2.3

TABLE XVIII CHIMPA RODEO, BOLIVIA, PRA EXERCISE: HISTORY OF POTATO PRODUCTION, July 2000

(Levels: 1 = low; 2 = average; 3 = good)

CHACO WAR 1933

PRODUCTION ELEMENTS	Group 1			
	Males	Group 2	Group 3	
	Males	Females	Avg.	
Forestation	3	3	3.0	
Soil Condition	3	3	3.0	
Yield	2	3	2.5	
Disease		2	1.0	
Chemical Use			0.0	
Commercial Sales		2	1.0	
Varieties for Consumption	2	3	2.5	

POPULAR PARTICIPATION LAW 1994

PRODUCTION ELEMENTS	Group 1			
	Males	Group 2	Group 3	
	Males	Females	Avg.	
Forestation	2	2	3	2.3
Soil Condition	2	2	2	2.0
Yield	3	2	3	2.7
Disease	1	3	2	2.0
Chemical Use	3	3	2	2.7
Commercial Sales	3	1	2	2.0
Varieties for Consumption	2	2	1	1.7

AGRARIAN REFORM 1953

PRODUCTION ELEMENTS	Group 1			
	Males	Group 2	Group 3	
	Males	Females	Avg.	
Forestation	3	3	3	3.0
Soil Condition	3	3	3	3.0
Yield	3	3	3	3.0
Disease	1	2	1	1.3
Chemical Use			0.0	
Commercial Sales	3	2	3	2.7
Varieties for Consumption	3	3	3	3.0

TODAY (AUGUST 2000)

PRODUCTION ELEMENTS	Group 1			
	Males	Group 2	Group 3	
	Males	Females	Avg.	
Forestation	2	2	3	2.3
Soil Condition	2	1	1	1.3
Yield	3	3	2	2.7
Disease	3	3	2	2.7
Chemical Use	3	3	3	3.0
Commercial Sales	1	2	2	1.7
Varieties for Consumption	2	1	1	1.3

EL NIÑO 1983

PRODUCTION ELEMENTS	Group 1			
	Males	Group 2	Group 3	
	Males	Females	Avg.	
Forestation	1	2	1	1.3
Soil Condition	1	2	1	1.3
Yield	1	1	1	1.0
Disease	2	2	3	2.3
Chemical Use	2	2	3	2.3
Commercial Sales	1	1	0.7	
Varieties for Consumption	1	1	1	1.0

TABLE XIX MOJÓN, BOLIVIA, PRA EXERCISE: HISTORY OF POTATO PRODUCTION, August 2000
 (Levels: 1 = low; 2 = average; 3 = good)

CHACO WAR 1933

PRODUCTION ELEMENTS	Group 1 Group 2		
	Males	Females	Avg.
Forestation	2	1	1.5
Soil Condition	2	3	2.5
Yield	3	3	3.0
Disease	1	1	1.0
Chemical Use			0.0
Commercial Prices	3	2	2.5
Varieties for Consumption	3	2	2.5

POPULAR PARTICIPATION LAW 1994

PRODUCTION ELEMENTS	Group 1 Group 2		
	Males	Females	Avg.
Forestation	2	2	2.0
Soil Condition	2	2	2.0
Yield	2	2	2.0
Disease	2	3	2.5
Chemical Use	3	2	2.5
Commercial Sales	2	1	1.5
Varieties for Consumption	3	2	2.5

AGRARIAN REFORM 1953

PRODUCTION ELEMENTS	Group 1 Group 2		
	Males	Females	Avg.
Forestation	2	1	1.5
Soil Condition	2	2	2.0
Yield	2	3	2.5
Disease	2	1	1.5
Chemical Use	1		0.5
Commercial Sales	3	2	2.5
Varieties for Consumption	3	2	2.5

TODAY (AUGUST 2000)

PRODUCTION ELEMENTS	Group 1 Group 2		
	Males	Females	Avg.
Forestation	3	1	2.0
Soil Condition	2	2	2.0
Yield	2	2	2.0
Disease	2	3	2.5
Chemical Use	3	2	2.5
Commercial Sales	1	2	1.5
Varieties for Consumption	3	2	2.5

EL NIÑO 1983

PRODUCTION ELEMENTS	Group 1 Group 2		
	Males	Females	Avg.
Forestation	1	1	1.0
Soil Condition	2	1	1.5
Yield	1	1	1.0
Disease	2	1	1.5
Chemical Use	2	2	2.0
Commercial Prices	3	3	3.0
Varieties for Consumption	2	1	1.5

For subsistence and semi-subsistence farm families, tired or sick soils can indeed sound a livelihood death knell. They certainly accelerate the loss of native potato varieties that require more nutrient rich soils (PAC 1996), with *tierra virgin* soils – ones that have never been chemically treated – being the ideal according to several Indigenous farmers I spoke with. For as much as these Indigenous farmers have resisted a complete switch to *new* and *improved* varieties, preferring to consume their more tasty and *arinosa* or mealy ancestral varieties, they have also abandoned a considerable amount within just two generations. This abandonment has been a response to the push all around them to grow the introduced varieties.

But the decline in native varieties also reflects deteriorated genetic stock and the fact that these varieties no longer grow well on blanched, overused or treated soils. The trends, as reported in Tables XX and XXI, are extremely worrisome. Chimpa Rodeo participants in my survey, of an average age of 35 years, reported a 56% loss of the sub-species *tuberosum andeum* since they first helped grandparents and parents cultivate their family's food crops. Although Mojón farm families interviewed each had on average one or two varieties of *tuberosum andeum* more and respondents were an average of 11 years older, at 57% their percentage decline was equally troublesome. Participants also reported that their Introduced tubers were degenerating rapidly. More and more of Chimpa Rodeo and Mojón's indigenous farmers were forced to join the growing number of potato farmers throughout the Andean region in a chorus of "ya no tiene fuerza" [It has lost its strength or power] (see van der Ploeg 1993: 222).

Mojón's farm families, as noted, were not the recipients of nearly as much NGO intervention. However, as experienced migrants, they had witnessed production yields in NGO-sponsored fields that seemed, in the short-term at least, very attractive, and thus followed suit. Still, they were the community who expressed the most regret over their abandoned varieties as well as the most enthusiasm for programming that might help them to return to earlier levels of biodiversity within their beloved potato fields.

In response to my questioning about the reasoning behind their abandoned traditional varieties, farm family after farm family on both communities reported that their soils were no longer fertile enough to grow varieties they preferred and indeed missed.

TABLE XX CHIMPA RODEO, BOLIVIA, REPORTED POTATO VARIETIES ABANDONED SINCE CHILDHOOD, November 2000
(Andigena and Tuberosum Sub-Species; Average age of respondent: 35 yrs)

Family	Varieties Produced Year 2000	Varieties Abandoned	Total Varieties	Percentage Abandoned
Family 1	7	17	24	71%
Family 2	3	16	19	84%
Family 3	1	12	13	92%
Family 4	14	11	25	44%
Family 5	9	14	23	61%
Family 6	11	7	18	39%
Family 7	4	13	17	76%
Family 8	19	7	26	27%
Family 9	9	10	19	53%
Family 10	10	4	14	29%
Family 11	3	14	17	82%
Family 12	14	2	16	13%
Family 13	15	7	22	32%
Family 14	2	14	16	88%
Avg. No. Produced	8.6			
Avg. No. Abandoned per Family		10.6		
Avg. Total of Varieties Reported			19.2	
Avg. Percentage Abandoned				56.4%

TABLE XXI MOJÓN, BOLIVIA, REPORTED POTATO VARIETIES ABANDONED SINCE CHILDHOOD, November 2000
(Andigena and Tuberous Sub-Species; Average age of respondent: 46 yrs)

Family	Varieties Produced Year 2000	Varieties Abandoned	Total Varieties	Percentage Abandoned
Family 1	4	23	27	85%
Family 2	9	12	21	57%
Family 3	10	12	22	55%
Family 4	4	15	19	79%
Family 5	16	7	23	30%
Family 6	4	14	18	78%
Family 7	13	5	18	28%
Family 8	16	12	28	43%
Family 9	22	5	27	19%
Family 10	7	21	28	75%
Family 11	5	21	26	81%
Avg. No. Produced	10.0			
Avg. No. Abandoned per Family		11.3		
Avg. Total of Varieties Reported			23.4	
Avg. Percentage Abandoned				57.2%

Farmer upon farmer also mentioned that there once had been alternatives to chemical treatments for disease control. They vaguely remembered their grandparents having used or mentioned alternative pest-control strategies in addition to that of ensuring a healthy fallowing period. But, they lamented, the actual techniques that used to keep their families land healthy and robust for production had been forgotten. A CENPRUR graduate from another Ravelo community had this explanation about the loss of this knowledge: "There was organic control in my grandfather's day... certain plants were used, for example, but it became easier to use the *fito sanitarios* [chemical treatment]" (paraphrased quote from interview of July 6, 2000, Ravelo, Potosí). As Miguel Holle of CIP cautioned early on in my research, we should be worried less about the actual loss of varieties than about the loss of knowledge needed to maintain them (June 13, 2000 interview with Holle, CIP, Lima, Peru). Carr's observation based on his work with the Dasanetch of Ethiopia is also instructive: "To survive, the group needed not only to produce its means of subsistence, but to reproduce the conditions that allow survival. The associated environmental and social complexes were both essential to the reproduction of the mode of production" (Carr 1977: 244 in Merchant 1990: 677).

In summary, we are left to find fault in the collective initiatives of the development community, and in the case of Chimpa Rodeo and Mojón, IPTK and FHI, based not only on their active agency in the acceleration of this diversity decline through "Green Revolution" strategies, but also based on what they have overlooked. Having turned a blind eye to Indigenous resilience strategies and knowledge about systems to conserve the soil fertility at the heart of their sustainable livelihoods, development agents must accept their fair share of responsibility for the consequences of their ethnocentrism and neglect. If FHI is not to represent the latest agent in a series of *dealers* offering a temporary *high yield*, the strengthening of skills in intercultural dialogue and negotiation is urgent.

UNICEF: Interculturalism Without Muscle or Punch

The third organization I reviewed for this study, UNICEF, should have begun this long-overdue and more appropriate intercultural training when it first launched its literacy program in the area, around the same time as FHI. Built right into their 1998-2002

program is an intercultural orientation to literacy skill development. However, as this final organizational profile will demonstrate, for a number of external and internal reasons, they too have not been able to deliver the goods, failing to practice what they so thoughtfully preach.

Created by the United Nations General Assembly in 1946 to meet the needs of displaced children from the Second World War, UNICEF has since emerged as a leading advocate of child welfare and children's rights around the world. UNICEF went to Bolivia early on in its history, arriving in 1950 with this goal: "safeguarding childhood, promoting child development, assuring a child's legal protection and participation in society within the context of their rights, and to extend such protection to women as well" (UNICEF 2003). In 1965, the Swedish parliament awarded UNICEF the Nobel Peace Prize in recognition for its efforts to make the world a safer place for children. More recently, UNICEF spearheaded the formulation of the International Convention on the Rights of the Child, an instrument that outlines how signatory countries are to protect the rights of their children. Bolivia ratified its adherence to the Convention in May of 1990. In September of that year, UNICEF followed the Convention up with an International Summit on Childhood that convinced 150 world leaders to adopt a Declaration and Plan of Action on child survival, protection and development until the year 2000, a commitment that was approved by the Bolivian government on December 14, 1990 (UNICEF 2002). UNICEF's Bolivia country program today is grounded, therefore, in the commitments set out in the Declaration.

Working in cooperation with the State, with civil society actors, including local NGOs, with other international development organizations, and with community-based groups, UNICEF just completed a four-year cooperation agreement with the Bolivian government (1998-2002) that focuses on two major programs: public policies favouring women and children's rights and participation in public domains, and municipal and family development. Objectives of this program are wide-ranging. They include, but are not limited to, a reduction in the level of infant and child mortality (under five) from sixty-five to forty-five live births per thousand, a 50% cut in the level of *analfabetismo absoluto* – absolute illiteracy – and significant improvements in women's participation in public life (see UNICEF 2002a:6). UNICEF Bolivia has also chosen to focus on the Andean and

Amazonian regions with the highest concentration of Indigenous peoples, with their Andean regional program called, *el Programa Andino de Servicios Básicos contra la Pobreza* (PROANDES) – the Andean program to combat poverty through basic services. PROANDES funds are specifically earmarked for 24 municipalities in Northern Potosí and Southern Cochabamba, the two areas with the most extreme poverty in the country. Of particular interest for this thesis are two programs they are delivering in Northern Potosí, together with the federal Ministry of Education and local municipalities: an intercultural and bilingual education program aimed at primary school teachers and village-level school committees; and a women's bilingual literacy program meant not only to enhance reading, writing and computation skills in Quechua and Spanish but also, echoing the familiar words of other United Nations organizations, "to promote human development". In year two of this latter program, the educational material specifically addresses agricultural production themes (UNICEF 2002b:2).

The first program, *Educación Intercultural y Bilingüe*, is part of a multinational effort to assist Bolivia with the implementation of its very progressive but enormously challenging educational reform legislation. The *Ley de la Reforma Educativa* was passed in 1994 by the Gonzalez-Sánchez administration, as part of an integrated package of legislation more favourable to marginalized communities and peoples, including the aforementioned People's Popular Participation Act and INRA. I witnessed one UNICEF-sponsored training session for teachers and the presidents of the local community school committees. I also had an opportunity to interview personnel within the Ministry of Education spearheading the educational reform program, to speak with staff on the front lines, including principals and teachers, and to discuss the program with UNICEF's staff in its La Paz headquarters. While unanimously supportive of the impressive objectives of the *Reforma Educativa*, they all spoke about the frustrating trials and tribulations of this program. Attempting to take an extremely impoverished and educationally bankrupt public system that had almost completely ignored ethnic and cultural diversity in a direction where ethnicity, difference and rights are not only acknowledged but championed is not only ambitious reform but revolution. Article 1.5 of the Act reads, for example, that Bolivian education is now structured on a fundamental educational base that is "intercultural and bilingual because it presupposes the country's

socio-cultural heterogeneity in an atmosphere of respect amongst all Bolivians, men and women" (Ministry of Education, Culture and Sports 1999:10). Posted on the classroom wall of the teachers' workshop I attended was the slogan: *Viva la diferencia, con derechos iguales* – celebrate difference, with equal rights – and another statement that said: "Today's teacher should be one who questions in a way that forces children to reflect. Create a climate of debate that respects diversity!" (Teacher training, Ravelo municipal offices, October 21, 2000). But the implementation path has been tremendously challenging. Pitifully paid, poorly trained, Quechua-deficient teachers have been taking to the streets to protest components of this legislation on a regular basis. The process of the past eight years has been one of taking two careful steps forward and one very awkward step backwards. Patience and more national and international investment is needed to make it work. UNICEF's Intercultural and Bilingual Education program is precisely attempting to give the government's "Reforma Educativa" program another kick-start.

The Reforma Educativa, including UNICEF's Intercultural and Bilingual Education Program was only just finding its way to Chimpa Rodeo and Mojón when I spent time in their communities. An in-depth treatment of this program is left for future scholarship. I have introduced this program here for two reasons. First, I wanted to draw attention to new development initiatives and educational trends that are beginning to influence the understanding and attitudes of Ravelo's children, including the children of Chimpa Rodeo and Mojón. Second, I wanted to highlight UNICEF's commitment to interculturalism as a guiding principle in its approach to child and family development.

Before I move on to a more detailed profiling of the second program that has operated in Chimpa Rodeo since 1999 and in Mojón between 1998 and the year 2000, I would like to mention three texts produced on UNICEF's behalf to support its intercultural programming objectives. The first two, *Cultura 1* and *Lengua 2* were produced in 1993 as "support materials for the training of local trainer-coordinators (vs. literacy promoters) in intercultural and bilingual education" (UNICEF 1993a). Revised and updated from UNESCO/ OREALC 1988 originals of these texts (produced in Chile), they are straightforward anthropology and linguistics primers designed to enhance literacy trainers and program coordinators' understanding of Bolivia's Indigenous

cultures and their appreciation of the rules of language. The information is comprehensive and comprehensible, with a research, evaluation and examination guide appended for use with students. In the text called "Cultura 1", there is an extensive discussion of Andean traditions and rituals as well as a fairly thorough description of the essential components of ecological complementarity. I was unable to determine the distribution levels of these texts. But the IPTK staff person who passed them on to me, a CENPRUR graduate who was at one time responsible for IPTK's literacy programs in Chayanta, explained that they were given to her in a UNICEF workshop for literacy coordinators that she had attended. "I was hardly able to put them down", she enthused. "They were so rich in information" (informal conversation with IPTK staff-person, Ocuri, April 2000).

The third text "Iguales Aunque Diferentes" (2000), produced by well-known anthropologist Xavier Albó, was designed with a different audience in mind. Its message about the fundamental importance of the intercultural dialogue at the heart of Bolivia's educational reform program is directed at development officials and policy makers. Bolivia's vice-minister for preschool, primary and secondary education in the year 2000 prefaced the book with this endorsement: "[The book] without doubt, supports the effort to translate into State policy and social practice the acknowledgement and revaluing of the different cultures and peoples that form our society" (Albó 2000:9). Albó (2000:87) defines the intercultural ideal at the heart of Bolivia's *Reforma Educativa* Program as:

[T]he development of capacity among peoples of different cultures to interact with each in a positive and creative manner...Each participant in this intercultural dialogue will undoubtedly be enriched by the contributions of the other, and... their respective cultures can also adopt elements from the others. But the roots of each identity will be maintained, especially through one or another of those elements that we have labelled the symbolic components of culture.

Meeting such an ideal is exceedingly challenging, particularly when there is a complex mix of political, economic and social factors to reconcile. Within the organization's women's literacy program that I reviewed up close, the application of interculturalism had fallen short of the ideal. And if UNICEF fulfills its rumoured intention to leave the region in the not too distant future due, one extension worker claimed, to a desire to divert its funds to the African continent (in conversation with a UNICEF

extension worker, August 1, 2000), this gap will not be bridged. The ensuing review of the fissure between the program's theory and practice explains why.

UNICEF bilingual literacy program in Ravelo and in turn Chimpa Rodeo and Mojón is called *Yuyay Jap'ina*, a Quechua expression meaning take or seize the knowledge (Centro de Estudios Sociales [CENDES] 1994:141). Although arriving in Ravelo in 1998, the program originated in 1992 as a Quechua-based program in another part of Northern Potosí. It was a joint initiative between UNICEF and FHI, in cooperation with the Bolivian government's National Education Secretariat and the Social Investment Fund or *Fundos de Inversión Social (FIS)*. Gathering women together through already existing *Clubes de Madres* or Mother's Clubs, the 1994 program had five primary objectives:

1. To fight illiteracy, paying special attention to Quechua and Aymara women farmers;
2. To contribute to the development of the Indigenous culture and to reaffirm cultural identity within the context of women's rights;
3. To elaborate, produce and distribute literacy workshop materials in Quechua and Aymara;
4. To transfer the methodology for the management of the training materials to the program supervisors;
5. To develop training seminars, courses and workshops for literacy workers on the methodology and linguistics of the literacy materials and mathematics (CENDES 1994:142).

A comprehensive review of all the major adult literacy programs across the country conducted in 1994 by staff from the non-profit research organization, *Centro de Estudios Sociales* (CENDES) or Social Studies Centre, praised this *Yuyay Jap'ina* program for its didactic pedagogy, for its training of young leaders and for content that motivated participants to hold their union leadership accountable. Evaluators were also pleased to observe materials prepared to teach computation (CENDRES 1994:236). But they also listed a host of problems with the implementation of this *Yuyay Jap'ina* program, beginning with a lack of clarity on the part of the literacy promoters – generally in their twenties – about the program's goals and objectives and their poor mastery of teaching methodologies (CENDES 1994:257-261). There were other pedagogical weaknesses noted as well, including an insufficient distribution of learning materials and a failure to

take into consideration the diversity of students' literacy levels that ranged from absolute illiteracy to experience with a grade five level of reading, rather rusty after years of neglect. Literacy promoters were poorly motivated, often showing up late or not at all. Classes were often scheduled during peak periods of farming activity, contributing to irregular or interrupted attendance. A lack of appropriate physical infrastructure, like desks, chairs, and light to read by, was also problematic. But perhaps of greatest concern to the study's authors was the program's failure to coordinate its training program with municipal authorities and the resentment participants felt over the stipend literacy promoters received. These stipends were higher than the average municipal wage for "unskilled" services. Participants were not at all happy that their requests for a share of these stipends fell on deaf ears. Nor were they pleased to learn that the food rations that FHI had once distributed to the Mother's Clubs were not a part of this program (CENDES 1994:257). Since immediate and tangible rewards for participation were not offered, participants appear to have lost interest. The average dropout rate was 54% (CENDES 1994:260). Those who continued to participate demonstrated reading and reading comprehension skills well below average (CENDES 1994:261).

The program that UNICEF staff brought to Ravelo communities in 1998, this time without FHI's participation, appears to have taken into consideration the CENDES critique and several of the study's recommendations. The municipality, for example, was offered a key role in its implementation, assuming responsibility for the literacy program coordinators and the training of the village promoters. The municipality, for example, provides classroom space for the training of the literacy promoters as well as accommodation and food during training workshops generally lasting four consecutive days. In addition, community-based literacy classes are now scheduled when most participants can attend. While infrastructure and equipment remain less than ideal in communities where there is no school or only one-room schools that are small and dark, all participating communities are provided with a kerosene lamp and a ration of kerosene to facilitate evening sessions.

The content and distribution of educational materials also appears to have improved. UNICEF sends its own program staff to explain the organization's goals and the anticipated results of the program. Indeed, the training session I attended offered a

very thorough outline of the literacy program's objectives in accessible language, although translation was required since the La Paz native holding the regional program coordination position spoke Spanish and Aymara but only limited Quechua. UNICEF'S web-site now notes the following four program objectives:

1. To reduce illiteracy by 50%, especially among women over 15 years of age;
2. To promote women's participation as active citizens;
3. To develop skills that facilitate comprehensive reading and creative writing skills as *basic tools for human development*;
4. To develop an educational process that in the second phase is oriented towards production (UNICEF 2002).

Training sessions for promoters, as I witnessed during my participation in three days of a four-day training session from July 17 to the 21st, 2000, reflect pedagogy that is both interactive and entertaining. Quechua-speaking trainers stress the importance of dialogue and a two-way learning process, whereby teachers can also learn from students. Role-plays are assigned and critiqued by the facilitators and other participants on the verbal and non-verbal messages projected to students within the role-play. Community maps are drawn, leading to lessons on the writing of items that were placed on the map. When attention is waning, a student will be asked to pull his *charango* from his bundle and lead the group in a *Jalq'a* song.

Community ownership of the literacy program is also encouraged through community participation in the selection of the literacy promoter for the targeted area. Stipends have been maintained, given the considerable time requested of promoters (64 to 76 hours a month), but at a rate the municipality has sanctioned. In the case of Ravelo, this was 120 Bolivians or approximately \$40. CDN a month (conversation with a literacy coordinator, July 2000).

Program content addresses participants' everyday lives and strategic interests. Basic booklets cover subjects such as maternal health, infant development, basic sanitation and rural life (UNICEF 2002). Gender rights and the Popular Participation Act are also included (UNICEF 2002), with a healthy dose of nationalist rhetoric supporting the content on citizenship education, a feature that is common to all Bolivian schools. In

year one, classes focus on participants' mother tongue. In year two, spoken Spanish and Spanish reading and writing skills are introduced as well as production content related to crop cultivation, animal husbandry, complementary economic activities, micro-enterprise and micro-credit (UNICEF 2002). If CENDES were to evaluate this revised curriculum and approach today, UNICEF would undoubtedly earn a good grade for learning from mistakes. Still, my research suggests that this improved program continues to fall short both of its literacy objectives as well as its intercultural and equity goals.

It was not my intent nor within my capacity to conduct testing to measure the technical success of the program. But reports and my observations within Chimpa Rodeo and Mojón as well as during municipal training and planning events, revealed that with a few notable exceptions (like a very determined grandmother who took her practice reading and writing materials with her when shepherding her sheep) participants in this literacy program, including those from Chimpa Rodeo and Mojón, had made very minimal progress after two years. Two years is of course a short period for assessment purposes. But *Yuyay Japina* had a fixed duration of two years in each community. With no follow-up activities built into the program, chances of moving beyond this level of skill were thus very slim.

One of the municipality's coordinators – IPTK-trained and native of the municipality claimed that the UNICEF program had contributed to a 30% decrease in illiteracy in the targeted region since its 1998 launch (informal interview, May 2, 2000). But what I consistently observed in Chimpa Rodeo and Mojón were graduates from the *absoluto* group who could only boast an ability to sign their names. They appeared to value this new skill. But a signature without the capacity to read can be a dangerous tool, potentially weakening rather than strengthening an individual's control in his or her life. The documents these non-readers signed their name to would be interpreted to them by others who might not always have their best interests in mind. Of course, it can be argued that villagers regularly used their thumbprint to *sign* such a document anyway. But in contrast to a signature, a thumbprint is a much clearer indicator for the public record that the *informed consent* was based on another's explanation of the document. The signed registers of participants in public meetings and during public referenda could likewise be misleading if enough of the people signing the register are not able to read or

write. Such a record distorts the public record of literacy levels, leaving an historical profile that is simply not accurate. In short, there is potential both for the abuse of the individual and the weakening of society's understanding of the literacy reality.

Participants with some primary school education appeared to have fared better. Lessons did jog their memory, helping them to dust off skills long in storage. Their progress may account for the reported increases. But as those both within my PRA workshops and in the aforementioned municipal planning session revealed, these skills were shaky at best. The reading comprehension and writing skills that I observed were generally well below high school levels. Many of those assigned to fill in the questionnaires from the municipal planning session, had, as mentioned, significant difficulty with the form. And as noted, 25% of the community-selected leaders sent to the workshop were unable to sign their name. Their community had either selected their representatives for other skills or overestimated their reading and writing abilities, since few had the experience to judge such capacity. Or it may simply have been their turn to go, given the importance attributed to the concept of shared responsibility among the Jalq'a. Leadership, not literacy, skills may well have been their priority for participants in the planning process. In response to my observations about the limited technical progress that I had witnessed to date, UNICEF's regional program coordinator acknowledged the poor results. He attributed them to a lack of adequate follow-up. Two years, he admitted, was simply not enough for lasting results. Little could be done, however, since UNICEF intended to leave the country at the end of this program phase (interview August 1, 2000).

Weak follow-up and continuity problems, though important and perhaps the most obvious reasons for the weak technical results, were not, in my view, the most significant factors. The reading and writing skills of the literacy promoters themselves also varied considerably, with some much weaker than I would have expected. During the workshop for promoters that I attended, one of four implemented throughout the year, it soon became clear that few could read and write Quechua well, the language of primary focus during the first year of the program. During the testing session that took place at the beginning of the workshop, I observed several students copying the answers from the few who had mastered the written form of their native tongue. The most advanced

Quechua-writers seemed to be participants who had learned to read a Bible that had been translated into Quechua. For those who had not received such Bible training, participation in a four-day training session on Quechua literacy appears not to have been sufficient.

Spanish reading and writing skills were not consistently strong either. Most promoters had completed no more than grade five in their local school and rarely had been afforded the opportunity to practice this skill during the eight to twenty years or so since they had completed school. The only books I ever came across within the communities I visited were very basic grade school workbooks, dust covered, torn and with pages missing. Ravelo's merchants did not sell newspapers, let alone books. Reading, even among the literate within these semi-subsistence farm communities, was a luxury few could afford. So, with the exception of those promoters also serving as the minute takers in local union meetings, reading and writing for these promoters was largely connected to the course they taught, unlikely to improve beyond their current level. Promoters I spoke with during the training workshops repeatedly expressed an interest for more training to improve their own reading and writing skills. The broader "culture of literacy" needed to practice and maintain their skills was simply non-existent.

If the *Yuyay Jap'ina* program was having difficulty reaching its technical objectives, its socio-cultural ones seemed even more out of reach. While explicitly targeting women as trainers and participants, only three of the thirty-five literacy promoters in the Ravelo training workshop were women (Ravelo Literacy Promoters Workshop, July 17-21, 2000). The extremely high rate of illiteracy among women of these communities offered a very small pool of literate women to draw from. Communities were also reluctant to send their un-chaperoned young women to workshops for four days at a time. When I discussed this matter with a UNICEF literacy program director, headquartered in La Paz, she expressed concern about these flaws. She was convinced, however, that the community's selection of local promoters was the best route, despite the methodological problems this system created. More skilled outsiders would not, in her view, have been a better option. Having local people who know the local scene teach local participants was one of their principal tenants of their intercultural strategy (interview with a UNICEF Program Director, La Paz, December 14, 2000). Principle overruled pragmatism. But

principle built on an inadequate assessment of, or commitment to, the longer-term investment needed to assist these local folk to deliver the goods lacks conviction. And men teaching mostly married women about content that, in the first year at least, is intended to cover women's rights and concerns as women, including all too frequent domestic abuse, defeats the rights-based principles. The time and resources required is significant, but the investment lost through sub-standard programming is still more troublesome.

Also not adequately considered in the program strategy is the practice of *doble domicilio* among families in communities like Chimpa Rodeo and Mojón. Classes are generally scheduled in *puna* highlands, which makes consistent participation a challenge. This oversight is symptomatic of a more substantive absence of the intercultural content in the programming. As with the IPTK programming aimed at celebrating indigenous culture, the focus within the training workshop and of the basic reading materials I observed was on material or etic manifestations of culture. Words taught included items such as an *awayo*, the wonderfully colourful blankets women weave to carry their babies. Promoters were also encouraged to come up with themes they thought participants would respond well to. But concepts addressed were extremely simple ones, with the consequent dialogue also shallow, a reflection perhaps of the overdue emphasis on the technical acquisition of reading and writing skills. The paternalism of the Northern NGO does not seem to have escaped UNICEF trained staff. There was little evidence of critical dialogue about alternative worldviews, the value of indigenous practices such as ecological complementarity and labour exchange, or how the world of the mestizo outsider was affecting Indigenous culture.

The content related to agricultural production, both within the workshop for promoters and within the materials they passed on to their students, was especially disappointing and conventional. One session on pesticide and insecticide use did not once address safety issues and the potential hazards to human and animal health. Ecological agricultural techniques were simply not on the agenda, let alone topics such as biodiversity conservation. While Freireian talk about the importance of didactic and dialogical education was evident, the praxis of strategic thinking was not. An excellent opportunity to raise critical understanding among young community leaders and the

participants who would hear their message was missed. One of the trainer/ coordinators facilitating the workshop I attended offered this revealing interpretation of UNICEF's objectives: "to end illiteracy and teach them (students) new knowledge about rural life and agricultural production". This "basic tool for human development" has proven in practice to be a conventional, "dipstick" development device, attempting to fill a perceived void with status quo knowledge needed for participation in the world of Western capital on Western terms.

There is yet another irony in the development experience of the *Jalq'a* participants in my study. If we consider Bloch's challenge to the centrality of language and literacy in the development of knowledge, *Yuyay Japina*'s deficiencies might represent a blessing in disguise for its unsuccessful graduates. To recap, Bloch (1994:277) and the connectionist theorists he references (Smith 1988; Rosch 1977; Fillmore 1975), argue against a sequential, linear framework for knowledge formation and transmission. They suggest, rather, that we access knowledge – either from memory or as it is conceptualized from perception of the external world – not as a serial process of analysis along a single line but through a number of processing units that work in parallel and feed in information simultaneously. Concept formation involves implicit networks of meaning that are formed through experience of, and practice in, the external world. Bloch's hypothesis fits well with the findings of scholars of indigenous learning styles. The Inuit learners, Stairs (1991:281) observed, "typically develop concepts and skills by repeating tasks in many different situations, such as hunting under varying conditions of weather and animal movement and with various types of equipment". Like the skilled Bao player discussed in Chapter Two, the Andean farmer, by continuously monitoring the responses of their numerous plant varieties to ecosystems and production conditions that can change from hillside to hillside, from hillside to valley and from morning to afternoon, has successfully nurtured enormous diversity. Training people with the capacity to manage such diversity under rapidly changing circumstances to read and write from left to right, letter to letter, word to word, line to line, paragraph to paragraph, and page to page could well nurture language-based logic and problem-solving that is ill suited to the management of dynamic and complex systems. Women might, for once, have an advantage over the men. Their more pronounced inability to read and write

might well spare them from a pull into a knowledge framework that could weaken their contribution to ecological and social resilience. Gramsci's double-edged literacy sword takes on a third element emerging as a three-dimensional sword.

To review, Gramsci (1957) insisted that literacy could be wielded both for the purpose of self and social empowerment and for the perpetuation of relations of oppression and power (in Giroux 1987:2). As indigenous peoples on the margins, one edge of the blade could conceivably clear a path to community development on their terms or at least on better terms vis a vis the dominant power structures. If the material they learn to read attempts to indoctrinate them into the Western values and socio-political and economic systems that do not serve their interests well, the edge is razor sharp and destructive. The third edge – representing the linear, sequential and compartmentalized way one learns to read and write – is less obvious but possibly more insidious. It has the capacity to cut away at the knowledge systems these indigenous farmers need to survive in their ever changing and always challenging ancestral homelands. My research suggests that we should not assume that the sickle-like edge of the literacy sword will automatically clear a path to full fledged citizenship. It also points to the need for more careful attention to the edges that, like an unwieldy scythe, can draw blood.

Although equipped with a solid theoretical understanding of the intercultural dialogue and negotiation needed to break the stranglehold of Western cultural imperialism, in practice UNICEF joins IPTK, FHI and others in a global development enterprise that assumes the Western way to be the right way. The "capacity building" and development programs of the Western outsider have clearly not only failed to validate and value Indigenous alternatives to Western ways of knowing; they have marginalized them. Hand in hand with the monocropping of potato plants, there appears to have been a monocropping of their Indigenous producers and the knowledge they possess. Biodiversity within these communities has been maintained in spite of rather than because of occidental intervention. Still, as I will argue in my concluding chapter, Jalq'a resistance to cultural domination from the West leaves room for new patterns and principles to be established if those with enough vision and clout from both indigenous

and NGO leadership circles have the courage to grab the baton for a more revolutionary and respectful relationship.

CHAPTER SEVEN

CONCLUSION: TOWARD DEVELOPMENT WITH DIGNITY

Development, as in Third World Development, is a debauched word, a whore of a word. Its users can't look you in the eye. Among biologists, the word means progress, the realization of an innate potential. The word is good, incontestable, a cause for celebration. In the mouths of politicians, economists and development experts like myself, it claims the same approval, but means nothing. There are no genes governing the shape of human society. No one can say, as a gardener can of a flower, that it has become what it should be. It is an empty word that can be filled by any user to conceal any hidden intention, a Trojan horse of a word. Development in the mouths of Americans has a lot more in common with psychotherapy in the mouths of Russians... (Frank 1986:231)

Review of the Study and Findings

The article this passage introduces, *The Development Game*, traces the work of a multinational team of experts hired to plan a multimillion dollar development assistance program in the Northwest frontier of Pakistan where the peasants' "fair complexions, rosy cheeks and straight noses" made it hard to take their poverty seriously (Frank 1986:233). In the second paragraph, the author, a Canadian consultant writing under a pseudonym¹, continues with an opposing, more comfortable view of development for those charged with its delivery:

No. This is nonsense. There is nothing sinister about 'development'. It is simply a useful word to describe the achievement of desirable goals: higher incomes, better nutrition and so on. There are no serious disagreements about what is desirable, and by repeated use the word has achieved a validity of shared understanding. That is all. (Frank 1986:231).

¹ I first read this article shortly after its publication in *Granta* in the winter of 1986. That's gutsy, I thought! I recently learned that Leonard Frank was the author's pseudonym. Even critics need a pay cheque!

But as the article's title suggests, the debate Frank narrates thereafter argues a more convincing case in favour of his first contention. This study, through its literature review and field research exploring the intersection and fissures between Western theories of knowledge and development and the worldview and practices of indigenous peoples, has also questioned such complacent definition of development. Occidental development's positivistic blinders, "dip stick", deficit theories, lip-service to the legitimacy of alternative knowledge and belief systems, and commercial orientation has too often left many on the margins feeling used or abused, dependent on the outsider. Within this Western *development* equation, it is the marginalized *unfortunates* – the negated poor – who are ultimately responsible for the tight web of poverty that will not release them.

My profile of the Jalq'a *paperos* of Chimpa Rodeo and Mojón does not, fortunately, fit into such a disheartening scenario. Capacity building programming aimed at the modernization and monetization of their agricultural economies, featuring "green revolution" cultivation and a monolithic concept of farmer, has seriously weakened their resilience – the ability to maintain ecological and social systems in the face of disturbances and change (Berkes et al. 2003:13). Two especially troubling examples of their narrowed options can be found in the growing infertility of their soils and the decline of the plant genetic diversity of their favoured, nutrient rich, potato crops. But these proud descendants of the Inca Nation have not succumbed to the development prostitution Frank disparages, dragged under the bloated body of a globalized economy and Western political empire that will never serve their interests well. To borrow Murra's (1984:119) words cited in Chapter Five, "in spite of the pressure exercised against everything Andean and those who created them during the 450 years of colonial and republican regimes", the story of the people of this region is not a modern retelling of colonial domination and subjugation. The Jalq'a of Chayanta, like many of their neighbours in Northern Potosí, have never been completely conquered by occidental cultures or market forces outside their borders. They are stubbornly holding onto traditional ecological knowledge systems, their continued, albeit modified, application of ecological complementarity serving as an excellent example. While not explicit in their discourse, their refusal to abandon this system suggests a keen awareness of its

importance to the resilience both of their ecological systems and their socio-cultural identity.

The Jalq'a farmers I studied and learned from during the course of a year in Bolivia's southern *puna* have not, of course, kept the outside world at bay. Nor have they always wanted to. Their tale is a complex one of cultural resistance, cultural change and cultural decline all in one, not surprising, perhaps, given their ability to entertain dual, indeed, multiple realities (Nash 1979). The Jalq'a women, men, and children I met are for the most part active agents in the change process, a people in transition faced with, but not avoiding, choices to participate in or resist the trappings of modernity. They are a flexible people of generous spirit; but they do not suffer fools on their own turf gladly.

Engagement with the development community and the Western world on less familiar turf appears, however, to have shaken that confidence. Within this new development arena, the terms of exchange privilege the more powerful outsiders. Having lived for so long where the few Westerners who dared to tread on their soils entered as landlords with orders not options, the socio-economic, political and cultural perspectives of those offering a *helping* hand are not well understood. Mistakes that weaken their control over their futures have been made and, for many, regretted, particularly the decision to buy into a commercial agricultural system that robs their children of the native potato varieties their grandparents left as their legacy. And when it comes to the critical intercultural education required for the negotiation of better terms of exchange with developers from the dominant society – information and negotiation skills to exercise the authority they need to manage this interaction well – their NGO companions are letting them down.

The *capacity building* programs their NGO partners are implementing on their behalf, while well intentioned, largely reflect the NGOs' knowledge systems, development recipes and their own preoccupations with power and political positioning. To implement its strategy for the building of a more just world, IPTK homogenized the indigenous identity of its program participants into that of a working class producer in urgent need both of market capital and Western structures of protest and political leverage. Convinced of its mission to feed the hungry in spirit and body, FHI has attached its still more paternalistic development package to an evangelical brand of Christian community. The third major non-governmental actor in their lives, UNICEF, is

failing in its more substantive attempt at intercultural praxis by spreading its program and resources too thin. The training, monitoring and follow-up needed to deliver on its intercultural objectives are simply not in evidence. In practice, all three agencies are applying a stagnant interpretation of cultural revitalization in their field programs, focusing more on its etic rather than its emic characteristics. Caught in the ethnocentric cultural warp characteristic of the broader development community, these NGOs are paying insufficient attention to the deeply rooted skills and knowledge systems of the people they are hoping to assist. Rather than build on the systems already present like ecological complementarity, they begin with the assumption that something is missing and proceed to try to fill the void. Unlike their indigenous *compañeros*, they appear unable to handle multiple visions of the path forward. While there is recent evidence of change within IPTK and UNICEF should know better, training programs in this region are attempting to turn indigenous stewards of the demanding highlands into responsible Western citizens and farmers, and in the case of FHI, "God-fearing" evangelists.

There have been some truly positive benefits from their intervention. Staff with all three agencies can justifiably point to the improved health care and community infrastructure in these communities as solid examples. Movement toward greater crop diversification is also occurring. The recuperation and diffusion of the nitrogen-fixing and nutrient rich *tarwi* food crop is an especially welcomed addition to a farm family's fields. In my conversations and workshops with residents, these contributions were highlighted and appreciated. Participants also expressed considerable enthusiasm for reforestation initiatives, primarily thanks to IPTK's assistance. But the overall picture is not positive. Evidence of impoverished and unforgiving subsistence and semi-subsistence, including life expectancy rates five years below a national average (NOVIB, 1999:6) suggests that Western recipes for a better life are not yielding anticipated results. The new indebtedness among the members of credit associations linked to the "green revolution" agricultural system has, in fact, increased the stress levels of Ravelo's farm families. Paradoxically, it is the indigenous farmers from Chimpa Rodeo – a community with a twenty-year history of development assistance – that have incurred this indebtedness.

My research plan and protocol did not include an assessment of community resilience within Chimpa Rodeo and Mojón. But the more extensive application of ecological complementarity practices in Mojón raises an interesting question. Might this

less developed community be more resilient over the long haul, particularly if another disaster like the El Niño drought of 1983 were to rear its ugly head once again? As for the nutritional value of their increasingly Westernized potatoes, the Canadian situation is especially telling. A recent study commissioned by the Globe and Mail and CTV News reported that within the past fifty years, the average Canadian spud, "by far the most consumed food in Canada", has lost 100% of its vitamin A, 57% of its vitamin C and iron, and 28% of its calcium (Picard 2002: A1).

The harsh realities of unsuccessful programming, however disturbing, are not nearly as troublesome as trends that could impact on the longer-term resilience of these communities. However unwitting, rather than strengthening the knowledge needed to build resilience, NGOs are contributing to its decline. They are doing so in three important ways. First and most obvious are the addictions and dependencies on the products of Western knowledge systems that their interventions have encouraged. The accessibility of agrochemical inputs replaces the need to practice alternative, more sustainable disease and pest-control management. This lost knowledge can in turn weaken other related risk management strategies. Pest control systems, for example, often involve the intercropping of plants that, like the nutritious *tarwi* legume for example, are also of use to a family's nutrition and subsistence economy. Second, and still more problematic, is the decreased opportunity to practice, and consequently maintain, traditional knowledge systems because the fecundity of the land has diminished. Increasingly addicted and degraded soils limit the land's capacity to respond to the cultivator's careful stewardship. Several of my research informants reported that even though they want to recover their traditional potato varieties, their soils might not be healthy enough to allow them to do so. On this issue, the IPTK agronomists working with these farmers agree. The recuperation of soil fertility is essential for the recovery of the plant genetic diversity of the crop that has earned these Jalq'a farmers their *Papero* nickname. At long last, they are researching and promoting soil management strategies that will hopefully turn things around.

NGOs are not, of course, the only development actors responsible for this environmental decline. A complex combination of factors have influenced this erosion, not the least of which is a history of government policy favouring resource extraction and the interests of the urban center over environmental conservation and the interests of

peasants on the periphery. But these NGOs must accept their share of responsibility for the environmental degradation that complicates the indigenous farmers' ability to manage their production in more sustainable ways.

The third factor is far more complex. It is poorly understood not only within these development agencies but also within the larger development and academic communities, and thus is not easily reconciled. It relates not so much to the messages and practices development workers carry and encourage, but to the logic and methods they use to deliver those messages. The literacy, community planning, and agricultural extension training programs these NGOs offer are generally built on language-based, and often literacy-based, modular curricula. They follow the step-by-step, unit-to-unit, instrumental approach their Western trainers use to problem-solve. For indigenous peoples dependent on knowledge systems that are anything but linear, sequential, compartmentalized, or documented, this instrumental framework could, if absorbed over time, prove harmful to their original knowledge base. Several of the scholars highlighted in my research have effectively questioned the validity of occidental learning theories that place linear, language-based logic at the centre of knowledge production and transmission, particularly for indigenous peoples managing complex ecosystems (de Voogt 1996; Ross 1996; Stairs 1994; Borofsky 1994; Street 1994; van der Ploeg 1993; Warren and Rajasekaran 1993; Leavitt 1991; Dandler and Sage 1985:38). Bloch (1994:279), as noted, goes still further in his critique of the link between language, literacy and concept formation, proposing that for humankind in general "the performance of complex practical tasks... *requires* that it be non-linguistic". Berkes, Colding and Folke (2003:2) argue a related point about the failure of conventional Western educational packages to appreciate and respond to the complexity of the natural resource systems to be managed. Yet, with too few exceptions, such as the pioneering work of members of the COMPASS network (Haverkort and Hiemstra 1996), these packages of Western logic, including those offered within a more participatory framework, are precisely those delivered to indigenous peoples. Even when attempts are made to champion and conserve indigenous knowledge systems, the principles of Western science are often used to explain it. In this "scientization of indigenous knowledge", to repeat Agrawal's (1999:179) claim, the knowledge is easily sanitized, robbed of its original context, meaning, spiritual dimension and value.

Western intellectual imperialism is, in short, considerable and insidious, even in a humble adobe classroom of a highland village. The indigenous participants in my study demonstrate a considerable resistance to this instrumental logic. However, if persistent, unchecked and increasingly delivered to a generation with longer exposure to public school education, these occidental-style *capacity-building* programs could contribute to the irony of all ironies – the erosion of capacity to deal with natural resource systems that are layered, unpredictable and full of surprises.

To be fair to these particular NGOs, their positivistic approach to their training programs is not the product of original perspective. They operate within an international development assistance paradigm that too often treats indigenous peoples as a simpler, monolithic *other*, as if they lacked the knowledge and capacity to move ahead on their own. The first item of any community development plan “worth funding” is *capacity building*, so convinced are the plan’s funders about the need to improve the community’s *human capital* – a now fashionable term for knowledge that betrays capitalism’s cozy relationship with international development. Thus, while more and more development professionals have learned the hard lessons of *top-down* development intervention, with some genuinely seeking to place the marginalized at the center of the development process, the majority do not acknowledge their own ethnocentrism or the outsider-insider power dialectic that influences not only the skills they hope to *transfer* but the logic and methods they use to deliver them. The failure of IPTK, FHI and UNICEF to practice the empowerment messages they preach is hardly unique.

Failure to champion alternative knowledge systems and “place the last first”, to repeat Chambers’ (1983) oft-quoted development adage, should not automatically be interpreted as intentional or malevolent cultural and intellectual imperialism. For the most part, the NGO actors in Chimpa Rodeo and Mojón appear committed and hopeful. They work in challenging conditions within an unstable and potentially threatening political context. In the case of a local organization like IPTK, they cannot easily pull out. Even their own institutional survival is not secure. Funding is, at best, only assured for a three-year stretch at a time. I also met many field workers who had developed respectful relationships, at time friendships, with program participants, often working “well beyond the call of duty” when additional effort was called for. It would be a serious mistake to fall

into the trap of painting these NGOs as a monolith of homogenous perspective and approach. Or to forget the demands and complexity of the services they perform.

The communities I studied also made many favourable comments about some of their NGO *compañeros*. Participants in leadership training activities reported considerable appreciation for the organizational strengthening workshops they had participated in. But this concept of strengthened organization is again based on occidental systems that will ultimately push indigenous participants towards acculturation into Western ways. Given the considerable barriers to full-fledged citizenship in a mestizo-run world, the best most participants can hope for is second-class residency within the dominant society, as the injured indigenous agricultural extension worker I cited in Chapter Six suggested about his temporary unemployment experience in nearby Sucre. Chimpa Rodeo and Mojón's NGO supporters talk the talk of empowerment, diversity and rights, some more effectively than others; however, their reluctance to invite Indigenous leaders onto their key decision-making bodies betrays application of local empowerment strategies that are ultimately hesitant and self-serving.

There is evidence of limited power sharing with participating communities through committee work and the community consultation attached to municipal planning and policy development, particularly within IPTK's and UNICEF's programming. Members of the Farmers' Union are also mobilized to exercise their rights as candidates and citizens in a Western political framework. Yet, once more, the terms of participation and the rules of the game are defined by outsiders unable to read the cultural and intellectual currents of people schooled in alternative ways of knowing. The intercultural literacy skills and practices of the national, international and multinational institutions I observed merited a failing grade. Thus, in addition to highlighting the failure of these NGOs to recognize and build on the ingenuity of existing indigenous knowledge systems, I have also proposed an alternative model for interaction between community development agencies and indigenous communities, one that I have called intercultural reciprocity.

Theoretical Implications

To recap, intercultural reciprocity is a work-in-progress model for interaction that draws on the strengths and lessons learned from interculturalism as practiced in Latin America, participatory action research, and cooperative conflict transformation. It calls

for power sharing, two-way education, consensus decision-making, the valuing of alternative knowledge and beliefs systems, the use of accessible research and planning tools that consider these alternative systems, an openness to change and compromise, strategic alliances, and an attempt to develop a shared vision both for the common good and the good of the commons. These components are, in turn, a reasonably comfortable fit with the principles underlying social resilience as illustrated in Table XXII. Inspired by ecologists, but increasingly discussed within international development circles (Swedish Ministry of the Environment 2002), social resilience is a concept that captures the symbiosis of cultural, social and ecological integrity at the heart of a just and vibrant community.

Like resilience theory, one particularly attractive feature of an intercultural reciprocity model to guide community-based development programming is its rooting in a view of knowledge that focuses on its dynamic, inter-relational, and interconnected character. While participants engaged in intercultural reciprocity need to experience some tangible benefit of the interaction fairly early on, this model emphasizes the importance of the relationship – on interaction that provides a solid opportunity to understand both the other's perspective and the interconnectedness of human experience. Full reconciliation of the dialectic between peoples with very distinct worldviews is unrealistic, indeed unnecessary. The negotiation of more equitable and informed interaction will eventually foster change of benefit to both the insiders and outsiders.

For many indigenous peoples, these ideas about how we come to understand and work out our relationships with others and with our natural environment are hardly revolutionary ideas, having developed their belief and knowledge systems through careful attention to the interconnectedness of all living, non-living and spiritual entities. As Andean indigenous peoples teach us with their concept of *pacha*, humans must negotiate their space with other beings through bargaining based on respect and understanding of their own vulnerability.

TABLE XXII INTERCULTURAL RECIPROCITY'S RESILIENCE PRINCIPLES

Intercultural Reciprocity	Resilience Principle
Analysis of power imbalances and commitment to power-sharing	Risk Reduction and Tight Feedback Loops
Selecting manageable programming to initiate the relationship	Risk Reduction and Tight Feedback Loops
Openness to change and compromise	Flexibility and Action for the Collective Good
Valuing of diverse knowledge systems and use of alternative research and planning tools	Diversity and Modularity
Two-way education that seeks to understand the insider knowledge of community process and the knowledge of the outside opportunity structure	Risk Reduction and Tight Feedback Loops
Intracultural education and dialogue to ensure the less powerful are united, informed and thus have greater leverage; that the more powerful understand the benefits of cooperation.	Modularity and Risk Reduction
Consensus decision-making, shared governance and shared accountability	Risk Reduction, Redundancy and Tight Feedback Loops
Cooperation on a strategic vision of mutual benefit	Flexibility and Action for the Collective Good
Establishing strategic alliances	Risk Reduction and Modularity

An approach is only as solid and helpful as those charged with its implementation, however. Leaders and representatives from indigenous communities and development agencies with a sincere interest in the building of resilient community must commit to the time, learning and resources it takes to shape intercultural reciprocity into a tool for worthwhile change. In the case of Chimpa Rodeo and Mojón, IPTK's recent shift to a more participatory community development framework and to agricultural extension work that is beginning to challenge reductionist science is an encouraging step in the right direction. Management's openness to outsider critique and the presence of skilled and thoughtful field staff within this partner bodes well for the application of intercultural reciprocity should decision-makers wish to explore its possibilities.

If IPTK proves to be seriously interested in the application of intercultural reciprocity, however, it will need to shift its approach, beginning with a commitment to place its partners' indigenous identity and knowledge systems front and centre in their development programming. The agency will, of course, also have to commit to advocacy alongside its indigenous partners that, in the first instance, supports the broader application of this power sharing model in the region and, in the second, helps their indigenous colleagues to establish a system of control over the operations of those whose approach could undermine its application. This latter task will not be easy when dealing with organizations like FHI whose funding pockets are deep and tied to a vision that runs counter to the objectives of intercultural reciprocity. Support from colleagues like UNICEF should be considerably more straightforward.

Residents of Chimpa Rodeo and Mojón face daunting assignment as well. Their leverage is now paradoxically in their numbers and rights as union members and constituents within Western governance structures. They will initially need to use this leverage and system to obtain a solid foothold when they enter intercultural dialogue and negotiation. They will also need to draw on their consensus decision-making skills to present a united position vis à vis their NGO partners or others offering assistance.

Recommendations: A Grounded and Steady Trek Forward

In Chimpa Rodeo and Mojón, and the many indigenous communities around the world struggling to navigate through the twenty-first century with dignity, the time for intercultural reciprocity, anchored in the valuing of participants' capacities and potential contributions, is ripe. In light of mounting forces against this tide, it is urgent. Their indigenous citizens have the right to demand such process. Committed NGO supporters, like IPTK, have the capacity, if not the responsibility, to undertake it. In the initial phase, given the need to break tired patterns of interaction, residents might be best advised to request the assistance of co-facilitators from outside their particular area and from outside their NGO partner, one indigenous, one Western, both knowledgeable communicators, mediators and animators. Local advisory committees, with representatives from both the community and the NGO, should, in turn, be formed to guide these facilitators and to serve as representatives at the negotiating table when smaller exchanges are more appropriate. In keeping with the fore-mentioned intercultural reciprocity principles, it might also make good sense to identify a manageable and tangible program initiative to launch this process. With respect to Chimpa Rodeo and Mojón, programming that facilitates the regeneration of native potato varieties might be a good place to start. That way those wary of "all talk but no action" will be engaged and the more troublesome kinks in the systems can be ironed out.

Given the pilot, experimental nature of intercultural reciprocity at this stage, international sponsors of this work will initially have to take a small leap of faith when deciding to support such a program, forgoing their insistence on pre-defined results. Once the system is up and running, they should be invited to learn about its challenges and potential contributions, possibly during an evaluation workshop after the first year of operation. When and if a pilot initiative has demonstrated its value, with the more obstructive problems resolved, support for the expansion of intercultural reciprocity to other communities should also be considered.

The implementation of the successful model for interaction between Western and indigenous peoples who choose to, or are forced to, interact together will be arduous. There will undoubtedly be many lessons learned and much movement to and fro. But the "leaps and bounds" approach of occidental privilege has never been the way of indigenous peoples, particularly the Andean highlander. For sustainable livelihoods and

healthy and resilient community, it is time to negotiate a more grounded, steady and respectful trek forward. The following reflection from a gathering of Zapatista *compañeros* from Chiapas, Mexico captures this intercultural journey extremely well:

Dignity is a bridge
It needs two sides that, being different and distinct, become one in
the bridge
Without ceasing to be different and distinct, but ceasing already to
be distant.
When the bridge of dignity is being made,
The us that we are speaks and the other that we are not speaks.
On the bridge that is dignity there is the one and the other.
And the one is not more or better than the other, nor is the other
more or better than the one.
Dignity demands that that we are ourselves.
But dignity is not just being ourselves.
For there to be dignity the other is necessary.
Because we are ourselves in relation to the other.
And the other is other in relation to us...
Dignity, then, is recognition and respect,
Recognition of what we are and respect for what we are, yes,
But also recognition of what the other is and respect for that which
is the other...
So dignity is the tomorrow.
But the tomorrow cannot be if it is not for all, for those who we are
and for those who are the other...
So dignity should be the world, a world where many worlds fit.
Dignity, then, is not yet.
So dignity is yet to be.
Dignity, then, is struggling so that dignity eventually be the world.
A world where all worlds fit. (in Bühler 2002:6)

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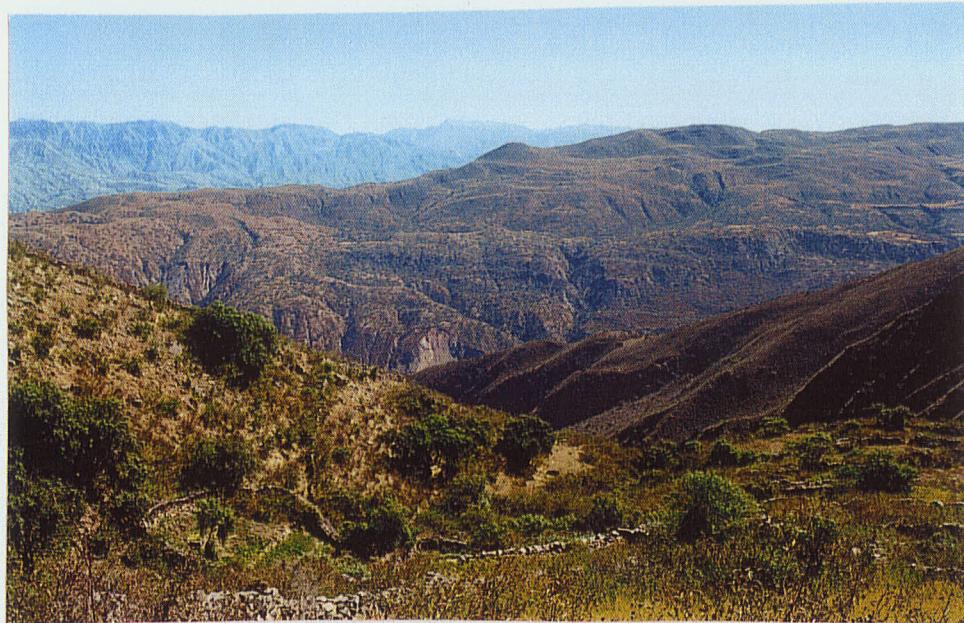
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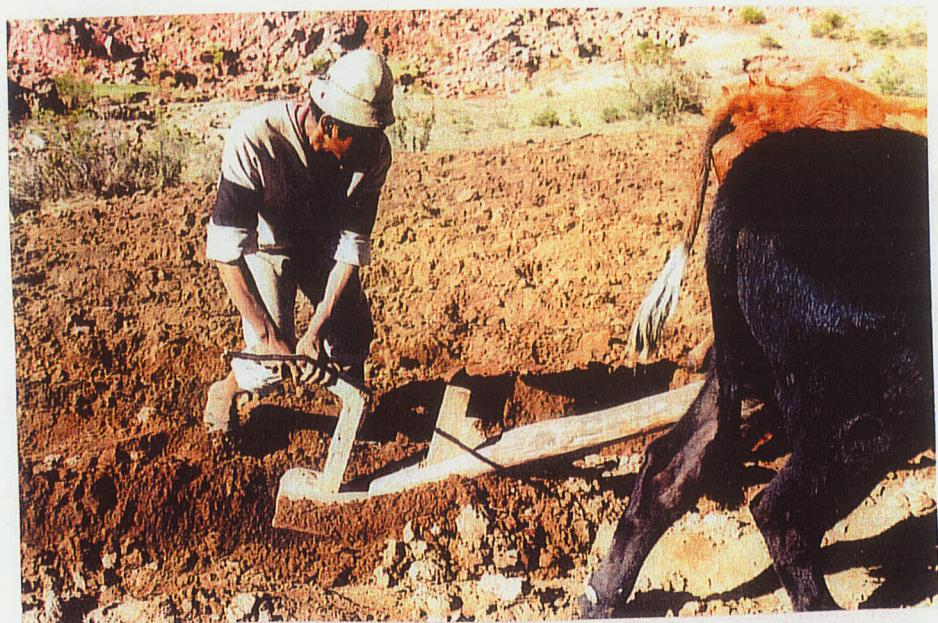
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Appendix One:
Snapshots of Chimpa Rodeo and Mojón

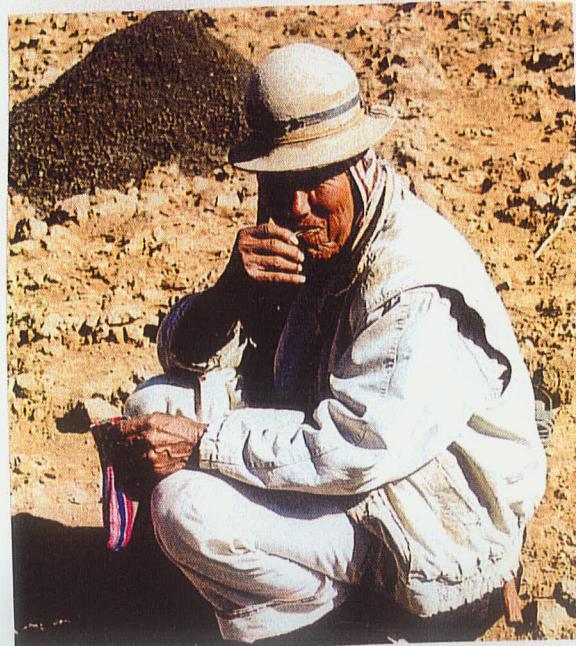
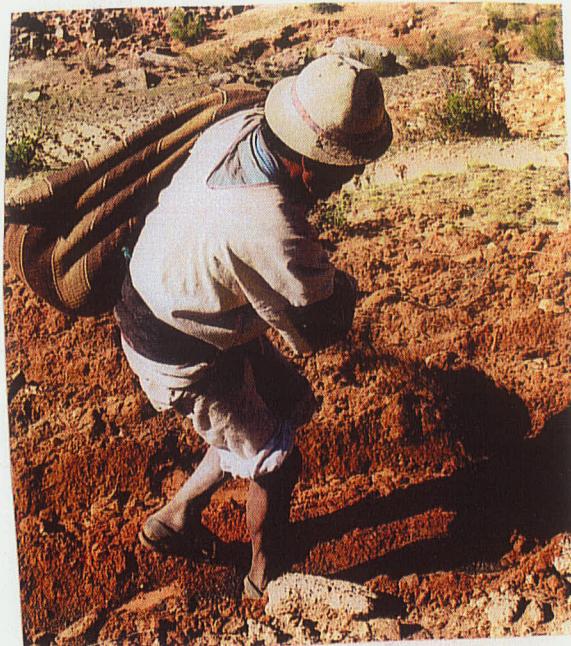
Appendix One:



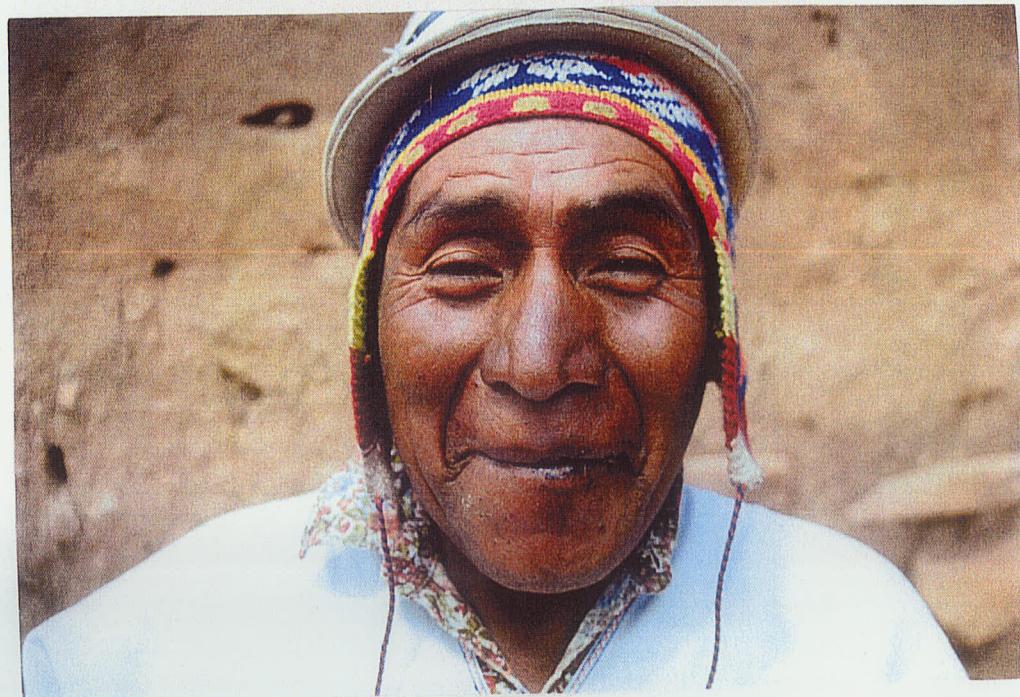
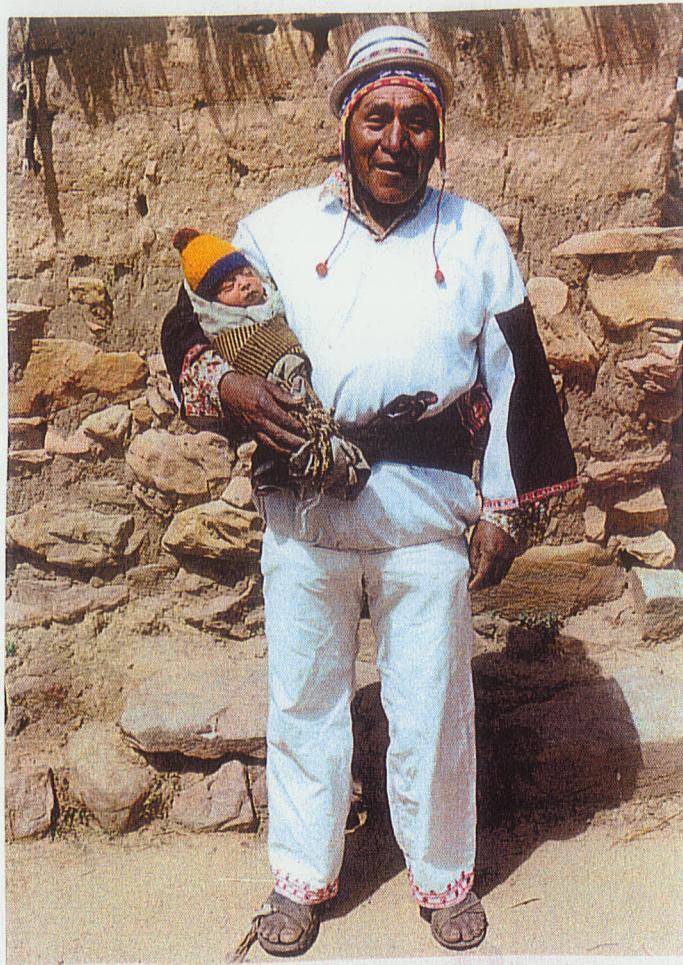
The Beauty and the Beast of the Andean Highlands: Landscapes Near Mojón



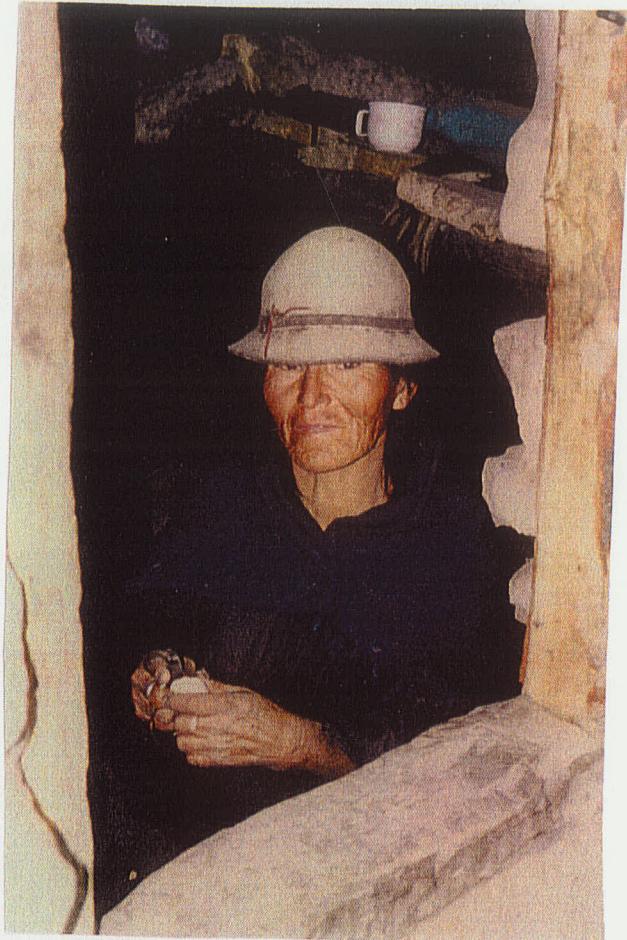
Paperos of Mojón



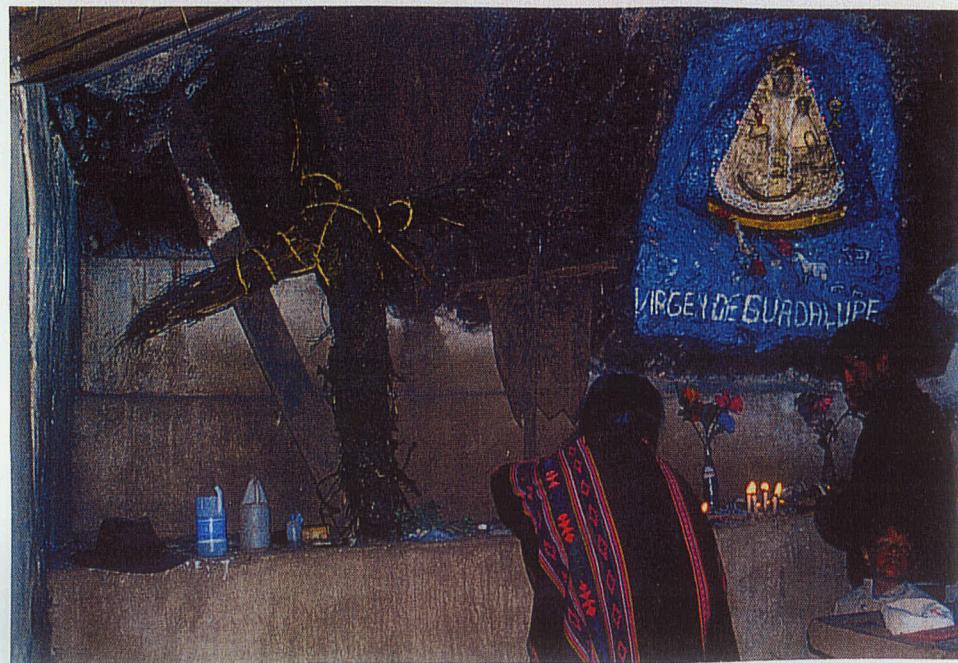
Coca Chewing and Hard Work Go Hand in Hand



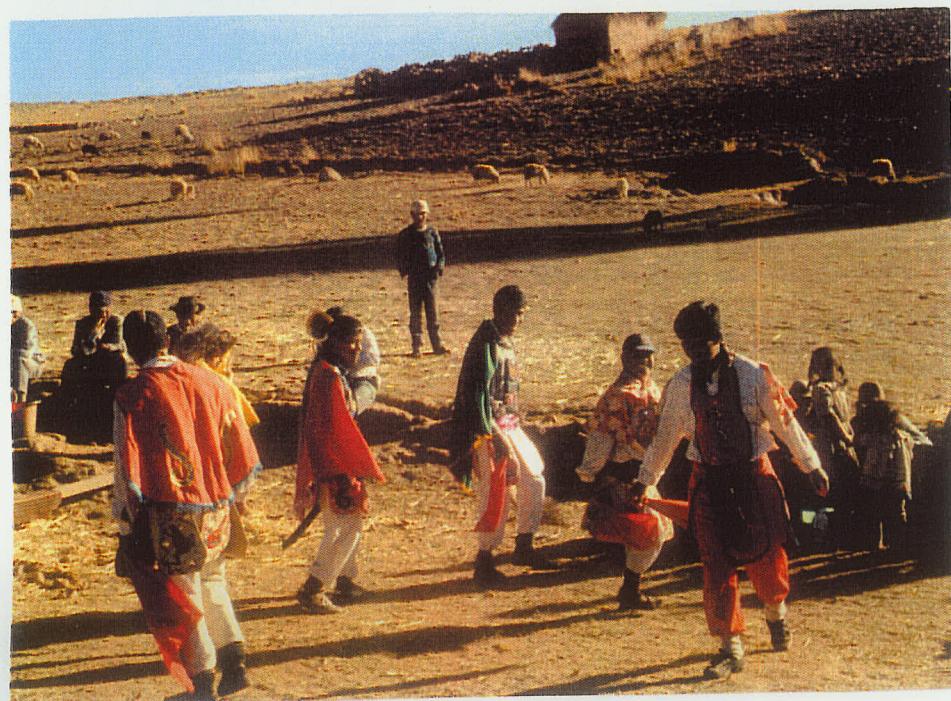
A Proud Grandfather and a Proud Jalq'an



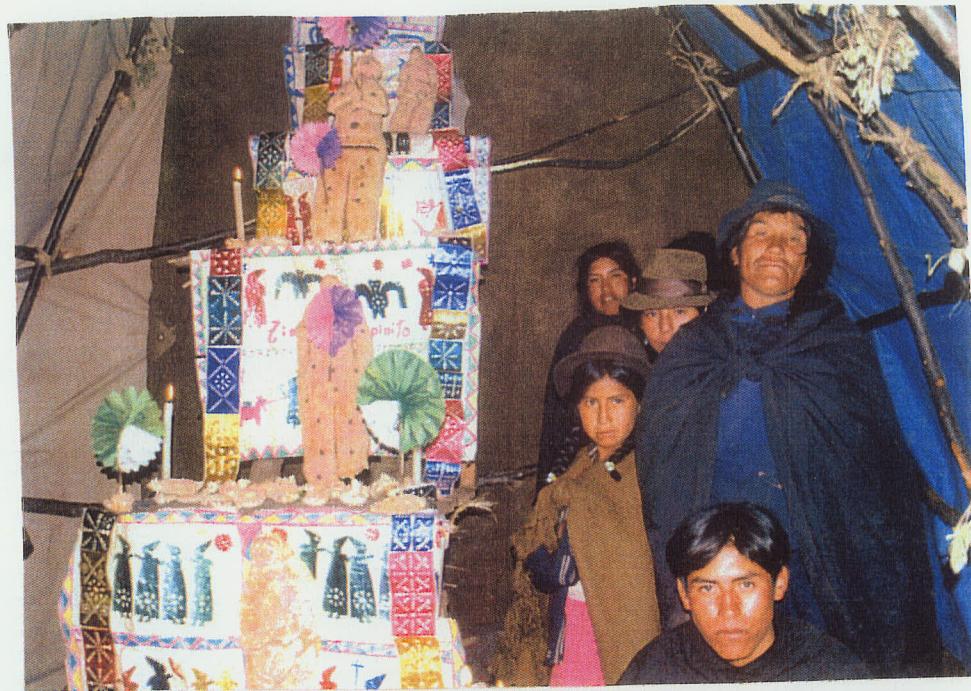
Jalq'a Women: Strong and Determined



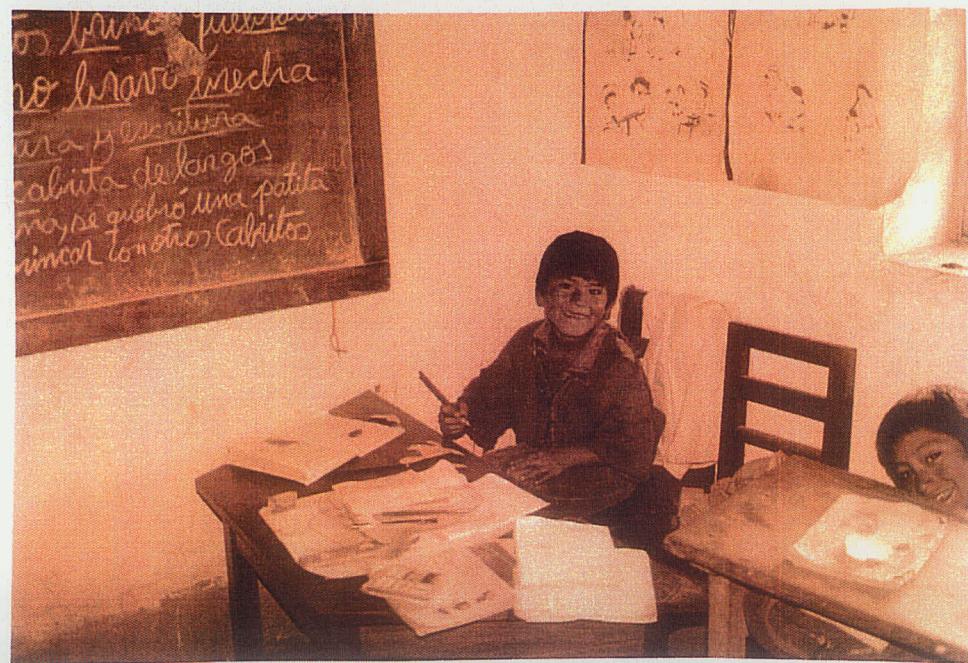
Honouring Our Lady of Guadalupe in Chimpa Rodeo



Devil Dancers in Chimpa Rodeo



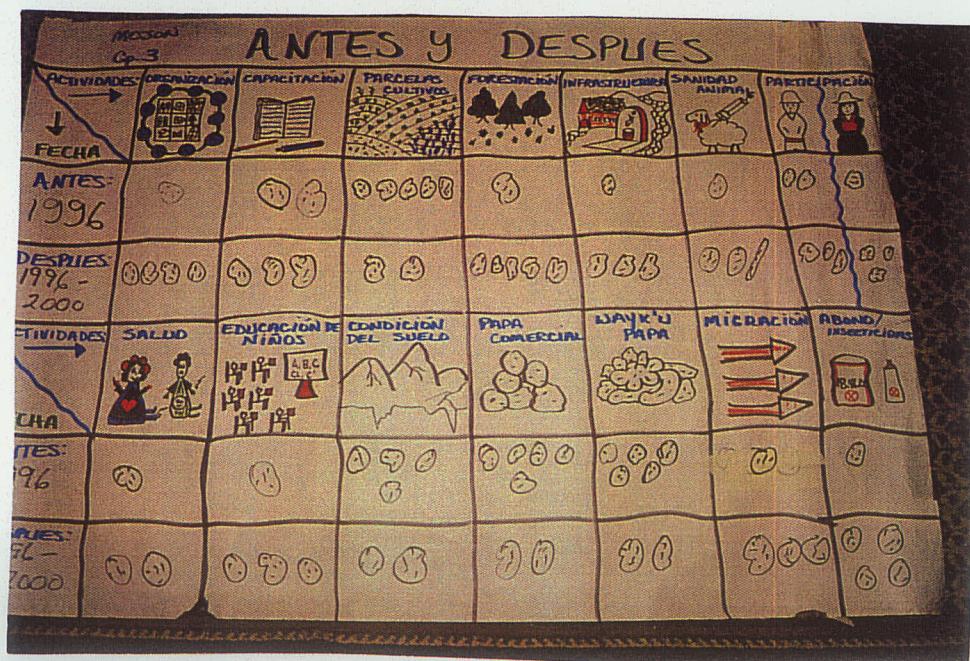
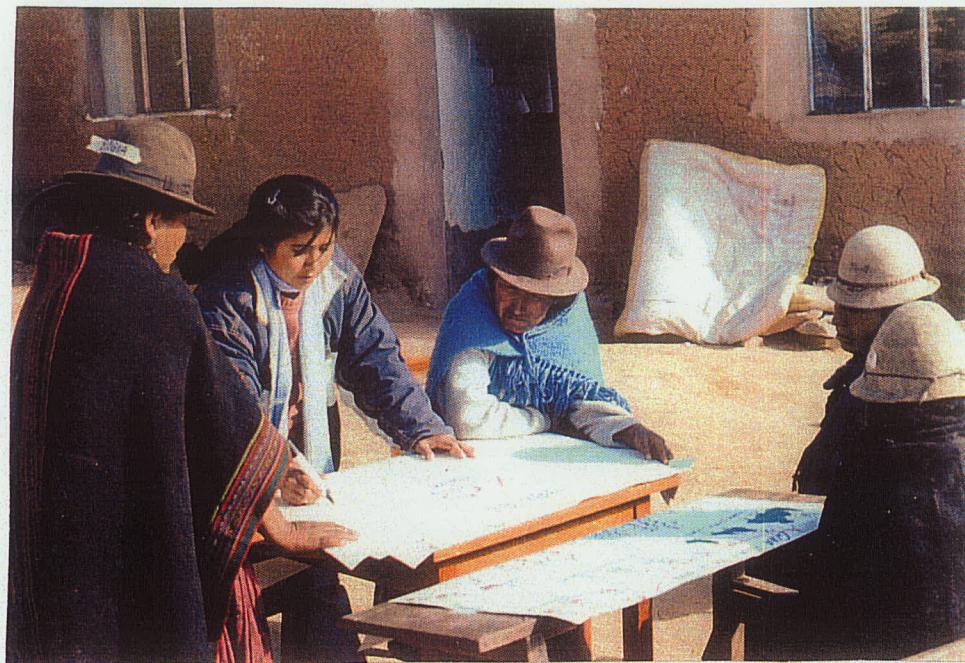
Commemorating All Souls' Even in Mojon



School Days in Mojón



PRA Days in Chimpa Rodeo



Before and After PRA Exercise in Mojón

Appendix Two:

Reflections From the Field

Literacy for Commerce Ravelo, July 8, 2000

The Ravelo skies are a brilliant blue as I navigate the makeshift cobblestone lane to the NGO field station. I move to a shaded strip of sidewalk to avoid the fire of the midday, mountain sun. My eyes shift from the peeling walls of an adobe house in my immediate gaze to the office. Standing at the gate is a Jalq'a farmer, his distinctive white bowler-like hat in his callused right hand and a torn scrap of wrinkled paper in his left. He looks nervous and anxious, a little impatient. When he sees me, he is obviously pleased, though to me he is a complete stranger. He immediately shows me his piece of paper. On it I read a few scribbled numbers. These are the prices he has been quoted for the two cattle he butchered that morning. But he wants to know if they are fair and tells me the price per kilo he should get. "Could I please do the calculation?" He tells me their weight and hands me the stub of a lead pencil. I multiply the data at least three times, feeling a sense of responsibility that draws his anxious look into my eyes. He shakes my hand in thanks and turns to leave. I shake my head in wonder and turn to thoughts of the complexity of the literacy question!

Eve of the Day of Our Lady of Guadalupe Chimpa Rodeo, September 8, 2000

After several failed attempts to reach Cornelio on Ravelo's single Entel telephone to inquire about his availability to serve as my interpreter, I am heading solo to Chimpa Rodeo. I will participate in the Fiesta de La Virgen

de Guadalupe without my regular translator, no intermediary, no one to help me find a place to stay if Don Angel's family is unable to house me. I was half hoping that I might not be able to reach Cornelio. I am anxious to discover the most popular annual festival of the region on my own. I have been told that the event unites not only Chimpa Rodeo's residents in celebration but, in light of their chapel's legendary significance, residents from Jalq'a communities throughout the region. This auspicious occasion is also the preferred date for marriage. Ravelo's Catholic priest will join several Jalq'a couples from the surrounding area in holy matrimony during a mass in the chapel on Saturday afternoon, once he has issued each couple a marriage license.

I arrive in the late afternoon to find my regular hosts able to house me. Angel is already at the festivities but eighteen-year-old Lucia is home and willing to serve as my new interpreter during conversations with her mother, Desideria. They seem genuinely pleased to see me and to have me participate in this festive occasion. My small gifts of sardines, pasta and marbles for the boys appear to be much appreciated. I leave my belongings, a small knapsack and sleeping bag, on Lucia's bed, one she graciously gives up when I stay over. I grab my camera and flashlight and head up the hill to the open air festivities outside the community's small adobe community center.

When I reach the field, eight young men are in the midst of performing their devil's dance, their beautifully crafted masks causing beads of sweat to leak down their necks onto their colourful costumes. They dance in a circle to the sounds of a community band of drummer, charango player and two able pan flute performers. The dancers are anxious to have their photos taken so after shaking hands with the community leaders and exchanging greetings in Quechua with a few of my women friends, I snap away. Indeed, the interest all residents express in having their photos taken facilitates the production of a photographic record of events. Having received copies of photographs taken during previous visits, they trust that they will obtain their promised copy. I seem to have acquired the status of a photographer in demand. Since there do not appear to be any mirrors in the hamlet, I decide not to interpret this interest as a reflection of any special talent.

Off to the side of the circle, I photograph a recently butchered cow being expertly carved into roasts, steaks and chops. This is an especially important event since one of Chimpa Rodeo's own, twenty-two year-old Victor will be married tomorrow to his twenty-year old common-law spouse

of the past four years. The food for such occasion should be tasty and plentiful. There are many guests to feed. Several sheep have already been sacrificed. Their cleaned skins and rib cages have been hung to dry in the noonday sun, their intestines put to boil in a large stew pot and their blood smeared on Don Victor's face as well as the faces of the Padrino and Madrino for this festival, Don Eduardo and Doña Antonia. The sheep's blood, extracted only from a white male, has been painted on their faces to ensure that no disease enters their bodies or homes. The lattice of sinewy tissue on Eduardo and Antonia's hats will augur good fortunes as well.

Beside the kettle of hard boiling innards, there is a huge vat of potatoes and an equally large pot of cornmeal soup, the latter heated by placing extremely hot stones from the cooking fire directly into the soup. Sheep and beef are roasting above the slow-burning wood coals of a makeshift asado or bar-b-que pit. Several women have gathered to prepare the food, with each family contributing what it could. There should be enough to go around, although the crowd keeps growing given the arrival of visitors from outside the community. The few families with small greenhouses of adobe and plastic sheeting have also contributed lettuce. I regret not having brought food to contribute. Cornelio would have undoubtedly advised me to do so, never forgetting to contribute himself. But I do know that my gift of coca leaves will be much appreciated. Indeed, when I do pull out my bag to drop quarter handfuls into cupped hands, there is a rush to get some. Don Caspian tells the anxious to calm down and wait their turn. Chimpa Rodeo's seniors should be the first to receive their share.

As dusk turns into a moonlit night, the young devil dancers pull onlookers into the circle to dance. My arm is tugged and I join in, working hard to catch a rhythm that feels rather awkward at first. After several dances, food is served. Much to my expected dismay, my plate arrives with a healthy helping of sheep's intestines. I eat a small piece that to me tastes like stewed elastic, then manage to pull it from my mouth and onto a dog's salivating tongue without others having taken notice. I eat as much as I can of the mound of potatoes and slabs of tough, extra lean meat remaining on my plate. I then fish a small plastic bag out of my pocket, explaining that I want to save some food to share with IPTK compañeros, an acceptable explanation for not having finished my meal.

I am also given chicha to drink quite frequently throughout the late afternoon and evening. I sip this fermented corn brew from tutuma shells placed in both my hands (in honour of the forthcoming union of the bride and the groom). I sip it gingerly, concerned not so about inebriation since it

is not terribly strong, but instead with the particles of dirt floating on the surface. Pachamama gets a particularly generous offering from me before each sip until one of the women observes my extravagant splash. She reminds me that I need only give Pachamama a drop or two. So I resign myself to a probable short course of antibiotics after my return to Sucre.

Drinking shots of 80 to 100 proof, home-brewed alcohol is another matter altogether. I simply can't handle this more potent distillation. I accept the small cup, wet my lips, and again give Pachamama a big slurp. Since the shots are considerably smaller, this strategy works reasonably well. Like being asked to hold a hot brick with one's bare hands, I pass the shot cup onto another before it is once again filled. Given residents willingness to share what little they have, I haven't the heart to turn down any of this generosity. I have thought of feigning illness or suggesting that my religion forbids meat and alcohol. But in the end I decide that such a simple demonstration of appreciation should not be passed up.

The meal is over and it is time to prepare for the community parade down the hillside to the chapel. The Madrino and Padrino will lead the parade with a community banner announcing Don Victor's impending marriage. Each host is taken into a separate room for sprucing up and, I suspect, a bit of sobering up. It has been a long day of celebration already. The hosts are finally ready. They lead the parade, followed by five women holding hands and dancing joyously behind them, occasionally weaving their snake-like chain into a circle. A woman grabs my arm and I am pulled into the chain and danced down a gully then narrow mountain path along with the rest of the crowd. While I must stoop to hold their hands, they laugh at my occasional tripping on a loose rock or rubble. I have my hiking boots on, after all, and they wear only their simple ojotas. Music is naturally our constant companion. Chimpá Rodeo's band accompanies our march down the hillside and when we arrive at the chapel, I discover that there are bands there from other communities, each taking their turn at serenading the crowd. The music will continue until dawn, I am told.

There are no formal proceedings tonight. Instead, people file quietly into the chapel to light a candle and pray. I take my turn, eager to visit this legendary small chapel and to view the painting of the Virgin and her son. I am somewhat awed when I finally enter. This humble memorial to honour Mary stands in such sharp contrast to the ornate, often garish, monuments I discovered in Sucre's numerous Catholic Churches. The altar is flush against its mountain wall. Upon it are a plain cross of thick tree branches, fastened with leather twine, and the boulder with the painting of the

Virgin, made visible by the flickering light of numerous small white candles. The painting is still vivid, its colours likely touched up from time to time. I light a candle below the painting and hear a woman whisper words of devotion to Pachamama. After leaving the chapel, I sit with the women on the chapel steps for a while. Lucia is not around to help with translation and the Spanish-speaking men are deep in their own conversations. So we smile a lot once my basic conversational words run out. After an hour or so, my eyes begin to sting and water, likely from something in the smoke of the several small bonfires keeping participants warm. I decide to head back up to Lucia's room, also anxious to capture this rich experience in my field journal. I meet Desideria on her way down to the chapel. Her children are all settled now and she can finally join the others. Her eyes, arms and few words of Spanish ask me why I have decided to head back before midnight when most women will journey home. I indicate that I am tired and bid her good night in Quechua. The music is still blaring in the distance when I put down my journal, zip my sleeping bag up to my ears and switch off my flashlight. Will I dream of the devil's dance, doves and revelations, Pachamama, or Desideria, a tireless Jalq'a mother finally able to relax and celebrate?

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### **Don Victor's Wedding**

**Chimpa Rodeo, September 9, 2000**

Cornelio arrived this morning with regrets that he had not received my messages until earlier that morning. He has been asked to serve as one of Don Victor's witnesses so he will attend the marriage service that, he notes, will be the first of three masses. The other two services will be offered in honour of the festival of Guadalupe and to baptize children. A sole priest will lead this trilogy of worship. He will certainly have his work cut out for him.

As it turns out, the priest, one of the Ravelo Parish's two clergymen, began his day with a very heavy load. Since 9 am this morning, from a small table at the back of Chimpa Rodeo's small community center, he has been issuing marriage licenses to eager young couples, twice as many as anticipated. Since The Festival of the Lady of Guadalupe has fallen on a Saturday, today is an especially auspicious day to wed.

With the encouragement of my local friends, I gently push through a small crowd at the entrance of the building and enter. The room is

completely jammed. I squeeze my towering frame to a spot behind the priest to observe the proceedings. Don Victor, his bride-to-be and their witnesses are there, close to the front. The Spanish-speaking groom-in-waiting who is first in the queue is asked if his parents were legally married, although no legal evidence is requested. Next, he is asked to recite the "Our Father" followed by the sign of the cross, as evidence of his Catholic upbringing. The groom and his bride then sign a certificate, with a thumbprint if necessary. The young couple's witnesses also sign. Their form is then stamped and signed by the priest. The women, many unilingual and unable to read and write, observe with nervous, often frightened eyes. During several of the "Our Father" recitations, the grooms are cut off before the prayer's completion. Aware of the unusually large number of couples this year, the priest wastes little time. Don Victor completes the requirements. He seems extremely relieved when he holds his certificate firmly in hand.

In contrast to my trek down to the chapel the previous evening, my journey there in broad daylight is sure-footed. As I approach, I see families and friends distributed throughout the meadow surrounding the chapel, dotting the countryside like families at a community picnic. As I draw closer to the clusters of kin, I see that in each there is a young woman in a white cholita wedding outfit - a shiny white pollera that sits just above the ankles, a satin blouse, a polyester white cardigan and a muslin veil that falls to the edge of her pollera. She holds a small bouquet of white carnations and her ojotas have been replaced with new white sandals that cover white kneesocks or stockings. Her young partner looks rather stiff in his Western business suit and a white shirt. He wears a tie but I notice that many other have preferred an open collar. The men's footgear is varied, including running shoes, black leather shoes and ojotas. Later, in the chapel, I discover that a few couples have chosen to don newly woven traditional Jalq'a outfits, infinitely more impressive to my Western eyes.

In the daylight I notice that there is a small, very shallow river running through this land. Since I am the only Gringo in evidence and do not want to attract too much attention, particularly to my camera, I cross the river over a log bridge and find a quiet perch above the bank with a good view of the increasingly large gathering. On my way, I pass several small merchants selling refreshments and small snacks, including a vendor from Ravelo who recognizes me. She calls me over and we chat for a while. This is one of her best days of the year, she informs me.

As three o'clock approaches, I make my way down to the chapel, having observed Don Victor and his party move in that direction. There are now at least 20 couples waiting to be married, so only they and their witnesses are allowed in the church. Victor has asked me to photograph the ceremony so I am allowed in, although I feel a little guilty as I glance at the faces of excited relatives lining the chapel's exterior walls. The doors, they are assured, will be left open for those in hearing distance.

Over an hour has passed and the priest still fails to arrive. One young woman looks like she is about to faint from the heat, although she will not fall far given the shoulders of others pressed against hers. For a moment, my mind wanders to my days in India where packing people into small spaces was not out of the ordinary. Someone passes a bottle of water to the young woman and she seems to revive a little, although her panicked look remains. The priest and his lay assistants finally arrive. They are an hour and a half late. I subsequently hear that the priest stopped for lunch after signing the last license, likely not wanting to faint from hunger himself. The ceremony begins with group confession and a lecture to the young couples. In Spanish and Quechua, the men are told to be sure to fulfill their responsibilities as providers, to work hard and avoid excessive drinking. The women are instructed to be good ambas de casa or housewives and reminded how the white they wear symbolizes purity. They must stay pure, he admonishes them, and remember that the union they will enter is until death draws them apart. Divorce will be out of the question. The men are spared the lecture on fidelity.

A short mass ensues, hurried no doubt by the increasingly obvious need for fresh air. The noise of the bands outside has forced the closure of the doors. It would otherwise drown out the vows. The priest moves to each of the couples lined in two rows near the altar to witness and bless their vows. When it is Victor and Angela's turn, I squeeze over to a spot at the side of the altar to take photographs. Once the white candle they each carry in their hands is lit, symbolizing the hearth, and a single gold chain symbolizing their lifelong bond is placed over their heads to join them together, they repeat their vows. Their candles are handed over to their witness when it is time to exchange rings. They each take their turn at placing a gold wedding band on their partner's right hand, the ring of course a universal symbol of their long term commitment. Coins to represent future wealth and herbs to represent good health are also held in trust by the witness, passed back to the bride and groom once the priest declares to all that "what God has brought together, no one shall separate".

A kiss to cement the union appears to be left for a more private moment. Simply being the center of attention seems enough cause to blush.

I take a huge gulp of fresh air when we all spill out of the chapel. Squinting through the blinding sunlight. I notice that the numbers have increased. Possibly as many as four hundred people colour the landscape. Several of the wedding parties now appear to have their own small band as well as devil dancers. There are also some boom boxes blasting pop tunes from worn cassettes. While there are two more masses ahead, the parties have begun. Flirtatious young men, emboldened with chicha and beer shout at the Gringa to take their picture. I avoid their calls and wander over to Victor's wedding party. Cornelio is there. After a congratulatory handshake, I bid them farewell. They don't need the Gringa to help them to celebrate. I prefer not to be the resident photographer for all these groups. There are a few more calls to join the party as I climb back up the mountainside, some from friends who have just arrived. I wave goodbye and trek back to Angel and Desideria's home, content to have had the opportunity to experience a very meaningful segment of the Jalq'a story.

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### All Souls' Eve

Mojón, November 1, 2000

All Souls' Eve and I have finally made it to Mojón. The trek took me at least an hour longer than usual since the shortcut I tried to take led me to another valley, down the wrong ridge into another village. I had to climb still further down to the river to get my bearings and then climb all the way back up a ridge to find the road to Mojón. The brutality of the midday sun was an especially humbling reminder of my vulnerability in the mountain world of the Jalq'a. The shortcut had seemed so straightforward when I was last guided through it. How eagerly we fool ourselves about our human omnipotence! These sculptured mountain ridges refuse to let me lower my guard.

My truck ride in from Sucre to the foot of my hiking trail was also no picnic, although in hindsight rather more humorous. All Souls Eve and the beginning of the planting season immediately after the three days of festivity was drawing Sucre's temporary migrants back to their villages in droves. The flotas or buses were packed so tight there was barely room to breathe. I opted instead for a potato truck. It was surprisingly empty when

I jumped into its wooden carriage but full to the brim when the driver put it into gear for the three-hour trip ahead. By the time we rattled onto the potholed dirt road outside Sucre's city limits, human, animal and agricultural cargo occupied every inch of the floorboards, except for a tiny patch that riders had cleared in a flash when they realized that a young toddler was about to lose the contents of his breakfast. Seated on my knapsack, my knees were jammed tightly against one of the several bags of the popular fertilizer 18.40.60, compliments of the Japanese government's aid program. A young woman was snoring comfortably on my left shoulder. The comparatively new tires on this truck left me somewhat reassured that it could handle the sharp curves of the hairline mountain switchbacks. I was considerably less comfortable with thoughts of what might happen to the full canisters of cooking gas several riders used as seats. "If this truck hits a particularly stubborn pothole, an unexpected boulder or heaven forbid, another vehicle", I thought, "it would be game over!" Fortunately when the cramp in my legs felt almost unbearable, about half way there, we stopped for a bathroom break. I chose to stand for the rest of a journey that proved otherwise uneventful.

And now as I head to the Mojón cemetery with Elvira and her children to witness the rituals of All Souls Eve, I find myself in almost complete darkness. The overcast moonless night befits the fast-approaching visitation of the dead. My small flashlight, low in battery fuel, barely lights the narrow footpath and I stumble several times on its many small boulders and rocks. I am careful not to drop the large bag of coca leaves I purchased during our stopover in Ravelo, knowing the importance of an offering to dead souls and their living offspring. I only hope that I have carried enough.

I arrive at the cemetery, trading the dark for a brightly lit walled cemetery. Inside the stone fencing, this graveyard has been transformed into a candle-lit tent community. One of the many hosts that evening greets us at the gate and grants us permission to enter. Elvira warns me to enter with my left foot to protect me from the forces of death. "Asi no moremos", she advises. ("This way, we won't die!)

Surrounding each of the participating family tombstones are cave-shaped tents made of bent branches that are covered with a dust-coloured canvas. The opening is wide and inviting in the front and narrow and stooped at the back. There is enough room in each for two handfuls of family and friends. Ornamentation is saved for the tombstones themselves. Drab, flat slabs of cement have been turned into giant wedding cakes, three-tiered altars

wrapped in paper with colourful hand-drawn or cutout images of a spirit world and figures much like those of the creation-chaos cosmos in their traditional weavings. There are crosses in these images, however, acknowledging the Catholic root of this celebration, betraying again the post-colonial fusion of Catholic-Indigenous imagery. The candles that offer both light and heat are of all shapes and sizes, the largest, at least a meter tall and 10 centimeters in diameter, purchased no doubt from the stalls of candle merchants that line the gates of Sucre's many Catholic cathedrals. Most of these candles are painted with large, gold crosses.

Family members of the deceased that have returned to give spiritual counsel to their offspring sit on either side of the altar. They mourn, reminisce, pray and give offerings to their recently-deceased grandparent, spouse, brother, sister or child as well as to their more distant ancestors and of course Pachamama. Coca leaves are the most important offering, but chicha and alcohol are also sprinkled onto the tombstone and Pachamama's soils. For this occasion alone, mast'akus, dolls made of unleavened bread, eyes blackened with wood charcoal, are placed on the altar to feed the hungry spirits. As with all auspicious occasions, cigarettes are smoked to placate the devil. The men in particular consume large amounts of chicha and alcohol throughout this dusk to dawn memorial. Participation is not restricted to one's own tent. Every tent is visited to ensure that all spirits, many of them of near and distant relatives, are shown their due respect.

As outsiders, albeit invited ones, my Quechua guide, Elvira, and I decide not to overstay our welcome within this otherwise private, community-based memorial. Despite repeated invitations to spend the night, we leave the increasingly boisterous gathering quietly, slowing making our way down the ever-darkening path home. We agree to return at dusk to witness the close of these ceremonies. Unfortunately, despite my diplomatic but repeated requests that we get a move on in the early morning, we leave for the cemetery rather later than I had hoped. When we approach the cemetery, the cemetery has been stripped of its festive mantle and a final group of mourners is heading down the path. One of my friends shouts from a distance for me to join them. I hesitate because by now the level of intoxication is such that the chatter will be incessant and I will likely not have a chance to see the cemetery in its pre-festive state. I decide to run to the cemetery for a quick look before joining him and the others. I dash ahead, step quickly through the gate, snap a few photographs since there isn't time to linger, then head back down the path to the group.

As I approach my friend, I grasp the error of my Western way, indeed

gasp with an almost audible breath. I want to kick myself. Of course, this is a sacred place and I need permission once again to enter. Damn! The others seem rather oblivious to my actions but I overhear my friend and his wife questioning my arrogance. I have betrayed their trust. I apologize profusely, explaining that I had assumed that the permission granted the night before would suffice. But in my split-second decision to satisfy my curiosity, I became just another Gringa researcher, out to get what I needed. There will be little that I can say or do in the limited time left of this research year to rebuild that trust. For a second time in twenty-four hours, I have lost my bearings and I am forced to appreciate my vulnerability in the world of another.

My friend and I do speak again from time to time during my last six weeks in the region. But he appears to avoid me and no longer shows the enthusiasm for my work he once displayed. In his now cautious eyes, I am repeatedly reminded of the precariousness of the insider-outsider relationship.

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Appendix Three

ENCUESTA CON FAMILIAS DE CHIMPA RODEO Y MOJÓN
(Benchmark Household Survey)

NOMBRE DEL INVESTIGADOR: _____

FECHA: _____

FAMILIA: _____

COMUNIDAD: _____

SINDICATO: _____

AFILIADOS: _____

FECHA DE INGRESO: _____

CARGO(A): _____

ESTRATO:

SUBSISTENCIA:

INTERMEDIOS:

EXCEDENTARIA:

INFORMANTES CLAVES [durante la(s) entrevista(s)]:

PADRE MADRE ABUELO ABUELA

[Generación: 1= abuelo/a; 2= padre/madre; 3=hijo/ hija 4= nieta/o]

NOMBRES	EDADES	NIVEL S ESCOLARES	IDIOMAS		GENERACION (1/2/3/4)
			Nulo: (N)	Poco: (P)	
			Regular (R)		
			Bien (B)		
				QUECHUA	ESPAÑOL

1. CONDICION SOCIO-ECONOMICO**Tamaño del tenecia (tierras cultivadas + en descanso)**

Puna: _____ Has. Cultivadas _____ Has. En Descanso = _____ Has.

Titulo en que nombre: _____

Valle: _____ Has. Cultivadas _____ Has. En Descanso = _____ Has.

Titulo en que nombre: _____

Como ha obtenido?**De donde eran antes:**

Esposo; _____ Esposa: _____

Tipo de Casa: (tarea del investigador)

Adobe Techo de paja de estaño de teja

Cocina mejorado Piso

Condición:

Mala Regular Buena

Otra Characteristicas Notables:**Salud De la Familia: (ultimo año)**

Enfermedad	Quien	Cuanto Tiempo	Planta medicinal	Tratamiento

Hay Huerto Horticula: Si: _____ No: _____		Carpa Solar: Si : _____ No: _____	
Que Hortalizas: _____ _____			
Hay Pileta: Si: _____ No: _____ Distancia de la casa: _____			
Hay Latrina: Si: _____ No: _____		Con Tasa: Si: _____ No: _____	Se Usa: Si: _____ No: _____
Si no, por que: 			
Alimentación Diaria: Desauno: Almuerzo: Cena: Otro:		Alimentación Dias Especiales (Fiestas) Desauno: Almuerzo: Cena: Otro:	

Observaciones del Investigador Sobre Nivel de Salud y Nutrición:

Migración:

Lugar	Quien	Cuando	Cuanto tiempo:

Hay migrantes permanentes:

Quienes:

Hace cuantos años:

Trabajo Fuera Del Predio:

Tipo	Quien	Donde	Dias Por Año	Forma de pago	Ingreso por dia

Capacitación

Curso	Tema Principal	Quien	Tiempo	Institución

Fueron Util? Si <input type="checkbox"/> No <input type="checkbox"/>	Por Que Si o No:	Quieren Otro? Si <input type="checkbox"/> No <input type="checkbox"/> Cual:		
Alfabetización;				
Curso/Nivel	Quien	Cuando	Tiempo	Insitucion
Fueron Util? Si <input type="checkbox"/> No <input type="checkbox"/>	Por Que Si o No:	Quieren Continuar? Si <input type="checkbox"/> No <input type="checkbox"/>		
Hoy dia es mas importante hablar:		Quechua: <input type="checkbox"/> Castellano: <input type="checkbox"/>		
Hoy dia es mas importante leer/escribir:		Quechua: <input type="checkbox"/> Castellano: <input type="checkbox"/>		
Por Que:				
2. PRODUCCION				
CULTIVOS MAYORES:				
Cultivo y hace cuento tiempo	Cuanto Has.	Rendimiento por ha. (2000)	Si se vende/ precio por unidad	Unidades Vendido (2000)

Cultivos Menores		Usos:					
Fertilidad del Suelo:		Como Se Sabe?					
Ganado Mayores: <table border="1"> <tr> <td>Tipo</td> <td>No.</td> <td>Estado:</td> </tr> </table>					Tipo	No.	Estado:
Tipo	No.	Estado:					
Ganado Menores: <table border="1"> <tr> <td>Tipo</td> <td>No.</td> <td>Estado:</td> </tr> </table>					Tipo	No.	Estado:
Tipo	No.	Estado:					
Sistemas de Produccion: <table border="1"> <tr> <td>Yunta: Proprio:</td> <td>Aquilado:</td> <td>Tractor: Aquilado de Donde:</td> </tr> </table>					Yunta: Proprio:	Aquilado:	Tractor: Aquilado de Donde:
Yunta: Proprio:	Aquilado:	Tractor: Aquilado de Donde:					

Mantas:		Individual:											
Rotación:		Rotación:											
Año 1. _____		Año 1. _____											
Año 2. _____		Año 2. _____											
Año 3. _____		Año 3. _____											
Año 4. _____		Año 4. _____											
Año 5. _____		Año 5. _____											
Años de Descano: _____		Años de Descano: _____											
División del Trabajo:													
Siembra	Aporque	Trat. Fit.	Cosecha	Selección	Cegado	Trillado							
H	M	H	M	H	M	H	M	H	M	H	M	H	M
Insumos:													
Descripción	Nombre		Cultivo		Monto/ costo	Utilizado		Resulta Bien Malo					
Producción Commercial:													
Variedad	Desde Cuando		Como ha obtenido			Calidad de la Semilla							
Precio por @ 1996	Precio por @ 1997		Precio por @ 1998			Precio por @ 1999		Precio por @ 2000					
Conocimiento de Especies Nativas de Papa:													
Quien en la familia tienen mejor conocimiento:													

Se experimentan con nuevas variedades o mejores formas de producir?

No Si Quien _____

Como:

Estan enseñando a sus hijos(as)?

Si

No

Por Que:

Hay vecinos con muchos variedades? Con buen conocimiento?

Les gustarian sembrar otra vez mas especies nativas? Por que si o no?

Caracteristicas mas importante para la producción de papa (1...5, con 5 lo mas importante).

Sabor	Tamaño/ Forma	Producción Rapida	Cocción Rapida	Resistencia	Posibilidad de Venta	Color

Aparte de las condiciones climaticas y del suelo, otras cosas mas afectan la producción?

Hay dias ideales para sembrar?

Hay dias ideales para cosechar?

Como se sabe si van a tener un buen año de producción? Hay indicaciones?

3. ORGANIZATIVO / CULTURAL

Grupo Etnico: Jalq'a **Otro** _____

Cual es la diferencia entre Jalq'as y llameros?

Cual es la diferencia entre la gente Jalq'a y la gente de la ciudad?

Fiestas de importancia en su comunidad: Ravelo: **Fiestas de importancia en Sucre:**

Cual de estos es lo mas importante?

Sus hijos conocen los bailes de su antepasados? **Sus hijos conocen las canciones de su antepasados?**

Si

No

Si

No

Ponen Ropa Tradicional:

Abuelo Abuela Papa Mama Hija(s) Hijos

Hacen Ropa Tradicional:

Abuelo Abuela Papa Mama Hija(s) Hijos

Hay organizaciones tradicionales?		Cuales	
Si	No		
Existian organizaciones tradicionales?		Cuales	Hace Cuantos Años?
Si	No		
Nietos(as) van a conocer su cultura Jalq'a:		Nietos(as) van a conocer su idioma Quechua como adultos?	
Si	No	Si	No
Hay iglesia?			
Si	No		
Le Gusta?			
Si	No		
Por Que:			
Su sueños mas querida para sus hijos(as)...			

Appendix Four

Sample Products of the IPTK-Facilitated Diagnóstico Rural Participativo (DRP) Chimpa Rodeo, July 1998

calendario de climas

Calendar of Climatic Conditions

Calendario de Migración y Fiestas

Grupo 3

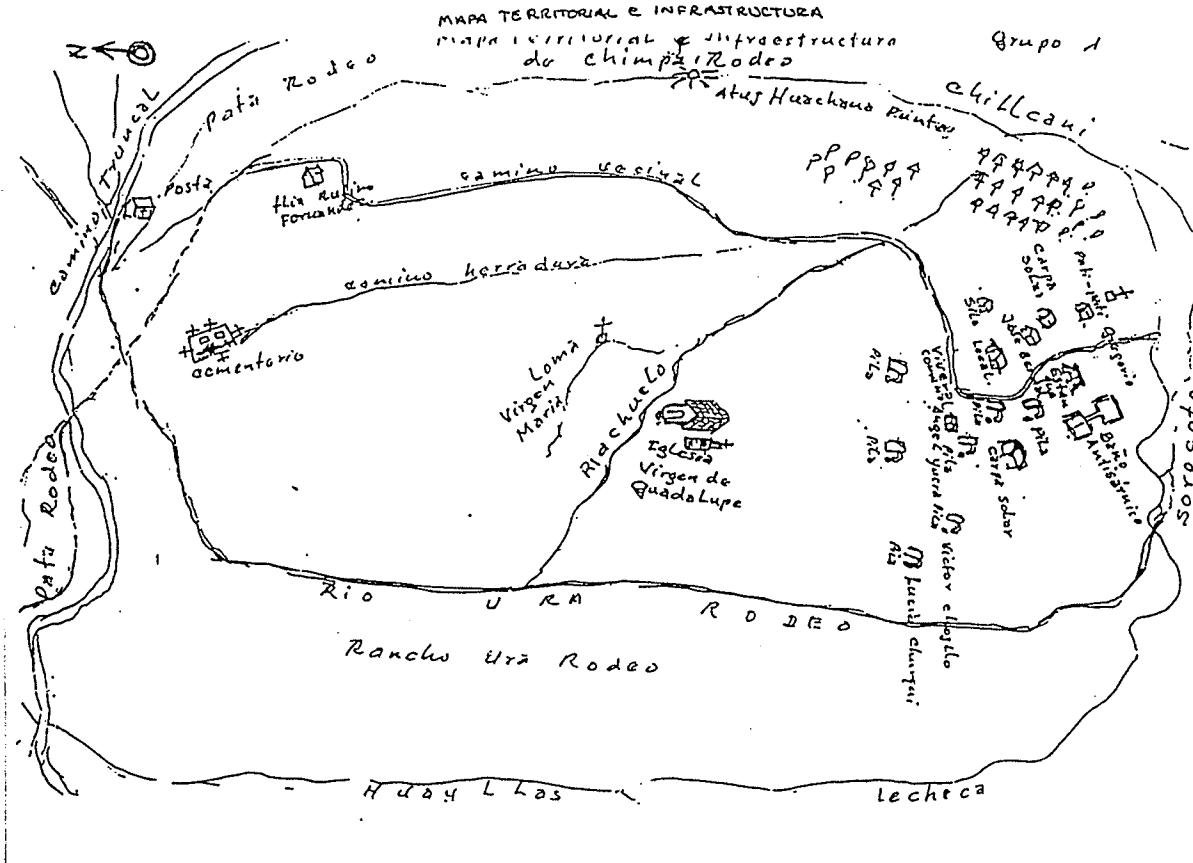
Lugar de Migración	Que hacen / mos.											
	Julio	Agosto	Sept.	Oct.	Nov.	Diciembre	Enero	Febrero	Märzo	Abril	Mayo	Junio
En Valle					Sembrar maíz	Aysay					cosecha	
En Valle							sembrar trigo				cosecha	
En Valle							sembrar cañizo				cosecha	
Zafra en Sta. Cruz	cosecha caña	cosecha Algodón										zeich Arroz
Migración de la gente al Valle					Gente en Valle			Retorno del Valle			Vuelven al Valle	Retorn del Valle
Fiestas		Santa Rosa 30 ag.					San Pedro tian 21 de E.					
Fiestas Importantes		zorritos Rosa 30 ag.	Nuestra Señora de Guadalupe		Todos Santos 1 Nov.		San Se- bastián		corpus Pascua			
Poco Importantes		6 Ag. 24 ag. Bartolo	Atara ta y San miguel.	0 tuvo.	San Andrés	Chajroto Santa Barbara	Agosto Nuevo		Casimiro (Nov. 1)		San Jesús	
Nada Importantes		Plato chunay							Gloria misia		Alma misia	

Calendario Pecuario

Grupo 2.

ANIMAL	A C T I V I D A D E S											
	Julio	Agosto	Sptm.	Oct.	Nov.	Dici	Enero	Febrero	Märzo	April	Mayo	Junio
Oveja			Montar o cruce	Esquila	bafos antidiártico	Quilleta o pene	Nacen					coster etón
Vaca		Venta		Nacen				Castrado naciente	consumo de carne	Vacunas		coster etón
Caballo	colocar retortas	Nacen	cruza- o trastornos	Trabajan y llevan carga							trillan	
Burro			Nacen	cruzamiento trastorno de carga	Castrado							colocar retortas
Cabra		quillpores		bano	cerdo antidiártico	crios					Nacen	coster etón
Chancha	Venta			Consumo carne	cruzamiento entre				Nacen	Vacunar		
Gallina	Venta	Pone huevos	Emplollo	Nacen	Venta				Pone huevos	Enferma	Pone huevos	
Pato		consumo carne	Venta	Pone huevos			Emplollo	Nacen				
Perro	cruza			Nacen		crias so copia o fa pollo y lech						
Gato	cruza		Nacen			crias so copia con pollo						

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Territorial and Infrastructure Map of Chimpá Rodeo

Appendix Five

SAMPLE BOLETA COMUNAL (COMMUNITY QUESTIONNAIRE) FROM THE RAVELO MUNICIPAL PLANNING MEETING OF OCTOBER 2000

NOMBRE DE LA OTB (COMUNIDAD)

RANCHOS

SECCION MUNICIPAL

CANTÓN

SUBCENTRAL ..

AYLLU

1 Población

¿Cuántas familias viven en la comunidad? Cuál es la población total de la comunidad (niños, hombres, mujeres, ancianos)?

No. Familias	Población Total

2 Infraestructura existente

¿Qué infraestructura (obras) existe en su comunidad?

¿Cuántas personas o familias se benefician de la infraestructura?

¿En qué estado se encuentra esta infraestructura?

¿Quién ha construido (institución, propio, municipio) y en qué año?

Infraestructura	Núm. familias beneficiadas	Beneficiarios			Estado			Quién ha construido y en qué año
		hombre	mujer	nino/a	Nuevo	Reg.	Malo	
Escuela								
Riego								
Agua Potable								
Vivero								
Molino								
Carpa solar								
Iglesia								
Cancha								
Letrinas								
Salón multifuncional								
Camino								
Posta sanitaria								
(otros)								
(otros)								

(Anotar número) (Anotar número)

(Marcar con X)

(Anotar nombre y año)

3. Producción Agrícola

¿Qué cultivos se producen en su comunidad, incluyendo frutales, por orden de importancia? (anotar en columna 1)

¿Para cada cultivo, que cantidad de semilla siembra una familia en un año regular? (anotar en columna 2)

Para cada cultivo, de dónde procede la semilla: propia, comprada y/o trueque? (anotar X en columnas 3, 4, o 5)

Para los cuatro cultivos más importantes, cuánto cosecha una familia en años normales? (anotar en columna 6)

¿Para los cuatro cultivos más importantes, cuánto cosecha una familia en años muy buenos? (anotar en columnas 7)

¿Para los cuatro cultivos más importantes, cuánto de la cosecha destina una familia al consumo propio, semilla, intercambio (trueque), pago de jornales (incluyendo trilla), subproductos (chuño, quiza, harina, otros), venta y forraje? (anotar en columnas 8, 9, 10, 11, 12, 13 y 14)

¿En caso de venta del producto, en cuánto se vende según la unidad indicada (anotar en la columna 15)

¿Anotar el lugar donde más frecuentemente se vende e intercambia el producto (anotar en la columna 16 y 17)

4. Fortalezas, Problemas y soluciones de la producción agrícola

¿Que aspectos buenos existen en su comunidad, y como lo aprovecharian estas cosas positivas? (columna 1 y 2)

¿Considerando todo el proceso de la producción agrícola -insumos, tecnología, enfermedades, rendimiento, empleo de mano de obra, venta, transporte etc.- qué problemas agrícolas tiene la comunidad ? (anotar en columna 3)

Y en qué soluciones se puede pensar para resolver los problemas? (anotar en columna 4)

5. Producción Pecuaria

- ¿Qué especies de animales se crían en su comunidad, por orden de importancia? (anotar en columna 1)
- ¿Para cada especie, cuántas hembras, criollas y/o mejoradas, tiene una familia? (anotar en columna 2)
- ¿Para cada especie, cuántos machos, criollas y/o mejorados, tiene una familia? (anotar en columna 3)
- ¿Para cada especie, cuántas crías, criollas y/o mejorados, tiene una familia? (anotar en columnas 4)
- ¿De cada especie, cuántas cabezas de animales una familia vende, intercambia o consume? (anotar en columnas 5, 6 y 7)
- ¿En caso de venta de las especies, en cuánto se vende según la unidad indicada (anotar en la columna 8)
- ¿Anotar el lugar donde más frecuentemente se vende e intercambia las especies (anotar en las columnas 9 y 10)
- ¿De cada especie, para qué actividades utilizan sus animales o qué utilidad tienen? (anotar en columna 11)

ESPECIES	1	2	3	4	5	6	7	8	9	10	11
	Número de Animales			Destino de la producción			Lugares venta/intercambio			Para que sirven estos animales	
	Hembras Criollas/mejoradas Número	Machos Criollas/mejoradas Número	Crías Criollas Número	Consumo Número/año	Trueque Número/año	Venta Número/año	Precio de venta (Bs.)	Lugares de venta	Lugares de intercambio		
Subproductos Pecuarios											
Lana de.....											
(Otros)											
(Otros)											
(Otros)											

6. Fortalezas, Problemas y soluciones de la producción pecuaria

¿Que aspectos buenos existen en su comunidad, y como lo aprovecharian estos aspectos buenos? (columnas 1-2)

¿Considerando todo el proceso de la producción pecuaria - insumos, tecnología, crías, enfermedades, empleo mano de obra, producción de productos pecuarios, pastoreo, venta, etc. - qué problemas pecuarios tiene su comunidad? (anotar en columna 3)

¿Y en qué soluciones se puede pensar para resolver los problemas? (anotar en columna 4)

7. Otras Actividades económicas importantes dentro de la Comunidad

- ¿En caso que se realizan actividades artesanales dentro de la comunidad, qué tipo de artesanía produce? (anotar en columna 1)
- ¿Cuántas familias de la comunidad se dedican a la artesanía, por actividad artesanal? (anotar en columna 2)
- ¿Y una familia cuánto produce por año y por actividad artesanal? (anotar en columna 3)
- ¿Por actividad artesanal, cuántos productos artesanales destina una familia anualmente a su uso propio, al trueque y/o a la venta? (anotar en columnas 4, 5 y/o 6)
- ¿En caso que se venden artesanías, dónde venden (incluyendo la propia comunidad) y a qué precio por lugar? (anotar lugares de venta en columna 7 y los precios en columna 8)

1	2	3	4	5	6	7	8
ARTESANIA							
Producción			Destino de la Producción				
Nombre del producto	Familias dedicadas Número	Cantidad de producción por año/número	Uso propio Número	Trueque Número	Venta Número	Lugar de Venta	Precio por producto Bs.
Tejidos					1 2		Bs. Bs.
Lijilla							
Ajus					1 2		Bs. Bs.
Ch'ullo					1 2		Bs. Bs.
Cama					1 2		Bs. Bs.
Vayeta					1 2		Bs. Bs.
Sombreros					1 2		Bs. Bs.
Abarcas					1 2		Bs. Bs.
Cerámica					1 2		Bs. Bs.
Instrumentos musicales : Charangos					1 2		Bs. Bs.
.....					1 2		Bs. Bs.
.....					1 2		Bs. Bs.

8 Otras Actividades Económica Importantes Dentro de la Comunidad

¿Dentro de la comunidad, qué otros trabajos se realizan jornalero, albañil, chofer, empleado público, tiendero, camionero, minero,etc ? (anotar X o nombre de la profesión)

¿Y cuántos hombres y mujeres de la comunidad se dedican a esa actividad ?

Ocupaciones	Nº de Personas		
	Hombres	Mujeres	Total
Jornalero			
Albañil			
Chofer			
Empleado público			
Tiendero			
Camionero			
Minero			
Presidiaria			
Promotor			
Motrijo			
..... (otras)			
..... (otras)			
..... (otras)			

9. Fortalezas, Problemas y soluciones de las otras actividades económica importantes dentro de la comunidad

¿Que cosas buenas existen en su comunidad, y como lo aprovecharían estas cosas buenas? (columna 1 y 2)

¿Considerando la artesanía y las otras actividades no-agropecuarias qud problemas tienen? (anotar en columna 3)

¿Y en qud soluciones se puede pensar para resolver los problemas? (anotar en columna 4)

1	2	3	4
Que cosas positivas tienen en su comunidad	Como los aprovechan estas cosas positivas	Problemas	Que Soluciones o Alternativas

10. Migración

- ¿A dónde migran la gente de la comunidad: al valle donde tiene tierra, a otras ciudades, al Chapare, etc.? (anotar en columna 1)
- ¿Por destino, cuántas familias de la comunidad han migrado definitivamente en los últimos 5 años? (anotar en columnas 2)
- ¿Por destino, cuántas familias de la comunidad migran por año, entre hombres y mujeres? (anotar en columnas 3 y 4)
- ¿Por destino, en qué trabajan los hombres cuando migran temporalmente? (anotar en columna 5)
- ¿Por destino, en qué trabajan las mujeres cuando migran temporalmente? (anotar en columna 6)
- ¿Por destino, cuánto dinero al año reune un hombre que migra temporalmente (anotar en columna 7)
- ¿Por destino, cuánto dinero al año reune una mujer que migra temporalmente (anotar en columna 8)
- ¿Y por destino, cuándo migran y cuándo vuelven a la comunidad los hombres y mujeres que migran? (anotar las fechas de ida y llegada en columna 9)

1 A qué lugar migra	2 Cuantos Migran Definitivamente	3 Cuántos migran temporalmente		4 A que se dedican cuando migran		5 Ingresos que perciben por efecto de la migración		9 Epoca Migracion Cuando migra y cuando vuelve (por destino)
		Mujeres Número	Hombres Número	Mujeres	Hombres	Mujeres Bajo	Hombres Bajo	
Valle								
Ciudad 1.								
Ciudad 2.								
....								
....								
Chapare								
....								
....								

11 Fortalezas, Problemas y soluciones de la migración

¿Que cosas buenas tiene la migración, y como lo aprovecharian estas cosas buenas? (columna 1 y 2)

¿Considerando la migración -temporal y definitiva- qué se deben mejorar para aumentar los ingresos de la migración (anotar en columna 3)

¿Y en qué soluciones se puede pensar para resolver los problemas? (anotar en columna 4)

1	2	3	4
Que cosas buenas tienen en su comunidad	Como los aprovecharia estas cosas buenas	Problemas	Que Soluciones o Alternativas

12. Problemas y soluciones a servicios básicos y otros (agua, luz, caminos, etc)

¿Considerando con los servicios básicos que cuentan actualmente, que problemas todavía tienen en su comunidad? (anotar en columna 1)

¿Y en qué soluciones se puede pensar para resolver los problemas? (anotar en columna 2)

1	2
Problemas	Soluciones Alternativas

13. Instituciones

- ¿Qué instituciones están realizando proyectos en la comunidad?
- ¿Y qué tipo de proyectos están ejecutando (Educación, Salud, Ayuda a la Producción, etc.)
- ¿Por proyecto, cuántas familias se beneficiando esas actividades?
- ¿Son niños, mujeres u hombres que se benefician principalmente con cada proyecto?
- ¿El desempeño de la institución dentro de la comunidad es Buena(B), Regular (R) o Mala(M)?

Instituciones	Que hacen (que proyectos)	No de Fa.niñas Beneficiarias	Beneficiarios			Calificación		
			hombre	mujer	nino/a	B	R	M
Iglesia Católica								
Yuyajapina								
FAO/HOLANDA								
Fundación Contra el Hambre								
Unión Bautista Boliviana								
CENATEC								
Plan Internacional								
IPTK								
Isalp								
Taypi Danida								
Federación Norte Potosí								
Cruse Llawi								
Eves Kallpa								
(Otra)								
(Otra)								

(Anotar nombres) (Anotar número) (Marcar con X) (Marcar con X)

ACTA DE REUNIÓN

En reunión ampliada llevada a cabo en la comunidad perteneciente a la Subcentralia de la sección municipal de la Provincia Chayanta, del Departamento de Potosí, en fecha del mes de del 2000, se ha llevado a cabo el llenado de la BOLETA COMUNAL de manera concertada entre todos los asistentes.

Para tal efecto, han participado mujeres y hombres, haciendo un total de participantes, siendo los mismos afiliados al sindicato.

El resultado de la reunión es precisamente la BOLETA COMUNAL, con todas la información correspondiente siendo la misma la expresión de todos los asistentes.

La presente reunión fue dada en fecha del mes de a los dos mil años.

Firman:

Appendix Six

GLOSSARY OF ACRONYMS AND NON-ENGLISH WORDS

ACRONYM	MEANING
ANED	Asociación Nacional Ecumenica de Desarrollo
ASUR	Antropólogos del Sur
CENAQ	Consejo Educativo de la Nación Quechua
CENDES	Centro de Estudios Sociales
CESATCH	Centro de Servicios Agropecuarios Técnicos
CIP	International Potato Centre
FIS	Fondos de Inversión Social
IBTA	Instituto Boliviano Técnico de Agropecuaria
IPTK	Instituto Politécnico Tomas Katari
MBL	Movimiento Boliviano de Liberación
MNR	Movimiento Nacional Revolucionario
PROANDES	Programa Andino de Servicios Basicos Contra la Pobreza (Andean Program to Combat Poverty through Basic Services)
PROINPA	Programa de Investigación de Papa (Potato Research Program)
PROSEMPA	Programa de Semillas de Papa (Potato Seed Program)
SEPA	Unidad de Producción de Papa
UNFPA	United Nations' Fund for Population Activities
UNICEF	United Nations' Children's Fund
WFP	World Food Program

SPANISH WORDS	MEANING
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Alcalde communal	Community mayor
Analfabetismo absoluto	Complete Illiteracy
Arriadero	Local leader an arriendo

SPANISH WORDS	MEANING
Arriendo	Colonial land demarcation that incorporated hamlets
Asistencialismo	Charity orientation in the delivery of development assistance
Autoridad maximo	Regional Union President
Boletas	Questionnaires
Buenas noches	Good night
Cabacera de valle	Lands on the hilltops of valleys that reach the puna baja
Calzuna	Pants named after underwear
Campesino	Peasant farmer
Cansado	Tired
Capa Criola	Landowner of mixed Spanish and Indian decent
Cerveza	Beer
Charango	Lute-like musical instrument
Chargas	Insect-borne disease found in the valleys
Clubes de madres	Mothers' Clubs
Compañeros	Comrades; Mates
Comuneros	Comrades; Friends
Consciencia Critica	Critical Consciousness
Convocación	Formal call to a meeting
Cultura	Culture
Curandero	Traditional faith healer
Diagnostico Rural Participativo	Participatory Rural Community Assessment
Dirigente	Union leader at the village level
Doble domicilio	Dual landholding
Enfermo	Sick
Excedentaria	Farmer with enough income for modest capital expenditures
Feria	Agricultural Fair
Iguales aunque diferentes	Equal yet different
Indio	Indian
Interculturalidad	Interculturalism
Lengua	Language
Ley de la Reforma Educativa	Educational Reform Law
Ley de Participación Popular	People's Participation Law
Llamero	Highlander who shepherds llamas
Mayordomo	Head arriadero
Medio Tecnico	Agricultural technician
Mestizo	Person of mixed Spanish and Indian decent
Minifundismo	Sub-division of lands among consanguineal kin
Municipio productivo	Productive Municipality

SPANISH WORDS	MEANING
Originario	Original resident
Papero	Potato farmer
Patria	Nation
Patrón	Boss
Pensión	Restaurant
Pobreza	Poverty
Puna Alta	Highlands above 3600 meters
Puna Baja	Highlands between 3200 and 3600 meters
Quimicado	Burnt
Saber Andina	The Indigenous Knowledge of the Andean Peoples
Sana	Healthy
Syndicato	Union
Tierra virgin	Virgin soils
Vichuna	Beetle-like insect that carries the chargas disease
Viva la diferencia	Here's to being different
Yunta	Pair of oxen
Pasto Cancha	Pasture field
Poncho	Cape

QUECHUA WORDS	MEANING
Almilla	Jalq'a dress for women and shirt for men
Awayo	Baby blanket
Axsu	Article of women's clothing draped over the backside
Ayllus	Multi-tiered Indigenous governance structure
Ayni	Labour exchange mechanism between individuals and families
Ch'alla	Offerings to Pachamama
Ch'umpi	Waist-belt
Chicha	Fermented corn brew
Chojlla	House
Faena	Communal work party on a community initiative
Juq'ullu	Jalq'a hat
Khurus	Wild animals
Llijlla	Shawl
Manta	Cropland managed collectively
Minka	Communal work party on behalf of a local family
Ojotas	Jalq'a sandals
Pachamama	Mother Earth: protector and the goddess of fertility
Pallay	Designs in Jalq'a weavings

QUECHUA WORDS

Trueque
Tutma
Yah'wah
Yuyay Jap'ina

MEANING

Bartering
Andean plant like the callabasca plant
Hot chili sauce
Name for the UNICEF's literacy program
that means to take or seize the knowledge