Chapter 3
Exploring an Indigenous World in the Bolivian Amazon: The Case of the Tsimane'

Abstract This chapter provides the biogeographical, historical and socio-cultural background to the empirical case that follows in Chapter 4. I argue that this detailed account is necessary in order to provide a suitable context for understanding and interpreting the ensuing metabolic findings. For this endeavour, I am going to start with a general description of the indigenous Tsimane' territorial setting, and move on to a description of the natural and cultural landscape that shapes their world. The following section gives an overview of the most decisive historic events surrounding their ethnic community and entails an account of the peoples' growing exposure to outsiders. The final part of this chapter deals with the social sphere of the Tsimane' world. This involves a description of population trends as well as introduces the reader to life at the household as well as community level.

3.1 Introduction

Still today, the Tsimane' are an indigenous community that largely sustains itself from farming, foraging and trade. Despite contacts with outsiders throughout their course of history, it was not until fairly recently that their modes of subsistence have started to undergo changes. According to our theoretical framework, as societies develop, they change their social metabolism and the way they interact with and transform their natural environment. While the transition study framework is guided by the overall intent of identifying common systemic and metabolic characteristics between individual social systems, this book is equally concerned with discovering the individual opportunities and constraints of Campo Bello, the Tsimane' village community we are going to analyse in the forthcoming two chapters. This chapter to a certain extent provides the spadework for reaching both goals; it firstly provides the local environmental, historic, socio-cultural and political setting against which our empirical case study can be interpreted. On the other hand, this background information serves as useful when comparing the systemic features of different local systems. In such light, the overall aim of this chapter is to illuminate

L. Ringhofer, *Fishing, Foraging and Farming in the Bolivian Amazon: On a Local Society in Transition*, DOI 10.1007/978-90-481-3487-8_3,
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the Tsimane' world from different angles; all of these are small but essential stones in the multifarious mosaic that constitutes their world. With these features slowly unfolding, I aim to gradually build a sound foundation upon which we can firmly base the sociometabolic analysis of the following chapters.

This chapter comprises four sections. It opens up with a general description of the Tsimane' territorial setting and its biogeographical features and then moves on to examine the parallel existence of the natural and cultural landscape surrounding the Tsimane'. Both domains are intricately merged and determine to a large degree the use of natural resources. A historic detour then guides the reader through a passage of growing exposure and contact with outsiders. It is a history that spans from early sporadic encounters to more permanent and increasingly difficult relationships with outsiders and points to the different social and ecological changes that were triggered along the way. In a final section, I foreground and examine the social sphere of the Tsimane' world, encompassing demographic trends and the peripatetic nature of settlement and community life. Such a rather detailed ethnographic sketch, so I believe, deepens our understanding of the system-specific challenges and opportunities of contemporary non-industrial communities which are currently all – albeit with different intensities – undergoing transition processes.

3.2 The Tsimane' Habitat

The Tsimane' inhabit a huge territory in the Beni lowlands covering 1 degree of latitude (from 14°5′ south to 15°5′ south) and 2° of longitude (between 66°5′ and 67°5′ west). It is some 50 km to the east of the first foothills of the Andean mountains to where it extends from gallery forest areas into the ample savannas of the Llanos de Moxos, providing a mosaic landscape of forests, open woodlands and savannah formations (Ellis and Araúz 1998). Two mountain chains dominate the area: Marimonos and Eva Eva. Their territory is bounded on the southwest by the Rio Quiquibey and the Rio Matos-Dumi, Rio Chevejecure and Rio Cuverene on the west. The Rio Maniqui that cuts its winding way along the outskirts of the municipal town of San Borja can be considered the very heart of the Tsimane' territory. It is along the meanders of this river and its numerous tributaries where most Tsimane' communities are found. There, they are somewhat sheltered from the outside world, yet close enough to the savannah area that extends from the town of San Borja. From the air, this riverine micro-region reveals a few inhabited clearings in the midst of the dense gallery forest, sometimes more, other times less visible to the human eye. Others but by far fewer communities are found along the Yucumo-Rurrenabaque road and the Rio Curibaba, Rio Matos, Rio Quiquibey and Rio Apere, all of which become the Rio Madeira after its confluence with the Rio Mamoré along the northeastern fringes of the Beni department. Crossing the border to Brazil, the Rio Madeira eventually becomes an important tributary to the Rio Amazon.

Today, the area inhabited by the Tsimane' is legally divided into 3 indigenous territories: the Indigenous Tsimane' Territory (TICH), the Multiethnic Territory (TIM) and the Indigenous Territory of Pilón Lajas (TILPA). The Tsimane' Indigenous Territory was titled in 1990 and has carried the official status of *Tierra Comunitaria de Orígen* (TCO) since 1997. The latter is the product of a long and complex process and recognises the official use of the natural resources by the Tsimane' within the political boundaries of their territorial land. The TICH covers a surface of 401,322,805 ha, an area half the size of Corsica. The vast majority, in fact almost 90% of the Tsimane' population lives within the boundaries of the TICH, while the remaining 10% dwell in the TIM where they share their land rights with other indigenous groups like the Movimas, Yuracaré and Mojeños[1] (Tobías 1998).

3.2.1 Biogeographical Features

This part of the Bolivian Amazon basin that is home to the Tsimane', harbours a huge variety of soils and soil compositions. More than their mostly non-indigenous neighbours, the Tsimane' are mindful of the topographical and pedological diversity of their territory. General empirical understanding of their surroundings is rooted in centuries of observation and agronomical experimentation which has provided them with a detailed knowledge base of the various components of their environment. Let us look at soil, for example. The Tsimane' typically associate a specific type of soil with its specific texture, while soil colour and to a lesser extent, drainage tend to be used as secondary modifiers for soil classification. In their taxonomic system, soils are classified into 7 primary categories that sometimes take on regional variations (Piland 1991). The clay-dominated *jak pirij* (sticky earth) and *jak bojca* (slippery earth) constitute the first grouping; *jak tsincus* (black earth) has a thin and dark humus surface horizon and is quite popular for its fertility; *jak tsijtyi* soil types with their high alkalinity content are often used as salt licks by game animals; *jak chuñus* (red earth) is usually found in the upstream Rio Maniqui on high river banks, while *jak jaimay* (beach earth) and *jak puijdaij* (powder-like earth), both dominated by sand, are more prevalent along lower beach areas. Tsimane' men, when asked to identify a particular soil, skilfully take a sample from the ground and slowly grind it between their thumb and index finger, often picking up an additional sample to affirm their presumption. As if naturally ingrained in their profound environmental knowledge base, Tsimane' boys would commonly shout the name of the soil by just standing on it. Tsimane' women, on the other

[1]The available data from 1998 (Tobías 1998) reveals that 75 Tsimane' communities were distributed along the Rio Maniqui (35 along the Lower Maniqui, 40 along the central and upper parts of the river), while merely 11 Tsimane' communities were found to live within the TIM.

hand, tend to use a more utilitarian system for describing a particular soil; they simply name the soil for the crop they feel will be most suitable to plant on that particular stretch of land.

When reading ecological literature about the Amazon, one cannot help but be discouraged by the mounting evidence of poor soils found by a number of researchers, all somewhat lamenting the soils' general acidity, low fertility and varying degrees of aluminium toxicity (see, for example, Sanchez 1976). At least my lush image (and I suppose that I am not alone here) of the Amazon forest had been that of a giant green expanse brimming with fecundity, fertility and wilderness. It was hence not surprising, when the results of a large-scale FAO soil evaluation in the Tsimane' territory south of San Borja carried out in 1979 confirmed fairly low contents of lime, potassium and phosphorus and the absence of carbonates in the regional forest soils. Concerning acidity, pH-values range from 4.5 in the superior horizon to 5.6 in the deeper soil layers. From this we can deduce that soils in the region sustain a verdant forest only through a rapid uptake of nutrients from decaying organic matter in a thin topsoil layer; clearing the forest for horticulture exposes the soils to degradation (Richards 1985; Roosevelt 1989). In contrast to relatively light forest soils, savannah soils are extremely loamy and heavy in texture. Their compact nature impedes proper drainage and makes forest vegetation impossible, a fact that frequently leads to recurring seasonal flooding (Hanagarth and Sarmiento 1990).

Similar to other Amazonian regions, the regional climate is generally warm and humid. Still, there are marked seasonal climatic differences, registering temperature ranges from a minimum of 19–22°C to a maximum of 30–31°C. During my first research spell in 2004, the data I had gathered from the meteorological station located at the local airport in San Borja registered the highest temperature as 28.1°C in November and the lowest temperature as 20.8°C in July. The most extreme climatic values ever recorded at the station were 39°C in October 1987 and 6°C in July 1985. Atmospheric humidity varies little and average annual rainfall ranges between 1,870 and 2,550 mm (CIDDEBENI 2002). The general pattern is for the day to warm rapidly until late morning, reaching temperature peaks in mid-afternoon. Frequently accompanied by a steady and cooling breeze, it is a time of communal rest and people seek the generous shade of a lush fruit tree.

As in most parts of the Beni region, there are 2 distinct annual seasons in the Tsimane' territory: the dry and relatively cold winter between May and November, and the wet and humid summer between December and April. During the January peak rains are frequent, often accompanied by storm fronts. High morning temperatures favour air convection and massive cumulo-nimbus clouds gradually build up towards the late afternoon. Often, the storms do not break immediately and during this period thunder might rumble for days without producing even a drop of rain. When storms eventually do break, one can experience a sudden downpour of several inches of rain within just a few minutes. By then, the Tsimane' have hopefully sought refuge in their homes, as the forceful winds accompanying the heavy rains have the power to tumble top story trees with a medium height of between 40 and 50 m. Except for extremes, clouds and rain usually pass swiftly and give way to blue skies and drifting white clouds. The rains practically invite molesting swarms of

mosquitoes onto the scene, leaving everyone covered in itchy red spots. A characteristic scene with the Tsimane' is for people to abruptly interrupt whatever they are doing to slap at an exposed part of their body and later examine their palm for traces of mosquitoes. It is frankly a true relief when they (nearly) disappear with the onset of the dry season in May.

The dry winter season is marked by occasional cold spells or *surazos* that often accompany the strong winds. This is a typical feature of the whole Amazon region in the winter, as frigid air masses sweep north from Antarctica (Johnson 2003: 16). Winds from the north predominate all year round, while winds from the south and southeast are common from April through to August. During these spells, winds sometimes even exceed 150 km/h (CIDDEBENI 2002). These cold spells are repeatedly accompanied by a light rainfall locally called *chilchi*. With the onset of these winds, the sun becomes obscured by heavy clouds and stiff breezes blow through the well-ventilated Tsimane' houses, some of which are still traditionally constructed with no or just one wall made of uva grass (*Gynerium sagittatum*). These are generally hard times for the people as many Tsimane' do not own warm clothes to shield them from the cold. Getting up numerous times during the night to add more logs to the embers of the slow-burning fire seems the only means to keep warm. Although the strong winds tend to become increasingly moderate after a short while, the cold spells may last up to a week, before they give way to a warmer climate again by mid-August.

3.3 Landscape and Cosmos: Bridging the Natural and the Cultural

According to the theoretical framework guiding this monograph, social systems are conceived as hybrids, a structural coupling of a cultural system with certain sets of material components. Both overlap and constitute the biophysical structures of society (see Fischer-Kowalski and Haberl 2007). The way a society organises these biophysical elements is intricately linked to its culture. I would argue that this is even more evident in more traditional societies, whose ways of interaction with nature are mostly dictated by strongly embedded traditions based on their own cosmology and cosmogony, passed down from older generations through oral tradition. Myths, rituals and taboos help and direct the interaction of people with their natural environment as they provide the legitimacy for relationships and regulatory rules for resource use. While delving into the wide-ranging Tsimane' spiritual world would go beyond the scope of this book, I have decided to depict those features of the Tsimane' cosmic worldview that combine the notion of biophysical landscape and cosmos. This means a brief encounter with the Tsimane' cosmic landmarks before examining the peoples' use of the forest, the river, and the farming site.

The works of cultural anthropologists like Riester (1976), Daillant (1994), Ellis (1996) and most recently Huanca (2006) are probably the most intriguing

sources which introduce a Tsimane' world that is charged with supernatural meanings. According to Tsimane' narrative, people, animals, plants and stars were originally members of the same society, sharing the same language and cultural traits. Still today, a deeply ingrained cultural world coexists alongside the natural world of the Tsimane' and numerous myths and widely known oral histories are an active part of daily community life. The Tsimane' regard for their natural environment rests upon two concepts. First, there is a strong belief that natural and spiritual beings guide the relations between humans and nature, thereby denying the existence of any impersonal forces. Secondly, inappropriate human behaviour and disrespect for forest resources provokes the anger and mistrust of the guardian spirits. If these rules are broken, sorcery powers are released that cause harm, illness and even death to the people and their families. In such a light, we may say that daily Tsimane' routine not merely involves material satisfaction, but also the constant awe and awareness to comply with all sets of rules guiding the relations between the natural and the supernatural world.

3.3.1 Cosmic Landmarks

The Tsimane' believe that their habitat contains 3 spaces which are a combination of geographical and cultural features: the *jacche'* (earth space), the *che've* (celestial space) and the *jaccan* (underground space). All of these 3 worlds are charged with mystic beings. These microcosms, of which some are considered dangerous while others refer to historic events that occurred there, have had an important regulatory role in forest, land and resource use. Trees, rocks and large rock outcrops are thus encountered with awe if not fear as they are usually dwelling places for spirits. Whereas today most Tsimane' travellers still recognise these potentially powerful places on earth, in the past they would try to avoid these places or, if passing them, try not to perform any rituals there. Two landmarks deserve attention. The first is *Pa'tsene*, a historic salt lick that is still today regarded as a powerful site. The second is the myth-woven Milky Way, a periodic marker that yet again bridges the cultural with the natural domain.

Pa'tsene is a salt spring that lies in the very centre of the Tsimane' earth space (Huanca 2006: 140). The cultural anthropologist Isabel Daillant (1994) remarks that until recently, drawings of vulvas were carved in the rocks nearby. These, however, were all destroyed by a logging company that entered the territory in 1996. Up until the 1960s, the majority of salt consumed by the Tsimane' would be obtained from this salt lick near the source of the Pachene river, some 60 km away from the market town of San Borja. In her work on the socio-cultural ethics of the Tsimane', Ellis (1996: 127) calls the site a 'spectacular assemble of large, moss covered rocky outcrops creating a tunnel-like effect' that is 'the cradle of the Tsimane' peoples'. Still today, these formations embody and emit strong powers coming from potent guardians living within. Even the water itself is

believed to have healing powers. Today, however, it is mainly used as hunting ground since many animals are attracted by the rocky moss covered formations to lick the salty water.

In the past, entire Tsimane' families would make seasonal expeditions to *Pa'tsene* to collect salt. Yet a trip to the sacred place, normally taking place in August during the dry season when the salt lick was drier, implied an arduous journey. People canoed for 3–6 days upriver following the innumerable meanders of the Rio Maniqui. As the site is tucked away behind a hilltop, people had to walk for several hours, first along the riverbanks, and then climb the hill. Physical landmarks were indeed significant as primary forest patches, mountain tops, barely visible hunting trails or temporary camp sites guided the travellers throughout their passage. Along the way, people used to stop and catch fish or simply rest from the fatigue of the expedition. Upon arrival at the spring, knowledgeable elders would clean the salt lick before starting to process the salt. People would fill aluminium pots with water, place them over a fireplace and leave the water to boil until it all evaporated and the salt remained. The units of hardened salt processed were then wrapped in large leaves and taken home. Upon a man's return from the salt lick, his wife would serve him copious amounts of manioc beer to recompense for the strenuous voyage he had undertaken. With the rise of commercial salt, obtainable from the market town of San Borja since the 1960s, the rituals and taboos associated with the extraction of salt at *Pa'tsene* gradually diminished. While no longer really visited for salt extraction, the salt lick remains highly valued for its historic importance and is still today believed to be a dwelling place for guardian spirits.

The Milky Way is one feature representing the celestial space. It is yet another cosmic landmark and bears a strong meaning as a periodic marker in Tsimane' oral history. In the indigenous worldview, in ancient times the sky was close to the earth, with sky stones falling bit by bit onto the earth. When the sky darkened, it was believed to fall even further. In those times, there were no stars twinkling at night. According to Tsimane' myth, *noco*, a small lizard-like being, lived with an old woman and provided her with fish. As he grew older, he started to provide the fish for all the people. One day, *noco* left the earth to put the sky higher up and to sustain its altitude by himself. As he stretched his body resembled an arch, the Tsimane' suppose that this celestial arch has become the Milky Way. The sky has since never fallen again. Today, the Tsimane' still believe that *noco* inhabits the sky and when the Rio Maniqui dries out during the year, it is due to the benevolence of *noco* to ease the catching of fish. This can partly be explained in astronomical terms, since during the wet season the Milky Way runs parallel to the Rio Maniqui (north to south). An increase of river levels that might even lead to flooding hence coincides with the period when the Milky Way changes its position. Then during the dry season, the Milky Way traverses the Rio Maniqui, which is perceived by the Tsimane' as 'him' obstructing the river, causing it to dry up. Similarly, as the Milky Way can only be seen on very clear nights, it is during the rainy season, when the atmosphere is drenched in humidity, it becomes more complicated to spot (see Huanca 2006).

3.3.2 The Forest and Its Use

It is the combination of abundant solar radiation and high humidity that is particularly favourable to the growth of outstanding forest biodiversity. Except for occasional swamps, lagoons and savannah areas dotting the map of the wider region, thick und humid forest grows in an unbroken mantle over most parts of the area. The forest areas contain over 1,000 tree species, above all mahagony (*Swietenia macrophylla*), cedar (*Cedrela odorata*), oak (*Amburana cearensis*) and others such as chestnut or almond trees (*Berholletia excelsa*), palm hearts (*Euterpe precatoria*) and rubber (*Heavea brasiliensis*). What is typical of the region is the presence of three to four main stories of trees. The top story is formed of trees with average heights of between 40 and 50 m with straight trunks and spreading crown canopies. These gigantic tree species are particularly susceptible to sudden gusts of wind which wipe over the territory at certain periods over the year. The colossal and pyramidal trunks form wooden panels, from which Tsimane' men skilfully make mortars for squashing plantains or manioc. The middle story is the thickest with tree sizes of between 20 and 30 m. Palm species, such as peach palm, are a common feature of this level. At every level of the forest, entwining liana and ferns intermingled with young saplings of taller tree species form a dense canopy, whose fallen leaves provide the ground with fertile organic matter. The lowest story is made up of natural windfall clearings, fallow garden sites or all together abandoned horticultural plots. This story also provides a fertile hunting ground. Game resources are plentiful and forest dwellers include howler monkeys, spider monkeys, capybaras, squirrels, giant anteaters, long-nosed armadillos, tapirs, collared peccaries and red brocket deer. Other forest dwellers are toucans, parrots and various other birds and insects which all contribute to an enthralling wall of sound when strolling through the forest at night, especially at the edge of the forest near the meanders of the Rio Maniqui. From an ecological standpoint, the system ecologist Eugene Odum (1973) contends that this type of tropical rainforest is in a state of dynamic equilibrium, as its energetic exchange system is self referential, meaning that it operates as a closed system. Minerals and organic matter are constantly recycled by micro-organisms and bacteria, relying on the protective strata of forest plant cover.

Taking an exploratory wander into the unplumbed depth of the forest always meant a pure adventure when accompanied by one of my Tsimane' hosts. I was especially intrigued by the young Tsimane' boys and girls who would not only make me aware of the particular species in front of us, but on many occasions happily revealed the taboos and myths related to that particular type. This leads us to explore the cultural sphere of the forest and how it is used by the Tsimane'. While the forest dispenses its incredible resource wealth liberally, it obliges the Tsimane' to play by rules they do not always control. In order to tap into these resources, various distinct cultural rules are to be followed. Every plant and animal has its own spirit or guardian, an *a'mo*. For the Tsimane', the forest is generally regarded as a pleasant place, calling it 'new land, razed, cooked and clean' (Huanca 2006: 140),

yet also full of dangers. It is not simply a nice place for a walk, one sets out into the forest for a definite reason and with a definite goal in mind.

The treatment of trees and plants is mediated by plant masters. Tomás Huanca's (2006) excellent analysis of oral testimonies allows for a distinction between tree species with fierce spirits and those somewhat less dangerous for the human forest visitor. As concerns the first group, the guardian spirit of these trees has the power to transform itself into a jaguar. Once transformed, these jaguars act just like their real counterparts from the forest. They roam about the forest freely, appear anywhere and suddenly attack humans. The spirit of the *vojshinaj* (Kapok tree, *Ceiba pentandra*) is particularly known for its strong powers and recently-born babies, menstruating women or young girls are particularly vulnerable to fall victim of its sorcery. Simply passing near this kind of tree might be a life-threatening endeavour. Yet the Tsimane' have acquired ways to protect themselves from these powers through the use of fire and smoke. It was quite a common scene to run into a Tsimane' family walking on a forest trail, usually with the man going ahead carrying one or two smouldering logs and the mother behind, gently covering her baby's face with her hands in order to protect it from the malign spirits inhabiting the surrounding area. Another group of trees does not have the transforming powers attributed to the first group. While they are also inhabited by spirits they do not transform themselves into jaguars. With some of these trees the Tsimane' share kinship and are especially careful to protect them from dying. On an interesting footnote, despite the fact that the Tsimane' view the forest as primarily a man's domain, they regard large trees as dwelling places inhabited by both male and female spirits.

Interaction with the animal world takes place through the communication with animal masters (*jäbäbä*). Animals are given human attributes and, so Tsimane' cosmology narrates, in former times animals were members of a society that also included humans. Master spirits are the owners of wild animals and humans must ask the master for permission before killing the animal. Hunting, as a central activity within the Tsimane' array of subsistence activities, is a fine example of demonstrating the requirement of two sets of skills: the technical knowledge and the understanding with the game and its guardian spirits that is based on the principle of magical complicity. To put it differently, it is the careful combination of practical hunting knowledge and the compliance with deeply ingrained ritual beliefs that make for a good and respected hunter among the Tsimane'. The technical skills and procedures involved in hunting entail detailed knowledge on the use of hunting weaponry, the mastering of hunting skills like tracking and stalking, thorough knowledge on the seasonal and spatial living habits of the prey and compliance with rituals to appease the spirits at hand.

An exclusively male activity, the fabrication of traditional hunting weaponry (hand-made bows and arrows) is becoming increasingly replaced by rifles and shotguns. Having said this, however, manufacturing bows and arrows is still practiced widely and a few men are particularly reputed for their skill in the area. In Campo Bello, Santos had gained a reputation as an expert craftsman and other men would naturally approach him for the production of quality arrows. Shotguns, evidently

more efficient and time saving hunting devices, require ammunition which imposes a problem when one lives far from a commercial centre. Some remote communities, tucked away in the depth of the Tsimane' forest, only receive occasional visits from river traders, leaving the hunters entirely dependent on these unreliable and unequal circuits of exchange. Besides these active weapons, traps are sporadically employed as passive weapons. They are particularly useful devices for eliminating rodents on fallow sites or producing gardens. Dogs are also loyal hunting companions and are trained by their owners to kill certain animals that they hunt. The best times of the day to go on hunting trips are usually early mornings or the late afternoon, when both the day-time and night-time animals are either just waking up or settling down. Pregnant women have a particularly pronounced craving for juicy meat and their husbands have the imperative duty to fulfil these desires. A serious hunter thus leaves his home at the crack of dawn and stays out for most of the day. Some hunting trails allow for hunting trips lasting for several days, usually one day to stride out to the hunting site, one or 2 days in the hunting area and one day to return. Game is usually hunted within a 3 km radius from the Tsimane' village settlements (Apaza et al. 2002). Stalking and tracking are supposedly one of the most difficult but pleasurable hunting endeavours. The hunting of large ground game requires the skilful Tsimane' hunter to track characteristic prints and swiftly interpret the slightest clues. Expect for jaguars, sloths, bats and snakes most animals are edible for the Tsimane'. Snakes are considered undesirable since they are poisonous, too small to nibble on and, more importantly, have a rotten smell. The best hunting season occurs around April and May when animals are at their fattest. Alternatively, long periods of heavy rain extending from January to February have a nefarious impact on hunting, for the men usually remain at home and use the time to manufacture hunting devices or other commodities.

Besides these practical skills indispensable to assure a good hunt, compliance with hunting rituals and taboos have an equally strong bearing on the success of a hunt. The loss of hunting skills is sure evidence that some taboo has been broken. While some researchers have been intrigued by the intricate relationship between dreams and hunting success (e.g., Riester 1976; Chicchón 1992; Mayer Roca et al. 2000), most taboos are related to refraining from earthly pleasures. The night before a hunting trip, for example, a successful hunter must abstain completely from sexual relations. Strict dietary prohibitions depend on the animal to be hunted; eating hot peppers for example is forbidden before hunting tapirs. On several hunting occasions I observed that men, upon finding wild honey, would not consume it themselves but offer this succulent nectar to me. Yet I was unable to find out whether the consumption of honey was yet another dietary prohibition or simply one of their many nice gestures of hospitality. Among the Achuar, honey is supposed to clog the lungs of a hunter, thereby making it impossible to use the commonly used blowgun (Descola 1996). Upon the successful hunters' return, the meat is preserved through salting and drying the chunky pieces into *charqui* and manioc beer is generously shared among family and neighbours. When the meat is smoke-cured on a wooden platform built over the open fire, it will keep for about 10 days before it becomes infested with maggots and foul-tasting. The consumption of

fermented manioc beer and the distribution of game meat to close family constitute a moment of celebrating the hunter's success and a token of gratitude for the animal master.

As opposed to hunting, gathering is a far less risky undertaking and indeed a fairly easy-going and entirely prosaic activity. Always a good excuse to break the monotony of the daily round, people are not reproached if the outcome at the end of the day is modest. Gathering seasonally available wild fruits like *ibijqui (Rheedia achachairu)*, sweet limes or other kinds of citrus fruits simply offers a welcomed variety to the Tsimane' diet, topping up the daily fare rather than replacing it. Forest fruits are rarely served with a meal but are considered special treats that are enjoyed throughout the day. While gathering takes place all year round as an accompanying activity to hunting or fishing, the season when most trees come into fruit extends from December to March. This is a period when women and children set out for little walks in the direction of known fruit trees or palms. Fruits are either beaten out of the tree with a long stick or simply picked up off the ground. Sometimes brave young boys climb up to shake the twigs and bigger branches and grasp what they can reach. Gathering is not only limited to edible plants, as the forest offers an enormous array of plant species for preparing medication, fish poisons, firewood and materials for housing construction.

Starting in August, Tsimane' women gather *cajñere*, fibres from the balsa seed pod. This has in recent years become quite a lucrative business as a local cooperative in San Borja has started to use these fibres, similar in texture to that of cotton, for stuffing pillows and mattresses. By the end of September, it seems that Tsimane' women of all ages in the area spend most of their daytime collecting and transporting the fluff to the cooperative. The foraging of animal products equally falls within the scope of this joyful activity. Wild honey collection, for example, is a common but fairly brave undertaking and honey collectors often return home covered in bee stings. Extracting honey also means quite a bit of work as thick trees are cut down with axes. As soon as the tree has fallen onto the ground it is the women's task to bring jars and fill them up with honeycombs. The turtle egg season spans from late August to early October every year, guaranteeing an abundant supply of animal protein during this period. They are quite easy to locate along the river beaches where turtles leave their eggs in nests. Once harvested, they can be dried in the sun in order to be consumed at a later stage. Reportedly, when preserved by drying they last for about 8 weeks without spoilage (Chicchón 1992).

3.3.3 The River and Its Use

For the Tsimane' the Rio Maniqui occupies an extremely important place in their daily lives and is considered a resource that serves multiple functions. To start with, not only does the river quench the thirst of the exhausted hunter on his way home from a hunting trip, but also provides the only water source for cooking in the absence of individual wells. Equally important, as a mode of transport it is navigable

all year round. In this respect, as the river links remote Tsimane' communities to the commercial centre of San Borja, it eases their integration into the regional market economy. At certain times of the year, river traders embark on journeys up and down the Rio Maniqui with the intention of selling or bartering highly valued goods among the Tsimane' in exchange for rice or plantains. Adding to these functions, the river also has a social purpose. During the daytime it is a place where women meet to wash their clothes and children indulge in bathing at dawn, while at night, the setting may also serve for couples to engage in erotic play. Leaving the worldlier sphere, the river is also home to benevolent and malevolent guardian spirits that are all charged with supernatural powers.

Just like forest resources have their spiritual owners, cultural practices on the river setting are performed on a similar note. In the Tsimane' cosmic world, there are two significant forces that are in control of fish resources: *i'dojore* as the benevolent protector who assures that fish are always plentiful and *o'pito*, the unanimously feared fish guardian (see Pérez Diez 1983). Especially in former times, shamans had an important mediating role between the Tsimane' and *i'dojore* as they knew how to pay the fish owner in order to 'open the fish door and allow fish to go upriver' (Huanca 2006: 155). Older people narrate that the use of dynamite to catch fish, a popular method applied by colonists, would anger the guardian inasmuch as he would shut the fish gates and make the Tsimane' suffer. *O'pito* is the evil force that controls fish resources and the Tsimane' are in constant fear of his fierce powers and unpredictable spirit to cause harm and even death to others. In former times, if *o'pito* provoked the death of a person (mainly young babies and menstruating women), his or her house would be burnt down to escape the harm left by the deceased. This ritual is still followed by some families today. Portrayed in Tsimane' cosmology as a greedy being who selfishly wants to monopolise fish resources for himself, people are in constant fear of disturbing and angering *o'pito* if they kill too many fish and leave them to rot. The migration of fish upriver, for example, is interpreted as a sign of *o'pito* being at work. When this is the case, people refrain from taking a bath or extracting water from the river, all in an attempt not to upset him by disturbing his efforts (Huanca 2006: 157).

Fishing takes place all year round and almost every day. Often, a member of the family goes down to the river in the early morning hours to fish for the day's main meal. When fish is not smoked over the open fire, it can be boiled and made into tasty *jóna*, a kind of thick fish stew that is normally shared with the extended family. The Rio Maniqui or *cojiro*, as it is affectionately called by the Tsimane', serves as the main source of fish, especially during the dry season when low water levels invite the skilled fisherman (and woman) for a good catch. During the rainy season, the Rio Maniqui can become quite dangerous when it overflows its course, flooding the houses and all other vegetation to be found along the riverbank. This is a time when Tsimane' seek smaller rivers, oxbow lakes or creeks for fish. Water dwellers in the Rio Maniqui and its tributaries include caimans, otters, tortoises, river turtles some 86 fish species (Pérez 2001: 56). Most fish are edible, and food taboos are less restrictive as compared to hunted game. Food taboos are generally directed at pregnant women or people who are unwell. Pregnant women, for example, should

avoid eating fish with sharp teeth as these may cut the umbilical cord of the unborn baby. Chicchón (1992: 166) contends that the Tsimane' hide from others the fact that they consume stingrays. Stingray liver oil has a high market value and is regularly used as medicine for respiratory infections and their sting equally serves to numb toothache.

The Tsimane' have a wide-ranging armoury to choose from: hooks and lines, nets, arrows, machetes, *barbasco* or fish poisons. Hook and line fishing, though not quite aboriginal to Amerindian societies, has been practiced for a long time and became even more popular once metal hooks became available on the local markets. Formerly, fish hooks were made out of palm wood cuttings and lines plaited from palm fibres. Several hook sizes are used to catch different fish and small fish, insects, pieces of meat or on rare occasions fruits are used as bait. Seemingly enjoying the pleasures of line fishing, an activity almost considered as a form of gathering, children and women set the lines along the river at nightfall and often leave them overnight. While this form of fishing produces rather low results, I still had the impression that the regular fish supply of many households throughout the year truly rests on this seemingly small-time fishing technique. Net fishing, on the other hand, can produce excellent yields if the fishing site is well chosen. Fishing with nets is an exclusively male activity and I have mainly seen it being used in subsiding lakes where fish are somewhat imprisoned, thereby signalling an easy catch. Yet its use is equally rewarding when applied at any promising channel, as the net seals off a little stretch of the water body so that the fish have no chance to escape. Once all fish are captured, the manoeuvre recommences at another section along the waterway.

Contrary to the largely individual fishing techniques described so far, *barbasco* or fish poisoning is a collective undertaking. While mounting concerns about its contaminating effects have contributed to this technique's loss of popularity in the region, it is still practiced on occasion. Men, women and children from different households are all eager to obtain large quantities of fish from this rather elaborate process. It is a skilful technique associated with many Amazonian societies (see Descola 1996; Johnson 2003) that provides not only economic returns, but equally makes for a pleasant family outing and a period for socialising in groups. The Tsimane' use three different kinds of fish poison: *chito'* (*Tiphrocia vogeli*), *conofoto'* (*Hura crepitans*) and *vashi'* and choose certain river bends where water levels are low. Small oxbow lakes may also form a genuine breeding pond for all sorts of fish species and sizes. A temporary dam is constructed using a variety of palm leaves and uva grass poles and the poison, by momentarily changing the chemical equilibrium of the water, makes the fish become *shu'qui* (which literally translates as drunk). By now all participants are ready to catch the fish either with the use of bows and arrows (men and boys), machetes (women and young girls) or simply with their bare hands. Women also scoop small fish up in palm-weaved baskets, keen to take advantage of the fish being intoxicated. When all this is over, the dam is carefully taken apart in order not to impede the further circulation of fish. In terms of labour division, it is interesting to note that the different roles of males and females in fish poisoning somewhat reproduces the gender roles assigned to other

modes of interacting with nature. While men are in charge of the heavy and probably more perilous labour tasks (dam construction, preparation of fish poison, the use of bows and arrows), the physically lighter process tasks – to some extent resembling gathering activities – are assigned to women.

As briefly mentioned above, the use of fish poisons has recently caused a wider-ranging debate questioning its ecological sustainability for the river and its resources. Particularly non-indigenous farmers, living near Tsimane' settlements where this fishing technique is still common practice, have raised severe complaints about the contamination of the water body. Also, the park management of the Beni Biosphere Reserve, where some Tsimane' communities are located, has prohibited the application of this technique and started widespread sensitisation campaigns against it. As a result, many communities, especially those more exposed to national culture, have abandoned *barbasco* fishing altogether.

3.3.4 Farming Myths

Along with hunting, gathering and fishing, the Tsimane' are also no newcomers to horticulture. For many centuries, Tsimane' farmers have been cultivating manioc, maize, rice and plantains as their main staples. While a detailed account of the different stages involved in the Tsimane' agricultural cycle will be examined at great length in Chapter 4, in this section I will limit the discussion to the cultural beliefs and perceptions involved in horticultural practices.

For some indigenous societies in the Amazon, horticultural fields are just a place where people work in order to eke out a living (see, for example, Carneiro 1964) and other societies' agricultural practices are almost entirely determined by spiritual beliefs in gardening magic (see, for example, Descola 1996). The Tsimane', so to say, combine a bit of both worldviews. Tsimane' oral traditions surrounding gardening, for instance, are much more limited as compared to the more elaborate world of the forest (see Huanca 1999). Yet both worlds are somehow related, as agricultural practice involves clearing forest patches, which entails the constant negotiation with the *amo*, the spiritual tree master. In former times, special *jemaca* (chants) were sung to accompany the agricultural processes, a veritable art of communicating with guardian spirits that was mostly mastered by shamans.

Huanca (1999) has recollected three oral traditions which he considers to narrate Tsimane' agricultural origins. The first story recounts that in ancient times Tsimane' farmers would mark the boundaries of their field territory with arrows in the shape of a head and wait until a sudden gust of strong wind would topple the trees. The plot was burnt and a small manioc stem thrown onto the soil where it started to grow. What we learn from this myth is that small clearings, caused by naturally occurring strong winds during the winter season, might have been used for cultivation in ancient times. Due to long dry spells following frequent thunder, fallen tree debris would dry much quicker than normally, thereby facilitating the burning process. The second account relates *opoj's* fallow, a legend still heard

occasionally in some of the few secluded communities within the Tsimane' territory. *Opoj* is a mythical being, the guardian spirit of agriculture and recognised by the Tsimane' farmer as a plantain-like plant. According to oral tradition, it was *opoj* who introduced the Tsimane' farmer to the art of cultivating plantains. There also exists a different version of this narrative (e.g., Pérez Diez 1983) that associates maize and other cultigens produced by *opoj*. The third reference, though only marginally related to agricultural origins, refers to the tree *puyu* who in the form of a man would work the plots without ever wanting to return home. This is why God transformed him into a tree to remain on the farming site. It is interesting to note that still today, we find many of these tree species in cultivated forest clearings. There also exist myths that recount the origins of the staples manioc and plantain. The manioc myth considers this tuber to have been introduced to the Tsimane' through sky people, who taught the Tsimane' women the art of brewing *shogdye*, a strongly fermented manioc beer. The myth also reveals the power of women over the cultivation of this plant. Still today, the planting, weeding, harvesting and preparation of manioc is largely considered to fall within a woman's domain. Concerning the myth on the origin of plantains, the frugal plantain owner *opoj* would provide the people with bad seeds, forcing them to steal them from elsewhere. This myth illustrates the struggle of Tsimane' farmers to obtain sufficient seeds in the past and equally shows the importance of sharing resources among the people.

From these myths we can deduce that horticultural practice has been around for a long time. It appears that when horticultural practices among the Tsimane' were in their beginnings, agriculture was considered an almost sacred activity. The manioc myth, for example, takes place in the sky and on earth (Huanca 2006: 63). The first maize and manioc harvests were offerings to supernatural beings in order to appease them. These narratives also show that the main staples manioc and plantains have not lost much of their former importance. While it is true that some Tsimane' communities have started to substitute some manioc farming with rice cultivation, manioc beer parties still remain at the heart of the Tsimane' social world. Still today, a meal without plantains – roasted, baked or cooked – is hardly considered a proper meal in most communities. These myths also show that rice, although cultivated in most Tsimane' communities mainly as a cash crop, does not enjoy the same level of cultural importance as compared to the more traditional manioc or plantain staples.

Within the Tsimane' slash-and-burn agricultural system, the cultivation of agricultural fallow plots plays an equally important role. These sites, besides the presence of manioc, maize and plantains, also contain domesticated plants that serve medicinal, material or nutritional purposes. One of these plants is *väij* or the peach palm which is cultivated mostly for its delicious fruits and material importance to manufacture bows and arrows. The ritual surrounding the consumption of the peach palm fruits is quite elaborate and marks the beginning of the year's palm harvesting. The seasonal botanical changes from flowering (September) to fruiting (January), often compared to a woman's pregnancy, go through a number of rituals. When the palm is flowering, women and little children are not allowed to visit the field in order not to upset the guardian caring for the plant. When the fruits are mature, only

the oldest man in the family may begin the harvest by following certain rules (e.g., abstention from sexual relations the night before). The first harvest needs to be shared among all extended family members in order for the whole family to feel protected. After the common meal, the family goes to the river to bathe, tossing the peel and seeds into the water as a cleansing process. There, the peach palm ritual comes to an end and from the next day, people are allowed to pick up their daily routines again.

As Tsimane' lifestyles change, so does their belief system. What we see today is a fairly heterogeneous picture of Tsimane' beliefs and practices. As a rule of thumb, Tsimane' communities located at a further distance from market centres have better preserved their traditional spiritual belief system than those living near commercial hubs. Yet in the last four decades or so, people have started to merge their traditional spiritual domains with Christian elements. These developments are rooted in their history of contact with missionary tribes, part of which we are going to explore in the following section.

3.4 Tsimane' History of Contact

3.4.1 From Sporadic Encounter

Tsimane' contacts with outsiders cannot be traced back with absolute certainty, as quite a few historical accounts use generic terms to refer to several indigenous lowland inhabitants. Early references to the groups who inhabited the area today occupied by the Tsimane' include various names such as Rache, Uchumanos, Maniquíes, Amo, Chunchos and Cunana. Yet opinions as to which groups refer to the Tsimane' vary. Whereas Ellis and Araúz (1998) affirm that the Chunchos who lived in the river plains of the Rio Mapiri, Rio Coroico and the Rio Beni are what we call the Tsimane' today, others believe the Uchumanos or Chumanos to be today's Tsimane'.

While opinions diverge on the former denomination of the Tsimane', there is however widespread agreement on the similarities between the Tsimane' and the Mosetene. Both indigenous groups bear a strong resemblance in their language and cultural beliefs and some scholars even consider them as the same indigenous group. While this has not been ascertained, their geographical vicinity may partly explain their similar traits. In 1913 during his travels along the Amazonian rainforest, the Swedish explorer Erland Nordenskiöld considered the Rio Quiquibey to be the frontier between the Tsimane' and the Mosete. When a Tsimane' crosses the river, so he recounts, he used to exclaim: 'I want to know when to return back to my territory' (Nordenskiöld 2001: 172 [1913]). The name Chimane has been used more commonly in literature since the second half of the nineteenth century. Wegner (1931: 87) distinguishes two types of Chimane, the Chimane inhabiting the mountainous areas ('Bergchimanen') and the inhabitants of the floodplains, who he referred to as Churimana ('Pampabewohner'). The Churimana, it seems, no

longer exist, whereas the Chimane have largely maintained their traditional way of life due to their isolated lifestyle. Today, the term Tsimane' is commonly used.

The excavation of archeological and paleontological materials, like stone tools, pots and fossil remains in the 1960s, reveals information about the frequent bartering between lowland tribes. Besides these material trading relations, archaeological evidence also shows a permanent flow of cultural exchange between the Tsimane', the Mosetene and other lowland groups through the bartering of tools, medicine and plant material as well as interethnic marriage and language borrowing. Yet trade relations also extended to the highlands. In exchange for forest products such as feathers, monkeys and tropical crops, the Indians of the forest received stone and bronze tools, pottery and highland crops. On an interesting footnote, Saignes (1985) has found similarities in housing construction and belief systems between Lake Titicaca in the Andes and the Rio Beni in the Amazon.

By the late seventeenth century, sporadic encounters with missionaries began. Franciscans, Dominicans and especially Jesuits were all driven by the same goal: 'to subject the barbarian tribes to the Spanish Crown and civilise them' (Pérez Diez 1983: 83). Soon, it was the Jesuits who won the battle over other missionaries and widespread efforts to convert 'savage' indigenous tribes commenced (Reyes-García 2001). After only 7 years of extensive spiritual and intellectual education, the Jesuits established their first mission in 1682, counting some 600 converted indigenous. Soon, they moved up the area from Santa Cruz de la Sierra to Gran Moxos and continued unrelentingly westward to the fringes of the Andean mountain range (Chicchón 1992). In 1693, they established the Mission San Borja along the banks of the Rio Maniqui. For the Jesuits, the location of the town of San Borja was extremely important since it gave them a western stronghold along with missions from other Catholic congregations. Again, whereas most written records do not specify the Indian groups subjugated under the missionary regime, historic sources (see in Ellis and Araúz 1998) did, however, make reference to some 3,000 Churimana people residing in the mission. The missions contributed to the construction of roads and water pipes, the establishment of shops and other small industry and cattle for the common good in all settlements under missionary influence (Lijerón Casanovas 1998). In addition, the priests also tried to appease the Indians by handing out trinkets and tools. Yet, making them stay was by no means an easy task, as most did not at all feel at all obliged to reciprocate by being tied to the mission. According to Jesuit Father Altamirano's written accounts (1699 in Chicchón 1992: 52) on the history of the mission, he considered the Churimana as 'the worst natives of all', an irate remark that may have been due to his inability to dominate them. If our presumptions are true and the Churimana were indeed the ancestors of modern-day Tsimane', then the Tsimane' were already submersed in Jesuit missionary activities since the very beginning.

Approaching the turn to the eighteenth century, uprisings of the Indians against the priests in those missionary settlements became more and more numerous and culminated in setting fire to the buildings and the consequent expulsion of nearly all missionaries (except for the Jesuits) from ethnic territory (Lijerón Casanovas 1998). Other missions disappeared due to the spreading of disease and the resistance

of people to living in big communities and adapting to new customs. In 1767, in a struggle for power, the Spanish Crown expelled all Jesuits from their territories in Bolivia and replaced them with other priests, who were mostly Bolivians from Santa Cruz. Due to their lack of virtue and spiritual commitment, it only took a few years for the majority of the missions to vanish from the scene. Since no specific references have been made to the fate of the Churimana, it is presumed that they must have fled back into the forest to settle down along the upper stretches of the Rio Maniqui, where their descendants are still found today.

So despite their continuous and fervent presence in the Moxos area, the Jesuits did not accomplish the conversion of the Tsimane' into a sedentary society dominated by Catholic beliefs. The reason for this to occur, according to some authors, lay in the Tsimane' social organisation. As they lacked centralised leadership patterns, they were somewhat immune to forced attempts to settle them within confined places (Ellis 1996). Others mentioned the limited incentives for the Tsimane' to surrender to the pressures exercised by the Jesuits (see, for example, Huanca 2006). To start with, their subsistence patterns, based on extensive use of resources, prevented them from a sedentary lifestyle in the missions. Secondly, the Tsimane' had learnt to protect themselves from epidemics, previously experienced during contact with white foreigners. Finally, as shamans played a central role as religious leaders for the Tsimane', there was practically no incentive for the Tsimane' to sustain their interest in the missionaries. As we shall see below, two centuries would have to pass for missionaries to return to the Moxos region and rekindle contacts with the Tsimane'. This time, however, on a more permanent basis.

Economic relations with migrants, attracted to the Beni lowlands by the lure of large-scale natural resource extraction, constitute the second set of sporadic encounters between the Tsimane' and outsiders. When Bolivia gained its independence from Spain in 1825, the central political power shifted to La Paz. As a result of these larger political processes, trade relations between the lowlands and the highlands had lost their former importance and when liberal reforms opened the Bolivian market to low-priced European goods, national produce could no longer compete. New ways had to be found to strengthen Bolivia's economic potential and make it more competitive and one attempt was to develop and integrate the remote Bolivian lowland region into a broader national economic strategy. In 1842, the department of Beni was created and economic exploitation strategies based on the extraction of natural resources for the provision of national and international markets fuelled large-sale immigration from the highlands (Reyes-García 2001).

The history of natural resource extraction has been cyclical with its first boom period being the extraction of quinine bark in the north of Beni and the neighbouring department of Pando. From the tree bark, strong alkaloids were extracted which formed the basis for important medicines to control malaria and other fevers. The extraction of quinine had its first peak between 1830 and 1860, and by the year 1860 quinine constituted one of the principal exports to Europe. A second peak period followed between 1877 and 1885 (Roca 1990: 204). Whereas quinine extraction slowly diminished after seeds were secretly exported to Asia, it nevertheless opened the Amazonian routes for the extraction of a second product in demand,

namely rubber (*Heavea brasiliensis*). The exportation of rubber from the northern part of the Beni came to be the main pillar of the Bolivian economy along with silver and tin during at least three decades, from 1880 until 1910. The mode of rubber tapping demanded a large work force and a second wave of migration was sparked, this time however, with much greater demographic and social consequences than before. The rubber boom abruptly began to turn into a bust in 1912/13 when the price for rubber on the international market suddenly slumped. Once again, British colonies in Asia began to flood the European market with cheap rubber.[2] What followed was a socio-economic depression and thousands of day labourers lost their jobs. Forced to eke out their living somewhere else and attracted by the vast land resources available in the region, many migrant families moved to nearby town centres.

Through the use of deception and violence, workers were also recruited among native peoples, in particular among the Tacana, Movima and Moxos. Chicchón (1992: 59) asserts that it was an era that had a deep impact on the indigenous populations 'leaving deep scars in native demography, social composition, residence patterns and mythology'. Many authors agree, however, that the Tsimane' were not among the recruited labour force, given their dispersed settlement pattern on the one hand and their marginal integration into the monetary market economy on the other hand. Yet the Tsimane' were still affected by the sudden influx of a new *mestizo* population to the Beni. On the one hand, large-scale migration triggered a process of encroachment on their territory. As a direct consequence, indigenous peoples and newly arrived rubber tappers found themselves competing for the same resources such as game, fish and forest foods. The Tsimane', attracted by the lure of metal tools and other luxury goods, engaged in frequent trading relations with newcomers to their territory. In the end though, encounters between the Tsimane' and migrant populations were still largely characterised by their sporadic nature.

3.4.2 To Permanent Links

3.4.2.1 Tsimane' Growing Economic Relations with Outsiders

With many new economic opportunities arising, the Tsimane' history of contact has accelerated enormously over the last century; and with growing exposure, increasingly more permanent links with the outside world have been established. The starting point that triggered economic transformations around the area of San Borja was the sudden influx of hundreds of migrant families who had previously worked for the busted rubber collecting centres in the northern Amazon of Bolivia, to the urban centre of San Borja around 1910. The town of San Borja slowly gained

[2] In1876 the British botanist Henry A. Wickham, extracted 70,000 rubber seeds and smuggled them to England, where they were planted in a glass house in Kew Gardens near London.

economic importance, whereas at the turn of the nineteenth century it was barely more than a little town with a church and the plaza, a couple of retail shops and a few families living here and there (see Huanca 2006: 163). Attracted by the vast stretches of seemingly uninhabited land, new migrant families started to work in agriculture and cattle ranching. Migrants became quite affluent by taking possession of seemingly free land and untamed cattle, yet also by labour exploitation of indigenous people. Labour exploitation involved the practice of debt incursions, meaning that patrons would pay their workers in advance with market goods in order to create huge debt burdens on them and make them dependent and obedient workers. Indigenous people were evidently an easy target as often their lack of Spanish language skills made them vulnerable. In those days, the Tsimane' would occasionally visit San Borja to exchange their forest goods, such as local latex or natural oils for salt, metal tools and clothes. When in town, they frequently interacted with all kinds of people, among them merchants, priests, store owners or housewives. Exchange relations, however, were coloured with discriminatory practices towards the Tsimane' as, in light of their scarcity, commercial goods were preferably sold to white people (see oral testimonies by Huanca 2006: 167).

The construction of San Borja airport in 1936 had a huge impact on the economic development in the region. Connecting the hitherto isolated San Borja area with other commercial centres like Trinidad, Riberalta and La Paz, meant radical transformations of the local economy. While cattle meat, sugar cane and leather exports boosted, daily flights now guaranteed a regular influx of modern commercial goods whose ease of access and higher quality soon became industrial substitutes for the native products such as latex or traditional medicine. At the same time though, the Tsimane', allured by the expansion of retail stores and merchandise arriving at the town, started to travel more frequently to San Borja by river or trail. When marketing of agricultural products began to flourish, so did exploitative labour relations between the newly prosperous white farmers and indigenous peoples in the region. Oral accounts reveal that many Tsimane' were among the day labourers. Many of them got indebted to patrons as a result of which they had to move closer to the town of San Borja. Moreover, the growth of the town of San Borja had another impact on Tsimane' farmers. Some enlarged their farm plot sizes as they now started to produce beyond their subsistence needs to provide for the growing market in San Borja.

In the 1940s, new economic opportunities opened up. These included the extraction of forest products such as quinine bark, a product promoted on a national scale for export to the USA. In exchange for machetes or clothes, the Tsimane' were involved in many ways in the exploitation of this resource. On the one hand, they were contacted for their profound knowledge of the forest. Merchants or contractors themselves needed the Tsimane' to locate quinine trees among the various tree species. On the other hand, various Tsimane' were also directly hired for the extraction of quinine bark. In exchange for low-value tools or clothes, they provided a cheap labour force to contractors, merchants and other indigenous groups like the Yuracaré or Moxeños. At the same time, the Tsimane' were equally valued for their skills to provide forest meat to the groups they were working with. The commercial

exploitation of wildlife also took off around the same time. These included the hunting of the black caiman, followed by the commercialisation of animal pelts during the 1950s, 1960s and 1970s when pelts became largely depleted. Again, many Tsimane' were hired as guides and were often given cheap alcohol or a bar of soap in exchange.

From the 1950s, the first river traders started to enter Tsimane' communities to barter commercial products such as fishing hooks, clothes, soap and medicine in exchange for agricultural products such as rice, maize or plantains. As a result, Tsimane' families no longer had to walk to San Borja to obtain market products which they had previously often been denied. Now, as the market came to their communities, more permanent trading relations with the outside world were established. During this period, the Tsimane' became highly skilled in *cajtafa* weaving, a palm that grows at the foothills of the Tsimane' territory in the upriver Maniqui. The Tsimane' weave the leaves into long sheets that serve as high quality roofing material that is highly solicited by people throughout the tropics. With the inception of river trading, the Tsimane' started to use these palm sheets as currency in exchange for market products. After various decades of intensive use, the *caftafa* palm species has become scarce in many parts of the territory. Today, a number of projects are under way in an effort to protect it from further large-scale depletion. By the mid-1970s, logging firms operating in the Department of Santa Cruz started to expand their activities into the Beni region in search of precious hardwoods such as mahagony (*Swetenia macrophylla*), cedar (*Cedrela odorata*) and oak (*Amburana seaerensis*). Independent loggers working under the contract of wood traders needed to rely on the Tsimane' for work, food and orientation in the forest. Tsimane' guides would open forest trails and allow the loggers to cut the trees in exchange for which they were given alcohol or used clothing and trinkets.

3.4.2.2 Colonisation Programmes and Mounting Social Conflict

Despite the growing insertion of the Tsimane' in the regional economy, I believe that it was not until the late 1970s, that the Tsimane' socio-cultural landscape started to undergo changes. These changes, ranging from traditional settlement to subsistence patterns, were largely triggered by two parallel, yet intrinsically interwoven developments: state colonisation programmes in the Tsimane' territory, on the one hand, and the construction of roads, on the other hand.

Following the revolution of 1952, a national land reform was implemented by the Bolivian government in an attempt to encourage colonisation efforts in the lowlands. The idea was to populate the 'empty tropics' and, in so doing, accomplish the economic integration of the Bolivian lowlands. By converting a large part of savannah lands into private property, the Agrarian Reform Law failed to take into account the integral way indigenous people use the land and its resources. Adding to this, the parcelling of land was extremely adverse to indigenous ways of communal land ownership. More so, the new law also declared the State as the owner of the trees and the resources found in the sub-soil, again neglecting the importance

of the spiritual elements treasured by indigenous belief systems. Colonisation efforts to the Beni were increased once a commercial road between San Borja and the departmental capital Trinidad was opened in 1975. As the road produced an increase in land values and enhanced the regional export trade, impoverished highland families were impelled to participate in the colonisation programmes. A second and much larger-scale colonisation programme in the area, along the foothills of the Pilón Lajas chain near the towns of Yucumo and Rurrenabaque, took off once the road connecting La Paz with the Bolivian tropics was completed in the mid-1970s. The programme involved the settlement of thousands of highland families, grouped into units of 20 families. Each family received 50 ha of land, usually in the form of square blocks of land spread alongside the road between Yucumo and Rurrenabaque. At hardly any instance during the land distribution process though were the usufruct rights of the Tsimane' population, who had been living there for centuries, taken into account (Robinson 1995). The only attempt undertaken by the Institute of Colonisation was the creation of the 'Tsimane' nucleus', a total of six blocks of land that was allocated to the Tsimane' families living in the area (Huanca 2006: 196). As a result of these efforts, some Tsimane' families began to live in these reduced blocks mingled with colonists, while others sold their land and moved to other, more remote parts of their territory.

Huanca (2006) contends that colonisation efforts, especially along the Pilón Lajas foothills, have triggered a number of social and ecological changes which, in turn, have altered some of the features that determine how the Tsimane' perceive and interact with nature. In social terms, he observes changes in social interaction and lifestyles. When immigrants first arrived, their relationship with the Tsimane' was largely governed by the norm of reciprocity. Food and agricultural labour was shared, both adopting certain behavioural patterns from the other group. Conflicts arose, however, when colonists who lived in the area bordering the Tsimane' wanted to expand their land, either by adding more land to their existing areas or by creating new nuclei. Equipped with legal papers, lawyers, good contacts to town people, the backing of the Colonist Labour National Union and longstanding experience in fighting for their rights, colonists enjoyed many advantages over their Tsimane' neighbours, who all too often lacked the language skills or simply the awareness about existing laws. Yet this is only one side of the coin since not all Tsimane' families were submerged in this unequal power relationship. Huanca (2006) recounts that some Tsimane' families living in the colonisation areas adapted their lifestyles and started to behave like their colonist neighbours. Clearing forest patches for cattle pasturing, a strategy otherwise extremely rare among the Tsimane', became a common economic strategy among these families. Assimilation equally took place in terms of language and Spanish has become the dominant language in the Pilón Lajas foothill area. These socio-cultural changes contrast with the more traditional lifestyles of the Tsimane' living alongside the Rio Maniqui surrounding the town of San Borja, where colonisation efforts have always taken place on a much more limited scale. From an ecological perspective, increasing population numbers have narrowed the availability of land and forest resources in the region. The large-scale influx of colonists has particularly fuelled the clearing

of primary forest, since many of them knew how to operate a chainsaw, an experience they have gained in the Alto Beni region during earlier colonisation periods in the 1950s and 1960s. Cut trees have mostly been sold to wealthy urban people for construction or, in fewer cases, to intermediaries for bigger logging firms. The extraction of timber has had a significant impact on the loss of forest resources indigenous peoples exploit for their subsistence. The scarcity of game meat, for example, has been observed by quite a range of anthropologists (see, for example, Chicchón 1992; Daillant 1994). Adding to this is the fact that along the colonisation frontier logging has equally altered the landscape. Turning forests into grasslands means a break in historical and mythical cycles, thereby undermining the socio-ecological relationship the Tsimane' have practiced with their natural environment for centuries. Also, when roads were built, construction companies did not respect ancient Tsimane' hunting trails, archeologically important sites or the habitat of wild animals (Huanca 2006: 160).

In short, it appears that this tense condition is for the most part rooted in the clash of worldviews on land tenure. Like other native Amazonian groups, the Tsimane' have a sense of territoriality which embeds a cultural universe whose frontiers are independent of political borders. As we have learned before, many Tsimane' families still visit historical places like former fishing and hunting areas or visit relatives in other communities. They have a range of myths about places considered sacred to them and identify cosmic markers related to their culture and history. Godelier's (1986: 81–82) definition of territory is emblematic for the Tsimane' territorial concept: 'By territory is meant a portion of nature and therefore space over which a given society lays claims and ensures, for all or some of its members, stable rights of access, control and use regarding all or some of the resources found there, and which it is desirous and capable of exploiting'. For the Tsimane', territoriality does not refer to a permanent occupation of the forest, but a rather temporary and erratic use of its resources along their life cycle (Huanca 2006: 195). In such a way, their communal land ownership regulates access and use rights and, in so doing, presents a stark contrast to the colonists' concept of private property. The following section on Tsimane' land claims has been an institutionalised response to ensuring legal protection measures against growing logging activities by mostly large-scale commercial encroachers.

3.4.2.3 Protective Measures and Tsimane' Land Claims

It was the alarming rate of timber and non-timber resource depletion that called for protective measures. A first attempt to put large-scale timber extraction on hold was the creation of the Tsimane' Forest Reserve by the Bolivian government in 1978. Measuring about 1,200,000 ha, the reserve surrounding the Rio Maniqui covers the majority of the forested area between the towns of San Borja and San Ignacio de Moxos. In the late 1970s, it was home to some 10,000 inhabitants, most of whom were Tsimane', Mojeno, Yurucaré or Movima Indians. In an attempt to further enforce protection measures, by 1982 the government had established an 11% tax

on all the wood removed from the Tsimane' Forest (Reyes-García 2001: 8). Yet hopes of full legal protection measures were somewhat short-lived when political and economic pressures mounted to open the reserve to logging companies. Demands were given way to in 1987 when the reserve was opened to seven logging companies and 600,000 ha of Tsimane' Forest was turned into permanent production forest almost immediately. Much has been written about the various control mechanisms to promote sustainable development, but the general picture prevails that timber operators seldom complied with the range of rules and regulations imposed on paper. Adding to this, the forestry service charged with the enforcement of conservation strategies suffered from chronic under-funding and also lacked the technical and human resource capacity needed for effective control (see, for example, Piland 1991).

When granting logging licences to the companies, the government ignored the traditional dependence of the indigenous peoples on the forest. A decree was proposed to title land only on the margins of the Tsimane' Forest, while forestry concessions in the centre of the reserve would be left untouched. Yet after failing to reach a consensus among all the different stakeholders involved, a large-scale protest march was launched to increase political pressure on the national government. More than 700 indigenous peoples representing the Mojenos, Sirionos, Yuracares, Movimas and in fewer numbers the Tsimane' marched for more than 650 km from Trinidad, the departmental capital of the Beni, to the national capital of La Paz. Campaigning for 'Indigenous Rights and Dignity', their strenuous journey took 34 days. Their march captured the interest of the national media and instigated widespread popular support. As a result, in 1990 several decrees for land rights were signed into law. Concerning the Tsimane', communal land titling included an extensive area along the Rio Maniqui and encompassed much of their traditional territory.

The Great Tsimane' Council, an umbrella organisation representing all the Tsimane' people, was founded in March 1989, only months before the indigenous protest march was launched under the coordination of the *Central de los Cabildos de Mojos* (indigenous umbrella council of the Moxos region). The Tsimane' Council entered into an agreement with several logging companies to benefit the Tsimane' by paying a certain percentage of their profits to ensure the functioning of their political arm. After only a few years the project failed and the Tsimane' Council had to withdraw from the contract. Hence, despite their now official rights to the land, timber companies and private contractors have continued their presence in the Tsimane' territory.

3.4.2.4 The Beni Biosphere Reserve (BBR)

The rich biodiversity of the Tsimane' territory has attracted the attention of national and international conservationist organisations and led to the establishment of several conservation projects; the most prominent being the creation of the Beni Biological Station under the auspices of the National Academy of Science in October 1982.

In an attempt to pay tribute to the presence of indigenous people in the reserve, the Biological Station was declared a biosphere reserve by the Man in the Biosphere Programme (MAB UNESCO) in 1986. Biosphere reserves are 'areas of terrestrial and coastal ecosystems promoting solutions to reconcile the conservation of biodiversity with its sustainable use' and are intended to fulfil three complementary functions: conservation, economic development and support in research and monitoring. Within the BBR, where comprehensive management plans have been in place since the mid-1990s, the reserve serves as both, a conservation entity and to a certain extent an indigenous territory. The area of the BBR covers an area of approximately 135,000 ha and is located about 45 km from the foothills of the Andean mountain ranges along the southwest fringes of the Amazon region. It is characterised by a mosaic landscape composed of evergreen seasonal forests, savannahs and swamps (Moraes et al. 2000). Of the total reserve, about 30,000 ha are part of the Tsimane' Territory along the lower Rio Maniqui bordering the community of Campo Bello. In 1988, the BBR rose to fame in the international conservation scene, as it was the first location to participate in the national debt for nature exchange funded by Conservation International. On two occasions, namely in 1997 and 1999, the reserve's limits were adjusted and its boundaries moved further away from the town of San Borja. These changes took place as a result of mounting pressures from influential townspeople who perceived the reserve as a threat to their growing interests in ranching and logging. While the reserve area slightly expanded to the north, the total surface area, however, hardly changed.

The number of Tsimane' families living within the boundaries of the reserve have constantly grown from around 120 households in 1989 to about 180 households in 2000. The majority of the around 20 Tsimane' communities are found on the alluvial terraces along the lower Rio Maniqui and along the upper Rio Curiraba on the south eastern border of the reserve. In addition to these villages we also find various dispersed dwellings of colonist families, ranchers and Tsimane' households scattered throughout the entire reserve. Due to ease of access, itinerant traders tend to visit only the communities located relatively close to San Borja along the lower Rio Maniqui. The general presence of flooded savannahs when penetrating the interior of the reserve makes common access relatively strenuous. This is why some of the remote communities found along the interior stretches of the reserve have preserved a wider range of traditional socio-cultural practices than others.

3.4.2.5 More Recent Missionary Efforts

Missionaries represent another recent group of outsiders with whom the Tsimane' have established growing permanent links. We have learnt before that early missionary attempts in the seventeenth century were characterised by failure. The Tsimane' lived dispersedly along the rivers and the allures offered by missionaries provided not enough incentive to reduce their independent and peripatetic lifestyles to sedentary mission life. Almost two centuries later though, things had changed. In the 1950s, the Tsimane' had already established contacts with outsiders and

would frequently interact with merchants in town, loggers, colonists or cattle farmers. River traders would pass by their settlements every so often in search of rice, maize or forest products. Adding to these changes, the national revolution in 1952 set the stage for widespread social reforms which opened up new opportunities for education. While the resources of the national government were taken up by the endorsement of school and educational reforms in the highlands, the state welcomed the idea of delegating the responsibility for schooling the indigenous lowland tribes to missionaries. The missionaries, on the other hand, who now enjoyed the full backing of the national government, saw it as their duty to work with indigenous people, often neglected by the state. To a certain extent, though the missionaries acted on behalf of the state in schooling and health provision, they were still considered more grassroots level actors.

Since the 1950s, two different missionary groups have worked with the Tsimane': the Catholic priests and the Protestant New Tribes Missionaries. Both were primarily concerned with improving health care and schooling programmes among the Tsimane'. Catholic priests started their work with native peoples in the Vicariate of Reyes in 1942. In an effort to strengthen their contacts with the Tsimane', a small group of Catholic missionaries set up a mission in the community of Cara Cara. Yet their first attempt failed since too many outsiders, merchants from the town of San Borja or cattle ranchers, disturbed their plans to protect the uncivilised yet innocent Tsimane' tribe against exploitative forces and defend their rights. As a result, they moved their mission up the Rio Maniqui about 2 years later and changed its name into Misión Fatima. There, much closer to the Tsimane' and largely undisturbed by intruders, the priest had four future aspirations in mind. First and foremost, the mission had to become economically self-sufficient and the Tsimane' should equally benefit from economic development. To this end, 50 ha of forest were cleared and large-scale cultivation of cash crops like cacao and coffee promoted. Furthermore, the priest started to introduce cattle ranching and generated money from the extraction of timber. A second focus was schooling. The missionaries set up a primary school and strongly believed that education would empower the Tsimane' against their white foes. Thirdly, the mission promoted health care and set up a health post for ill people to be treated with modern medicines. Their final and yet most central goal was to indoctrinate the Tsimane'. A chapel was constructed and the Tsimane' were asked to go there every Sunday if they were to accrue health or economic benefits from the mission (Ellis 1996; Huanca 2006). As the mission had to attain economic self-sufficiency within less than 3 years, the priests put particular importance on the promotion of economic development. In the 1960s, the mission bought a tractor, a rice peeler and a diesel generator. It was a novelty in the area and, curious about these new developments, many people moved to Misión Fatima. The community grew enormously and people appreciated the efforts undertaken by the missionaries. Still, attempts to integrate the Tsimane' in the regional market economy remained a localised phenomenon of Misión Fatima and the efforts did not spread to other Tsimane' communities. Things changed with the death of father Martin Baur, a charismatic missionary leader of whom, even today, people speak of with reverence. Following his death, the place has lost

much of its former glory and cattle ranching and cash crop farming became largely abandoned. Ellis (1996) asserts that the majority of the Tsimane' families who still live at Misión Fatima or in surrounding communities have largely retained their traditional household economy that constitutes hunting, fishing and the tending small agricultural plots.

On the other hand, the presence of the New Tribes Mission, a group of Protestant missionaries, is today felt much stronger in many aspects of Tsimane' life. The New Tribes Mission is a branch of the Summer Institute of Linguistics, a US based institution that is primarily concerned with the social and spiritual concerns of native peoples. In 1954 they entered into an agreement with the Bolivian government to officially endorse schooling programmes among indigenous peoples in the Bolivian lowlands. When they started to work with the Tsimane' in 1960, their main goals were threefold; to initiate evangelisation by translating the Bible into their native language, to provide educational and health services and to support the Tsimane' in their economic progress. What probably added to their influence in the region was their recognition of the need for bilingual teachers and community leaders to facilitate their defence of communal land rights. The bilingual teacher training was initiated in 1973 and those Tsimane' men interested would receive an intensive 3-month training that equally involved a range of methods on how to teach and preach. In 1984, the New Tribes Mission bought a piece of land on the outskirts of San Borja where it constructed a bilingual training centre, a health post and a radio station. The centre has since provided the infrastructure for short-term vocational training courses on current educational issues, most of which are highly appreciated among the Tsimane' teachers.

Parallel to teacher trainings, New Tribes missionaries have been active in translating the Bible into Tsimane' and providing bilingual didactic material. Huanca (2006: 98) argues that, on the one hand, the translation of the Bible gave them the opportunity to establish permanent contacts with the Tsimane'. On the other hand, the Tsimane' regarded the translation of the Bible as a respectful token towards their culture and native language. To disseminate the word of God in the Tsimane' language, the missionaries introduced portable radios. Today, nearly all extended families own a transistor radio and are eager to enjoy one of the many programmes offered. Tsimane' men are often seen carrying a radio around their neck when embarking on a day's work on the field, and daily conversations are almost always accompanied by the cracking sound emanating from the radio tied to the crossbeams of their dwelling. This is not surprising if we take into account that at present, people can daily choose from around 7 hours of community dialogues, educational programmes and above all, religious messages. Adding to their daily radio presence, missionaries also try to physically visit the communities at least once a year. Their visits are most appreciated by the Tsimane' as they bring along iron tools, fish hooks, clothes or other market articles. They normally stay for 2 days, organise a mass service and attend school classes. At the same time though, they engage in traditional community celebrations. By the late 1980s, the missionaries began to take a firm stand against the growing encroachment policies and exploitative wage labour and trade relations that had been a reality for the Tsimane' for a long time.

In an attempt to organise them collectively, so they could defend their rights, the New Tribes were the driving force behind the creation of the Tsimane' Council (*Gran Consejo Tsimane'*) in March 1989. The Tsimane' Council would be the official body representing all Tsimane', thereby facilitating political negotiations on land claims.

It appears that contemporary missionary efforts have indeed impacted on the Tsimane' ways of life and supported their integration in the regional economy. Yet approaches and impacts between the two groups of missionaries differ. The Catholic priests worked in one community only and focussed primarily on fast economic transformations in an attempt to relieve the Tsimane' from their misery and poverty (Huanca 2006). These attempts brought about changes in the natural environment and introduced the Tsimane' to the monetary economy. The Protestant missionaries, on the other hand, opted for a more inclusive approach on improving education and health care, with less focus on economic progress. Through their large-scale teacher trainings that involve all communities and the design of bilingual educational materials they are more broadly known and, for the most part, respected. Still, Byron (2003) found that missionary efforts have had varying impacts on traditional religious orientations and practices among the Tsimane'. According to her study, communities closer to the town of San Borja have more profoundly altered their religious beliefs than those in remote areas. On an interesting footnote, however, Byron also found that the peoples' approach to this newly acquired religion (people may now consider themselves as either a member of the Catholic or Protestant religion) tends to be rather pragmatic. People do not appear to invest a great deal of their time in catholic or evangelical rites and animistic beliefs and traditional socio-cultural practices are still widely embedded in their daily lives. One of these practices is the drinking of manioc beer, for example. Indulging in regular beer feasts is just one of the pleasures that still permeate Tsimane' community life. For the rest of this chapter, I will look at those features that constitute Tsimane' sociability and community life.

3.5 Settlement and Community Life

3.5.1 Demography and Settlement

As for the Tsimane', a general census on lowland ethnic peoples in Bolivia reveals that the Tsimane' are the fifth largest indigenous group representing 4% of the entire native population of Bolivia (CIDDEBENI 2002). The most recent source on general Tsimane' demography dates back to 2001 and provides an estimate of 8,000 people (Godoy et al. 2005). The earliest information on population trends was provided by Nordenskiöld (2001[1913]). He estimated the total Tsimane' population to range between 2,000 and 3,000 for the year of data collection in 1913.[3]

[3]In his informative travel records he examined one community and concluded that between the years 1897 and 1912 each year 83.5 children in 1,000 people were born – compared to Russia where between 1896 and 1900 the number was 48.4, in Sweden 26.9 (Nordenskiöld 2001[1913]: 176).

Following Reyes-García's (2001) suggestion on Tsimane' growth rates (see Table 3.1.), population grew at an annual rate of 4.86% during 1971–2002. According to these estimates, the population has more than tripled in the last three decades. These growth rates are extremely high compared to annual population growth rates of other indigenous Amazon dwellers.[4] The data provided, however, undoubtedly lacks the reliability and validity that would be necessary for calculating well-grounded demographic trends. First, most figures are merely estimates; secondly, methods for data collection have not been provided in most of the literature stated; thirdly, only within the last decade or so have many Tsimane' obtained identity cards from local municipalities. It may be assumed, therefore, that many individuals were not included in the national census prior to this event.

It is likely that in their course of history the Tsimane' have developed their demographic pattern according to periodic events that required 'adjustments' to such fluctuations. This assumption is based on two notions: periodic flooding and epidemics. Still today, Tsimane' settlements are periodically exposed to river flooding in January or February every year and housing sites are evacuated. I recall a severe flooding incidence in early 2006 when several Tsimane' settlements remained under water for several weeks and people had to relocate their dwellings. As major field crops were destroyed, villagers received emergency food aid immediately following the floods. Epidemic outbreaks are considered the second extreme event that must have brought about demographic adjustments. What we know for certain is that the Tsimane' have been struck by both tropical and Western diseases. Travel histories mention how the Mosetene and Tsimane' were affected by various smallpox outbreaks in 1886, 1894 and 1913. In the 1930s, some Tsimane' communities were affected by measles and no cure had yet been found for adequate treatment. From historical accounts we know that in former times when a person fell seriously ill, the rest of the family would avoid all kinds of contract with the sick person and even move to another place in order to escape from the malicious spirits haunting the ailing individual.

Table 3.1 Population estimates of the Tsimane' according to national census (adapted from Reyes-García 2001)

Population	Year	Source
2,000–3,000	1913	Nordenskiöld (2001)
1,800	1971	Kelm (1972)
2,000	1974	Riester (1978)
5,000	1989	Comisión Socio-Económica (1989)
5,694	1994	CIDDEBENI (1999)
7,385	1999	CIDDEBENI (2002)
8,000	2001	Godoy et al. (2005)

[4]The Matsigenka of Peru, for example, have an annual growth rate of 2.30–3.19%.

Gurven et al. (2007) examined the regional and temporal trends in mortality patterns among the Tsimane' population between 1950 and 2000 and found that villages in the remote forest regions show the highest overall mortality, while half of all deaths are due to infectious disease, especially respiratory and gastrointestinal infections. Gender differences in mortality are mainly evident during reproductive adult years and late adulthood. Women in fact show a 35% higher mortality from 16 to 39, while men demonstrate a 50% higher mortality after 60. Riester (1976) contends that the Tsimane' practice infanticide on children who are born deformed, a common practice also found in small tribal communities.[5] Gurven et al. (2007: 388) somewhat defuse this assertion, emphasising the relatively low numbers of infanticide among the Tsimane' when compared to reported numbers for other tribal people in the Amazon region. According to their long-term analysis, infanticide accounted for merely 5.3% of all infant deaths between 1950 and 2000.[6]

Albeit somewhat loosely, we find Tsimane' demography to be linked to the formation of settlements. While early historical accounts have come up with different conclusions concerning the stability of early Tsimane' settlement patterns,[7] what we have sure evidence of is that their choice of settlement would largely be dictated by the geographical vicinity of a river. Traditionally, most hamlets were formed on a temporary basis and rarely exceed 5 to 6 households related by blood; a measure that prevents the overexploitation of game and fish resources. This strategy has also been common with other Amazonian peoples; the Matsigenka of the Peruvian Amazon, for instance, are known to move to a new homestead every 4 years (Johnson 2003). On a similar note, Descola's (1996) study on the Achuar equally argues that the rapid depletion of important game resources is the main trigger for the peoples' prevalent 'taste for movement'. Today, the Tsimane' are becoming increasingly sedentary. Growing missionary influences, increased exposure to the market economy and the introduction of primary schools in many communities have all instilled a sense of community among the Tsimane'. These developments have created opportunities for integration and leadership that would otherwise not have taken place. Formal community structures facilitate the transactions needed to negotiate and obtain legal land titles and, in so doing, combat the growing intrusion of cattle ranchers, colonists or loggers into Tsimane' territory. Changes in Tsimane' settlement patterns, however, have occurred to different degrees. Today, for example, only 60% of their villages have primary schools (Godoy et al. 2005: 143), while others,

[5]See, for example, the Bushmen of the Kalahari Desert (Lee 1979) and the Matsigenka in the Peruvian Amazon (Johnson 2003).

[6]Gurven et al. (2007: 388) further reported that the main causes for an infant's pre-natal death are due to the mother's traumatic fall (36.5%), from over-working or carrying too much weight (16%) and maternal sickness (15%). An additional 7% was self-induced as a means of spacing births or because of doubts concerning paternity.

[7]While some early historical accounts characterize the Tsimane' as a semi-nomadic tribe (Metraux 1948; Riester 1976), others emphasise that many Tsimane' settlements have geographically stable histories. Hissink (1955) and Hissink and Hahn (1952) on their adventurous travels along the Rio Maniqui describe settlement clusters which can still be located in the same places today.

mostly smaller and more remote settlements still retain their traditional social structures and are practically invisible on official maps.

A common feature for most Tsimane' families are their great mobility. The Tsimane' are enormously mobile and often move seasonally to take advantage of fluctuations in natural resources. Yet despite their great mobility it is also interesting to note that most of the moves they make are within their own ethnic territory and within particular boundaries for each extended family cluster. During certain periods of the year, families may move to river beaches and exploit the abundance of fishing resources. At other times when game animals are fattest, it may well be the forest that becomes a more solicited temporary dwelling place.

3.5.2 The Private and the Public Sphere

To the outside observer, the everyday social world of the Tsimane' seems to strike a balance between periods of dispersed nuclear family living, aggregation in extended family networks, and community life. Yet it is the household that provides the heart of Tsimane' sociability. Though providing for a single unit, the household is strongly embedded in a larger social setting that includes extended family networks as well as an attenuated network of friends, neighbours and other actors constituting life in the community.

3.5.2.1 The Household

The Tsimane' household provides for the main unit for production, consumption and social reproduction. People preferably live in nuclear family dwellings, spaced well away from their neighbours' homesteads. I was told by my Tsimane' hosts that first and foremost, the vicinity to kin members provides for the main parameter when selecting a housing site. What comes next is the need for a good and reliable source of water, followed by the presence of fertile soil. Though most Tsimane' households are built along the Rio Maniqui, they are not directly built on the river bank but a further distance away. This is mainly for two reasons: first, fluctuations in water level from wet to dry seasons bring the inherent danger of flooding, as happens periodically. The second reason is no less important, since maintaining a short distance away from the river makes it just about possible to abide the persistent presence of mosquitoes and sand flies that infest the riverbanks, particularly during the wet season. A typical Tsimane' dwelling impresses the outsider by its apparent sturdiness. The traditional Tsimane' house is rectangular, about 6 m long and 4–5 m wide, with a palm-leaf roof that peaks about 4–5 m off the ground. Dwelling huts in more remote communities are still found without any walls or simply one palm-wood wall facing south for protection against the strong *surazo* winds sweeping the area in May and June every year. But even there, more modern constructions comprising four walls and a single doorway are becoming increasingly

popular. On first entering from bright daylight, a walled house can be quite a dark and smoky place to be. Each household has its own clearing that serves as a patio and a separate kitchen building that is located near the main dwelling.

From an early age girls and boys are socialised into performing the duties that they will be expected to carry out as an adult. Girls usually help their mothers in cooking, fetching water and firewood, sewing and weaving and taking care of siblings, whereas boys can be observed playing with bows and arrows, catching small fish at the riverbanks and often accompany their fathers on hunting trips. Both girls and boys are raised to work in the fields, performing tasks such as sowing rice or weeding. In communities where there are schools, usually boys are more encouraged to attend than girls, as they often have to look after their siblings at home. Husband and wife form the centre of production and reproduction and are quite independent from other households. They are free to decide when to leave the hamlet and wander off into the forest or on a fishing trip. A Tsimane' marriage may be considered a partnership of two equally skilled individuals, each with a separate sphere of influence, yet whose different roles underline their importance as a complementary pair in everyday production. Their socialised behaviour tells a story of clear differentiation, one that leads not to segregation and discrimination between the sexes, but to mutual respect and interdependence.

Respect for personal space within the household is also expressed in the general pattern of property rights. All kinds of household resources have, in fact, distinct owners. Ownership is created through the use of labour and can only be transferred through barter or gifting. It is a social rule that is still widely respected among the Tsimane'. One incident brought this home to me upon my return to the village of Campo Bello after an absence of 1 year. When inspecting my former dwelling, Andrea proudly showed me the banana tree I had planted when I first arrived to the community. She pointed to the tree and described meticulously how she had cared for it while I was away and that she was happy to now hand it back to me. Everything that belongs to the household is individually owned. The house belongs to the man who built it and people do not commonly enter the house when family members are away. The notion of ownership begins young and from an early age, every child is socialised into keeping track of his or her possessions. When a child is asked to name all his or her belongings, a comprehensive list of all the items ranging from pencils to pets is quickly provided. Manufactured items like bows or arrows equally contain small signs that give hints of the producer. People can easily identify the items fabricated by them and generally remember who gave them the items they own or, in case of items obtained at the market, where, when and from whom these commodities were obtained.

3.5.2.2 Beyond the Household

Every nuclear family is embedded in a larger collective. What traditionally used to be the extended family network only, is the larger community setting today, that is increasingly becoming important. Since every kind of outside interaction goes hand

in hand with certain sets of behaviour rules to be followed, I would firstly like to inquire into the reproduction of kinship relations before moving the discussion to life in the larger community setting.

Kinship and kinship ties are reproduced through marriage. The Tsimane' traditionally followed a Dravidian kinship system of cross-cousin marriages which centred on the extended family and formed the basis for social organisation (Chicchón 1992; Daillant 1994; Ellis 1996). Today, polygyny and other traditional forms of prescribed marriage have for the most part been eroded and given way to monogamous relationships. Especially in larger settlements under strong missionary influence, traditional practises have widely been discouraged and even prohibited. According to Tomás Huanca (2004, pers. commun.), polygynous marriage patterns still exist in very remote communities and account for nearly 3% of Tsimane' families. Tsimane' kinship terminology prescribes marriage with a person falling into the category of *fom'* (cross-cousin) and still today, many Tsimane' regard this category to be the only correct marriage. In Ellis' (1996: 80) view, choosing a 'correct' marriage partner serves two purposes. First, marrying a close relative is to avoid the unknown attributes of powers of sorcery and anger attached to people unknown. Secondly, this kind of marriage enables an enriching of the kindred network, often across large distances. Tsimane' marriage patterns though have undergone changes in recent years. In San Antonio, for example, a large Tsimane' community close to San Borja, I have observed a growing number of exogamous unions between Tsimane' and Yuracaré, Movima and other non-Tsimane'.

A woman is ready for marriage after her first menstrual period and a man usually looks for a potential bride once he has established a reputation in hunting, fishing and farming. When contemplating marriage, both men and women particularly look for someone who is hard-working. It would be a grave error to marry someone who is lazy as such a spouse will fail to hold up his or her end of the division of labour. Among the possible spouses, an attractive wife is defined as much by her expert skills in the household or economic reproductive sphere (e.g., being an expert weaver) as well as by conformation to the indigenous canon of physical beauty. For a woman, on the other hand, a good husband is one who satisfies the biological needs of his wife (by fulfilling his sexual and hunting obligations). Only when these expectations are fulfilled, Tsimane' adolescents are ready for marriage. When a man and a woman court, their families vigilantly cross-examine their prospective in-laws. If the marriage brings together a man and a woman from different communities, the common post marital residence pattern is for the man to move into the bride's home and work for her father during a year or two.[8] Following Matteson's (1954: 79) description of the indigenous Piro, 'matrilocal residence patterns are a matter of protection for the bride and of mutual help'. Indeed, if a marriage fails during this time, the newly-wed husband may simply leave; a move that equals

[8]Ellis (1996: 52), however, warns about establishing strict rules of rigidity on Tsimane' residence decisions, as she has various case histories that simply do not comply with such patterns.

divorce. After the trial period, typically marked by the birth of the first child, the young couple has the freedom to choose where to settle next and establish their own household unit.

A glimpse on the housing topography within the boundaries of a larger Tsimane' community reveals that extended families repeatedly live in their own clusters. Like stones in a mosaic, this collection of individual huts tends to retain its shape even when integrated into a larger community. Migration histories document that households tend to remain in the general vicinity of a group of families over time. Those smaller units usually consist of siblings or cross-cousins that have remained closely linked through intermarriage. The close social ties between extended family networks are usually expressed through the sharing of food and other valuable items. Ellis (1996) refers to the extended family as a kind of social net to ensure that all family members are looked after. The fact that Maberto's wife had left him, for example, did not mean abstinence from well fermented manioc beer as he was allowed to freely participate in beer drinking sessions at his brother's. The extended family network equally allows for a more flexible distribution of skills. If a man's favourite pastime is hunting, he is welcome to engage in frequent hunting trips and share it equally among extended kindred upon his arrival back home. In return, someone else may invest more time to look after the manioc or rice plants, thereby optimising the overall time investments to ensure a varied diet for all members. Yet despite certain intimacies shared by extended kindred, individual households still take measures to maintain some level of privacy. Individual dwellings, for example, are repeatedly found a small distance away from each other, allowing a row of plantains or fruit trees to separate them and ensure some possibilities for retreat. Also, a number of households clear the individual trails leading to their huts so as to ensure that people heading on the main path need not pass any given house unless it serves as their destination. When newly-wed Roque built his house within the environs of his parents' patio, he made sure that the entrance was placed well away from his parents' entrance, facing the river. It was a measure to protect their still young intimacy and to come and go at the pace the young couple would decide.

Life in the community provides for the second sphere of social living. Interestingly, in terms of daily time use, which will be discussed in detail in Chapter 5, the Tsimane' only spend a small fraction of their time resources in communal settings. These periods of interaction, however, are undeniably significant for social reproduction and are generally indulged in with joy. Communal work provides the first such social gathering. It has become increasingly important and is mostly considered a male task. Clearing communal pathways, for example, requires a certain date to be set by the village leader and people gather outside the school building. It seems that these tasks are taken lightly and when moving slowly forward along the forest path, it almost appears as a social event where men fire off jokes. When tired from mowing and weeding, a communally prepared meal by some of the local women awaits the hungry men. The meal rounds off the few hours of group interaction, during which strenuous physical work is generally combined with playful sociability. In school communities, communal work efforts also comprise the regular cleaning and maintenance of the school building. Just like in our societies,

Tsimane' parents are worried about a leaking roof or a brittle wooden post that might endanger the lives of their children attending classes.

A central feature of community life is the sharing of communal beer feasts. Sharing *shogdye'*, strong homemade manioc beer, with other community members forms the core of Tsimane' sociability and strengthens their ethnic solidarity. The social relations created in beer distribution reach beyond the confines of the household and include co-residents and even *napo'*, non-Tsimnane', visitors. As many Tsimane' candidly express, there is little point in visiting close kin or neighbours in the absence of beer. Beer is always offered to passers-by, if present, and its consumption creates a somewhat affective atmosphere. The production of beer is essentially a female domain and takes two or three women a whole afternoon to prepare. Sweet manioc is the main ingredient of most kinds of beer and depending on the recipe, may be combined with maize and/or ripened or slightly sour plantains. At times, beer is made from maize alone but it is the perfect mixture of maize and manioc that is believed to ferment into the most enjoyable beer necessary for the feast to be a success.

3.5.2.3 Patterns of Leadership

The Tsimane' are a perfect synthesis of those enigmatic inclinations peculiar to many societies of Amazon Indians. 'Egalitarian' in any typology of comparative political systems, they have until recently lacked institutions and democratically elected community leaders. The concept of leadership was largely absent in traditional Tsimane' society and, due to their healing powers and their ability to communicate with all kinds of natural spirits, only shamans (*cocojsi')* would have a higher hierarchical standing within the larger social setting. When arguments arose, people would frequently resort to a shaman, hoping to settle the dispute and heal the people from anger or distrust. Their healing powers were commonly believed to be supernatural and still today individuals seek the advice of a shaman when feeling unwell. Nonetheless, the role of shamans is increasingly losing importance in the contemporary Tsimane' world setting as new leadership roles are created. On the community level, increasing exposure to national society has urged the Tsimane' to elect community leaders. Based on a common system used in national communities, there are three authority roles: the *corregidor* or village chief, the *alcalde* or mayor and the *presidente de junta escolar* or president of school union. Ideally, all three representatives should be familiar with the national language, Spanish, as they act as mediators between their communities and the outside world. Likewise in school communities, teachers repeatedly enjoy a privileged status and authority over other community members, often based on their educational accomplishments as well as their Spanish language abilities.

Finally, the respect individuals evoke is not static but rises and falls within a person's life cycle. Seniority, for example, invokes a higher social standing as compared to younger members of the community. In Campo Bello, Angel's house was considered the social centre of the extended Tayo family cluster. His children would pay regular visits to him and social gatherings mostly took place on his patio. On a similar note, community members who excel in one productive activity or another

tend to enjoy an overall higher social standing than others. Others are known for their sharp wit, astuteness or wisdom. All these attributes equally infer a certain sense of social acceptance and status.

3.6 Conclusion

This chapter examined the various angles from which to look at the different dimensions that constitute the Tsimane' world. It opened up with a general description of the biogeographical features of the Tsimane' territory. Their natural habitat harbours a variety of tree species, game animals and soils. Followed by a discourse on the cultural appropriation of natural resources, I have described the ways of using nature in terms of spatial segmentation – forest, river and the farming site. The latter, however, solely focussed on the cultural beliefs of horticultural practices, as the stages of the Tsimane' agricultural cycle and the labour involved will be treated in the following chapter. In their worldview, people interacting with nature need to show respect for the natural resource they utilise in order not to upset its guardians. The Tsimane' daily routine therefore combines the constant need for material satisfaction with the fear of being bewitched. The discussion then shifted to trace the peoples' history of contact, from sporadic encounters with outsiders to gradually more permanent links with the regional market economy. In the last section of this chapter I have given a short account of the social setting that forms part of everyday life. We can distinguish between the social topography within the confines of the household where the married couple comprise the centre for productive and reproductive activities, each with their own and equally important sphere of influence. Beyond the privacy of the household, people are well aware of the sets of behavioural rules governing their interaction with others. Extended family networks ensure food security and in the absence of a spouse, provide the necessary social net for individual relatives. Socialising in groups is mostly enjoyed when accompanied by manioc beer; while only a small fraction of time is actually used in communal activities, these periods of interaction are increasingly cherished by community residents. While it is hoped that the first two chapters have given the necessary theoretical and empirical setting, we can now return to the permeating thread of this monograph: the empirical analysis of the environmental relations the small Tsimane' community of Campo Bello maintains. It is this interaction at the society–nature interface we are now about to explore.

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