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# THE AVA-GUARANI:
# THEIR DEVELOPMENT AND WELL-BEING

BY

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ACKNOWLEDGMENTS

This research was not done on the Ava-Guarani but for and with the Ava-Guarani. More importantly, it was not done with their consent but at their request. They have expressed to me, time and time again, that they want us to know who they are, what their lives are like and what they believe in, so that we may respect them as they respect us. I wish to express my gratitude to all the Ava-Guarani.

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This work is dedicated to Frank Beck, Shah Wali Kahn, Father Nicolas DaCunha SVD and C. David Anderson: they who led the way.

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THE AVA-GUARANI:
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For the past century the Ava-Guarani have remained sheltered in the tropical rain forest of Eastern Paraguay. However, in the last decade dramatic changes have occurred, such as the establishment of the hydro-electric project Itaipu, which has lead to the destruction of the rain forest and to the exposure of these people to new conditions. Many questions arise as they adapt to this evolving environment.

The primary objective of this research was to increase our understanding of the Ava-Guarani, an important cultural group little described up to the present. This research reviewed, in general terms, their economic systems, history, kinship and socio-political hierarchies, character of their religion, agricultural practices, land distribution system and particularly, their health status. The most significant conclusion is that the Ava-Guarani are not being assimilated into Paraguayan

culture but rather are adapting to their changing environment through modifications in their traditional culture.

The purpose of this research was to test the hypothesis that the Ava-Guarani who live "within the cash-economy" are healthier than those who live "outside the cash-economy." A survey was completed between June and December of 1980 in five villages where ten households in each were studied, and their members given physical examinations. Analyses of their kinship and economic systems indicate that the Ava-Guarani have four economic inter-related and inter-dependent sub-systems that are presently ongoing and that each sub-system serves a function in the adjustment of their culture to the recent changes in the socio-economic and natural environments. It was found that individuals participate in two or more of these sub-systems throughout their lifetime. Quantitative data on the health of the people were aggregated according to their economic sub-systems and the results were compared with one another. The results suggest, although not conclusively, a negative correlation between the "cash-economy" and general well-being. Further research on these sub-systems and their functions is necessary in order to demonstrate the full nature of this relationship.

# CHAPTER ONE
# INTRODUCTION

There are between 8,000 and 10,000 Ava-Guarani, whose very existence is being threatened by the rapid changes in their socio-economic and natural environments. Are these people adapting to these dramatic changes? Are they becoming assimilated into the Paraguayan culture? There are no scientific studies which objectively explore the Ava-Guarani adaptation to these changes, yet an impact assessment should be the first step taken before development projects are started with the Ava-Guarani. In Paraguay, a number of organizations are in the process of implementing programs to assist them but there is little harmony between these programs, their methods and the specialists who designed them. These organizations can be classified into three categories: those who seek to assimilate the Ava-Guarani into the mainstream of civilization as quickly as possible; those who wish to assimilate the Ava-Guarani at a gradual pace; and those who totally reject assimilation.

The anti-assimilationists believe that the Paraguayan government should guarantee the Ava-Guarani sufficient resources (primarily land and water) (Chase-Sardi 1971). This would enable them to generate for themselves their basic needs. This approach seeks to establish independent and self-sufficient communities which would then serve as strongholds for their traditional culture. The anti-assimilationists believe that by being outside the cash-economy the Ava-Guarani are less susceptible to exploitation by outsiders and that as subsistence farmers

they will be able to maintain an acceptable standard of living and a satisfactory quality of life. In addition, they would utilize their resources more efficiently. The disadvantage to this approach is that the people outside the cash-economy have limited access to manufactured goods, modern technology, education and socio-economic mobility (Chase-Sardi 1971).

The proponents of assimilation argue that isolating the Ava-Guarani is in effect reducing their freedom of choice and condemning them to a backward way of life where they will always be defenseless against exploitation. In addition, the Ava-Guarani in traditional communities do not contribute to the national economy. Only when fully integrated into the Paraguayan way of life will they be able to provide for themselves, receive an education and better health care, opt for better jobs and raise their standard of living. The Paraguayan government, in the assimilationists' opinion, should provide the Ava-Guarani with the same services (and require the same responsibilities) as it does of other Paraguayan citizens. They also believe that it would be inhumane and an economic burden to establish reservations that would be nothing more than human zoos (Bejarano 1974).

The people who support gradual assimilation are sensitive to the realities of the cultural, economic and biological shock that the Ava-Guarani would suffer if they are not given time to adjust. These people design projects that will formally educate the Ava-Guarani while their colonies serve as refuge until they are prepared to cope with the outside world (Asociación Indigenista del Paraguay 1977a).

In practice these approaches have distinct goals. The anti-assimilationists would prefer to see the Ava-Guarani continue as subsistence

farmers, whereas the assimilationists believe that the Ava-Guarani should be brought into the cash-economy; but the two factions differ as to how this can be accomplished. The fastest method would be to allow the Ava-Guarani to enter the labor market and to encourage them to earn a living like other Paraguayans. The more modern approach is to introduce cash crops into the existing farming system, thus providing a cultural base for the conversion from a subsistence economy to a cash-economy.

This research paper makes the assumption that all three approaches seek to establish the most beneficial socio-economic system for the Ava-Guarani. The task of this research is to determine which of the methods and their corresponding lifestyles can be shown as superior on the basis of objective measurable criteria. The principal hypothesis that is tested by this research is that the Ava-Guarani in the cash-economy have a better quality of life than those outside the cash-economy.

Today, there are Ava-Guarani who are subsistence farmers (who produce for home consumption), while others are peasants (who produce for the market) and still others are day laborers. This situation provides the perfect opportunity to compare the three sub-systems in order to determine which is most beneficial for the Ava-Guarani. The following criteria are used to delineate distinctions in the comparison of these economic sub-systems: 1) crops (and livestock); 2) technology; 3) employment; and 4) commercialization. To measure each of these variables a survey schedule was designed (see Appendix A). There are questions that determine what each household plants, what livestock it owns, what technology it uses, what type of commercialization is practiced, and what type of employment it has.

TABLE ONE
AVA-GUARANI VILLAGES

| Departments | Villages | Population | Land Tenure |
|---|---|---|---|
| Alto Parana | Acaraymi | 625 | Colonia SVD |
| | Anakua'i | 55 | Estancia Retamozo |
| | Arroyo Guazu | 315 | Industrial Paraguaya |
| | Aregua Regua | 30 | Estancia |
| | Arroyo Hoby | 100 | Itaipu |
| | General Diaz | 150 | Norte do Paraná S.A. |
| | Itakyry | 220 | Industrial Paraguaya |
| | Kirito'cue | 225 | Norte do Paraná S.A. |
| | La Fortuna | 103 | Colonia Maracayu |
| | Legi'cue | 20 | Estancia |
| | Paso Cadena | 327 | IBR |
| | Paso Ita | 100 | N. Gonzalez Navero |
| | Puerto Indio | 100 | Itaipu |
| | Puerto Sauce | 242 | Itaipu |
| | Pira Reta | 30 | Estancia |
| | Rancho Potrero | 50 | Estancia |
| | Tatiyupi | 103 | Estancia |
| | Vaca Reta | 150 | Industrial Paraguaya |
| | Veintitres | 40 | Estancia |
| Canendiyu | Alika'i | 30 | Itaipu |
| | Arroyo Manduvi | 100 | Brazilian Colonization |
| | Arroyo Mokoi | 500 | IBR |
| | Carapami | 42 | IBR |
| | Cerro Campi | 150 | IBR |
| | Corpus Cristi | 72 | IBR |
| | Guavira poty | 272 | ? |
| | Itambey'i | 72 | Itaipu |
| | Itanarami | 272 | IBR |
| | La Fortuna | 466 | IBR |
| | Lagunita | 195 | IBR |
| | Mboiyagua | 515 | Colonia Nacional |
| | La Fortuna'i | 30 | IBR |
| | Pira'i | 18 | Itaipu |
| | Puerto Marangatu | 40 | Itaipu |
| San Pedro | La Quebrada | 249 | Colonia Nacional |
| | Santa Isabel | 320 | Colonia Nacional |
| Amambay | Paso Historia | 165 | ? |

Source: This information was obtained during the visits made in 1980 and through interviews with the leaders of the Ava-Guarani.

Because health is an indicator of well-being that can be measured empirically and objectively, it was chosen as the principal indicator for this research. The primary hypothesis that is tested is that the Ava-Guarani who are in the cash-economy are healthier than those who are outside the cash-economy. A number of corollaries are also tested regarding health. For example, nutritionists believe that nutrient consumption is related to income and that people from a low-income household would have a poorer diet; therefore, they should manifest poorer health than those in a higher-income household. Another issue treated refers to whether or not the Ava-Guarani women have poorer health than other Ava-Guarani, and whether girls have poorer health than boys. Another closely related theory that will be examined is whether mortality rates are higher in those households which are outside the cash-economy (Abelson 1975).

The sample was selected by taking a list of all the Ava-Guarani villages (see Table One) and with the use of a list of random numbers five villages were selected to be surveyed. In the end, one village was substituted for another because the first was inaccessible without private transportation. Random sampling was selected as the method of chosing villages and households within the villages because there is an equal probability of incorporating into my sample all the variables which influence the situation being studied (Pelto and Pelto 1970:131). The survey would have been superior if a longitudinal study could have been done; however, given the constraints in time and money, the procedures employed seemed the best.

As the interviewer, I speak the three languages understood by the Ava-Guarani and the people around them: Spanish, Portuguese and Guarani.[1] When I was a Peace Corps Volunteer I lived with the Ava-Guarani for two years and I had visited (between 1976 and 1979) most of the Ava-Guarani villages. During the study I would stay in one of the school rooms, with one of the missionaries or in the house of one of the village leaders. Once I arrived in a community to start the survey, I first discussed the proposed study with the chief, the community council, the priests and the other community leaders. After they understood what the research entailed, how it was to proceed, and what its ultimate goal would be, the work began. Then each community was mapped and from this, ten homes for the survey were randomly selected in each village.

Interviews were conducted with the head of the household (94 percent of the time this was the eldest male). Several trips to some homes were often made to complete a full interview. In every case the interviewee was informed about the project, procedures and goals; and voluntary participation agreed to. Through informal conversation and observation, the questionaires on subsistence activities were completed. Of course there are inherent weaknesses in the survey method used: the accuracy of the information obtained depended upon the recall ability of the interviewees and their willingness to tell the truth. Aside from immediate observations, the answers could not be verified.

The information concerning health was obtained by giving physical examinations to all members of the household. The physical examinations

[1]Throughout the report Guarani words are used, spelled in accordance with the *Diccionario Castellano-Guarani y Guarani-Castellano* by Antonio Guasch. In Guarani the accent is on the last syllable unless otherwise stipulated and the letter "s" is not used to pluralize Guarani nouns.

followed the guidelines set forth by George Christakis, M.D. (Christakis 1972). Only volunteers were sought; a special effort was made to insure that even children were not made to submit against their will. A total of 3 persons, out of 227 surveyed, refused to submit to tape and adipometer measurements. Examinations were given in the open and under the careful vigilance of all interested. While performing the examinations, full explanations would be given to all subjects (see Health Research Strategy in chapter on health, and see Appendix B).

Schedule interviews were supplemented with data received in informal interviews with a variety of informants, and by attending community functions such as soccer games, council meetings and the ever present Prayer Dance (*jeroky-ñembo'e*).

The definition of socio-economic systems, however, is meaningless by itself and only by understanding why the Ava-Guarani follow a particular system can we comprehend what other viable options are open to them. To understand the reasoning behind their selection of an economic system, 3 inter-dependent elements must be taken into consideration: history, general culture and environment. Chapters Two and Three examine some critical aspects of their history and culture. As in the case of most traditionally non-literate people, it is unfortunate that many significant events which have affected the Ava-Guarani have never been recorded.

The chapter on socio-economic activities is a general ethnographic synopsis, covering some aspects of their socio-political hierarchies, kinship, technology, culture and customs. Only that material that is relevant to the focus of this thesis is included however. Their religion is so overwhelmingly important and it plays such a significant role that it is necessary to delve into it in some depth. Most of the

information concerning culture and religion was collected during my field research and is new material reported here for the first time.

This research demonstrates that it would have been inadequate to have limited the study to the statistics on subsistence methods and health status; even though analyzed properly they, by themselves, do not depict reality. By incorporating the information concerning the Ava-Guarani history and culture, a comprehensive picture of these people is presented. This additional information does not just "add meat to the bones" or "to place it in context," but by taking the culture and history of the Ava-Guarani into account a number of variables that bear significantly upon the outcome of this research are identified.

# CHAPTER TWO
# HISTORY

## The Tupi-Guarani

The most comprehensive work on the history of the Tupi-Guarani are a series of books by Branislava Susnik, Director of the Museo Etnografico "Andres Barbero" of Asunción, Paraguay. She explains that most people have the misconception that the Tupi-Guarani are a racial group or tribe: TUPI-GUARANI is in fact one of four major linguistic families in lowland South America. It is also a term used to refer to all (or some) of the people who speak TUPI-GUARANI languages (Susnik 1975).

Julian Steward used his cultural ecological criteria to classify the Tupi-Guarani into two groups: the smallest group is composed of Marginal tribes which he describes as "hunting, fishing and gathering nomads with simple socio-religious patterns"; the second group he defines as Tropical Forest tribes who "possess farming, dugout canoes, woven baskets, loom weaving and pole-and-thatch houses. Many Tropical Forest tribes also have a war complex which features captive taking, cannibalism and a display of human trophies" (Steward 1946:85).

To differentiate between the culturally distinct Marginal and Tropical Forest peoples, the following names will be used in the following manner in this paper:

| | |
|---|---|
| TUPI-GUARANI: | One of the five major language families in lowland South America. |
| tupi-guarani: | The Tropical Forest peoples who speak TUPI-GUARANI. |
| Ca'agua: | Also seen as Ka'aygua, Caaigua, Caaygua, or Caaingua; is a term used to refer to the southern tupi-guarani, especially from 1770-1870. |
| GUARANI: | The language used by the Paraguayan mestizos and by the surviving tupi-guarani. |
| Guarani: | The tupi-guarani people of the south since 1870. |
| Ava-Guarani: | The sub-group of the Guarani who are the focus of this research. |
| Paraguayans: | The mestizo population of Paraguay who speak GUARANI but who have a totally different culture than the Guarani. |

Dr. Susnik and Dr. Metraux have traced the migrations of the tupi-guarani from the Amazon Basin. The Indians migrated south along the Brazilian Littoral and along the tributaries of the Amazon River (especially the Xingu and the Madeira Rivers). Those who followed the rivers encountered the northern tributaries of the Paraguay River, and from there they continued south along the River until they came out onto the Paraguayan and Southern Brazilian forests (Susnik 1975, Metraux 1948).

These emigrants were searching for the Good Earth (*yvy pora*) which is not surprising considering that they were horticulturalists and required good earth, water and forest. Settling at the edge of gallery forests enabled them to hunt, fish and farm. The waterways provided them with a route by which they could travel; especially if they were forced to leave expeditiously. Inland, away from the waterways, the land was dominated by non-tupi-guarani people.

It would be misleading to insinuate that the tupi and the guarani were two distinct cultural groups. It would be more accurate to envision a long chain which circled from the mouth of the Amazon, down along the coast of Brazil to the River Plate, up the Eastern border of the Paraguay River and back up to the Amazon Basin. Each link in the chain (or village) had political and socio-economic bonds with its neighbors. The differences in their cultures were proportionate to the distances between villages: they varied slightly from one link to the next and greatly over long distances. This chain did not form a spectrum which exhibited extremes at either end, but instead, formed a circle which had a 360° continuum (Susnik 1975:57-121).

These communities maintained their autonomy by establishing alliances similar to those of the Yanomano (Chagnon 1968). Defense was the principal purpose for these alliances. Other purposes included trade, exchange of women and joint participation in social events. Several of the Northern people ritually captured, killed and ate people from the villages which they had raided (Hemming 1978). There is no indication, however, that the tupi-guarani of the South practiced cannibalism.

The tupi-guarani had egalitarian societies. The chief's position was not an inherited position nor was he overtly chosen by the people. The chief emerged under different circumstances in each instance; generally he was a domineering male who claimed his authority based upon individual attributes such as being a powerful shaman, a skillful hunter, a brave warrior or an able decision maker (Metraux 1948).

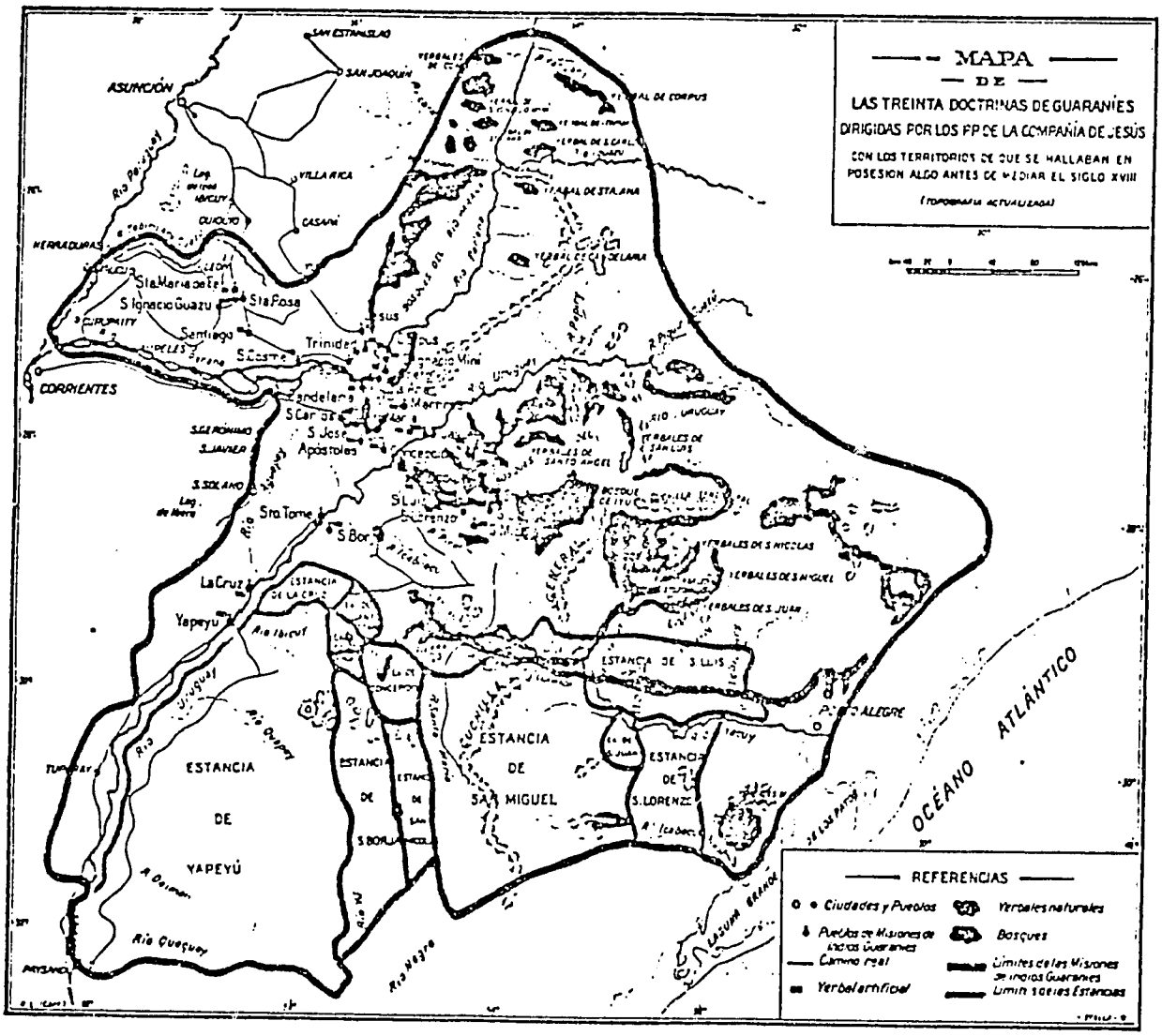



FIGURE ONE: JESUIT MISSIONS 1610-1767

Source: Ferreira 1975

## The Colonial Period

The tupi-guarani first encountered the Europeans when Pedro Álvarez Cabral landed on the coast of Brazil in 1500. There is some dispute between Freyre and Hemming as to what relationship evolved but it is generally agreed that the Europeans were well received in the beginning. Hemming has argued, and I concur, that the Indians were not deadly afraid of the European's weapons or their horses. More importantly, it was not fear or religious beliefs that persuaded the Indians to passively submit to the Whites. Elman Service, in his thesis, The Encomienda System in Paraguay, supports the theory that the tupi-guarani sought to establish an alliance with the Europeans (better friend than foe) and the Europeans were treated as allies should have been treated (Service 1954:230-251, Freyre 1964, Hemming 1979).

However, the Spanish did not do as the tupi-guarani expected but instead established the *encomienda*. *Encomiendas* were formal grants that entrusted Indian families to the charge of Spanish colonists.

## The Missions

In 1609 the Governor of Paraguay, Hernando Arias de Saavedra (also known as Hernandarias), requested assistance from Spain in the conquest and endoctrination of the tupi-guarani. Between 1610 and 1767 the Jesuits established 37 Missions in Paraguay, Southern Brazil and Misiones, Argentina. The Jesuits sought to proselytize, educate and defend the Indians. Perhaps the last task proved to be the most formidable: the Missions were constantly harassed by *bandeirantes* (Brazilian slavers), *encomenderos* and non-tupi-guarani Indians. Finally

in 1767, under pressure from both Spanish and Portuguese colonists, Carlos III expelled the Jesuits from the Americas (Peramas 1946, Furlong 1962).

Branislava Susnik summarized the impact the Jesuits had upon the tupi-guarani into eight concise points: 1) the Missions intermingled the different villages and created a more homogenous group; 2) the paternalism of the Jesuits led to the establishment of a socio-political system which was totally dependent upon the priests; 3) the Indians were taught a dualistic system of ownership, communal as "God's belongings" and private as "man's belongings"; 4) the family structure was altered to fit the Jesuits' concept of a nuclear family; 5) a rigorous disciplined lifestyle was imposed including a mandatory community service which both males and females were obliged to perform; 6) the Jesuits singled-out a number of males to be educated as craftsmen and in doing so they bestowed upon these men certain privileges, which introduced elements of a social class structure in the tupi-guarani culture; 7) the absolute control which the Priest had over the activities of the Indians, especially their religious ceremonies, accelerated their acculturation; and 8) the Jesuits created Indian militias which furthered differentiation by establishing a political hierarchy of captains, lieutenants, and sergeants (Susnik 1974:147-158).

Not all the Paraguayan tupi-guarani were to be found in the Missions however. There were those who never submitted to the Jesuits, others who over the 150 years escaped from the Missions and returned to the forests and yet others returned to the forests only after the Jesuits were expelled. These tupi-guarani Indians in the forests became known as the Ca'agua (Susnik 1974).

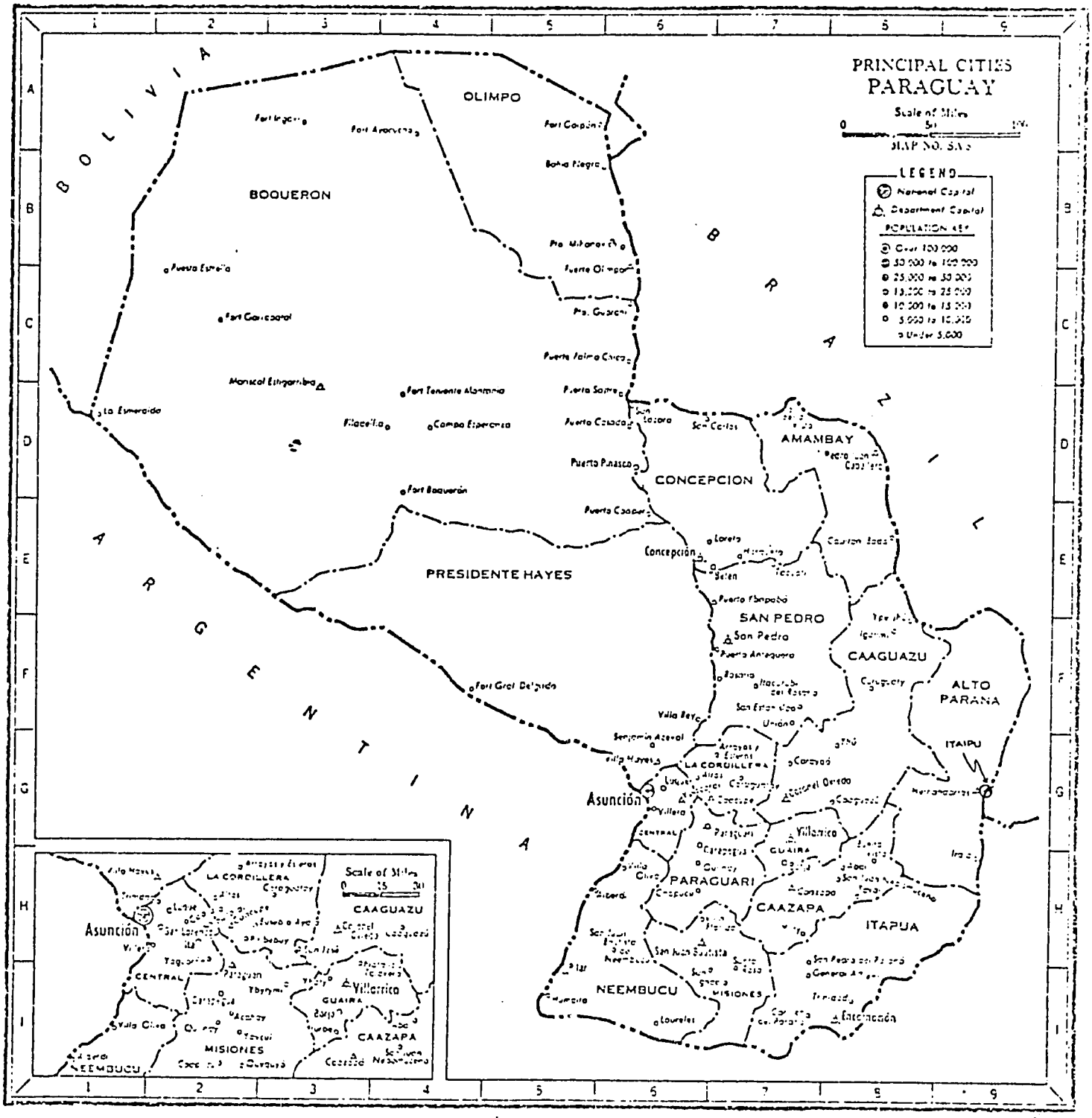



FIGURE TWO: PARAGUAY TODAY

Source: Ferreira 1975

## The Post-Jesuit Era

Paraguay's first President was Dr. José Gaspar Rodríguez de Francia who established a totalitarian control over his country. Until his death in 1840 he sustained a policy of isolationism which he maintained in order to remain indisputably independent from the Argentine Confederation. As a result, Paraguay's economy was devastated. During this period, schools were closed, roads and industries were not built and trade with foreigners was prohibited, and due to the dearth of capital that this policy created, the development of Paraguay was stymied (Warren 1949).

As a result of this policy, colonization of the interior[1] did not occur at this time, instead, the Paraguayans remained close to Asunción. And the Ca'agua (who had evaded the *encomenderos*) remained in the Interior. It appears that at this time they did not establish an inter-village network system, such that they could be identified as a unified Guarani group.

In 1840 Dr. Francia died and a new dictator, Carlos López, took control. In 1862 don Carlos died and was succeeded by his son, Mariscal Francisco Solano López. While he was in power the Argentines threatened to incorporate Paraguay into Las Providencias Unidas, while at the same time Dom Pedro II of Brazil sought to extend his border to the south. On May 1, 1865 the Brazilians, Argentines and Uruguayans reached an accord called The Triple Alliance. The Treaty they signed stipulated the

[1]Eastern Paraguay can be divided into three zones according to the period that each was colonized: a "Central" zone which is a semicircular zone with a radius of sixty kilometers, with Asunción as its hub; the "Interior" which is the zone outside this central area; and the "Frontier" which is a strip of tropical rain forest which runs along the Brazilian border and which until recently remained the last refuge of the Ava-Guarani.

FIGURE THREE: ZONE OF THE AVA-GUARANI
Source: Ferreira 1975

following: 1) to respect each other's sovereignty; 2) to respect Paraguay's sovereignty (as a buffer between Brazil and Argentina); and, 3) to "liberate" Paraguay of Mariscal López. War was declared on May 9, 1865 (Etchart 1959:386). The War ended March 1, 1870 with the death of Mariscal López. The Paraguayan population had been decimated to an estimated 200,000 survivors: mostly women, children and old men. During the War, the Paraguayans had again deserted the Interior and these areas were left to the Indians (Warren 1949).

## The Multinationals

Between 1870 and 1930 the Paraguayan government was unstable and virtually bankrupt. The most significant event, which affected the tupi-guarani during this period, was the introduction of foreign companies into the Interior. The Paraguayan government sold enormous tracts of land to multinational corporations in order to pay off its war debts. The land holdings were purchased by British, North American, French, Italian and Argentine companies (Weil 1972:43).

The largest of these corporations is Industrial Paraguaya which at one time had well over 3,000,000 hectares of forest from which they extracted yerba mate, heart-of-palm and lumber. This company and others like it established company towns throughout their holdings administered by European engineers with a crew of Paraguayans working as managers directing the work crews, working as merchants, running machinery and supervising the shipment of products. Doing the field work were the Guarani, who performed the tasks of harvesting the *yerba-mate*, lumber and heart-of-palm (Warren 1949).

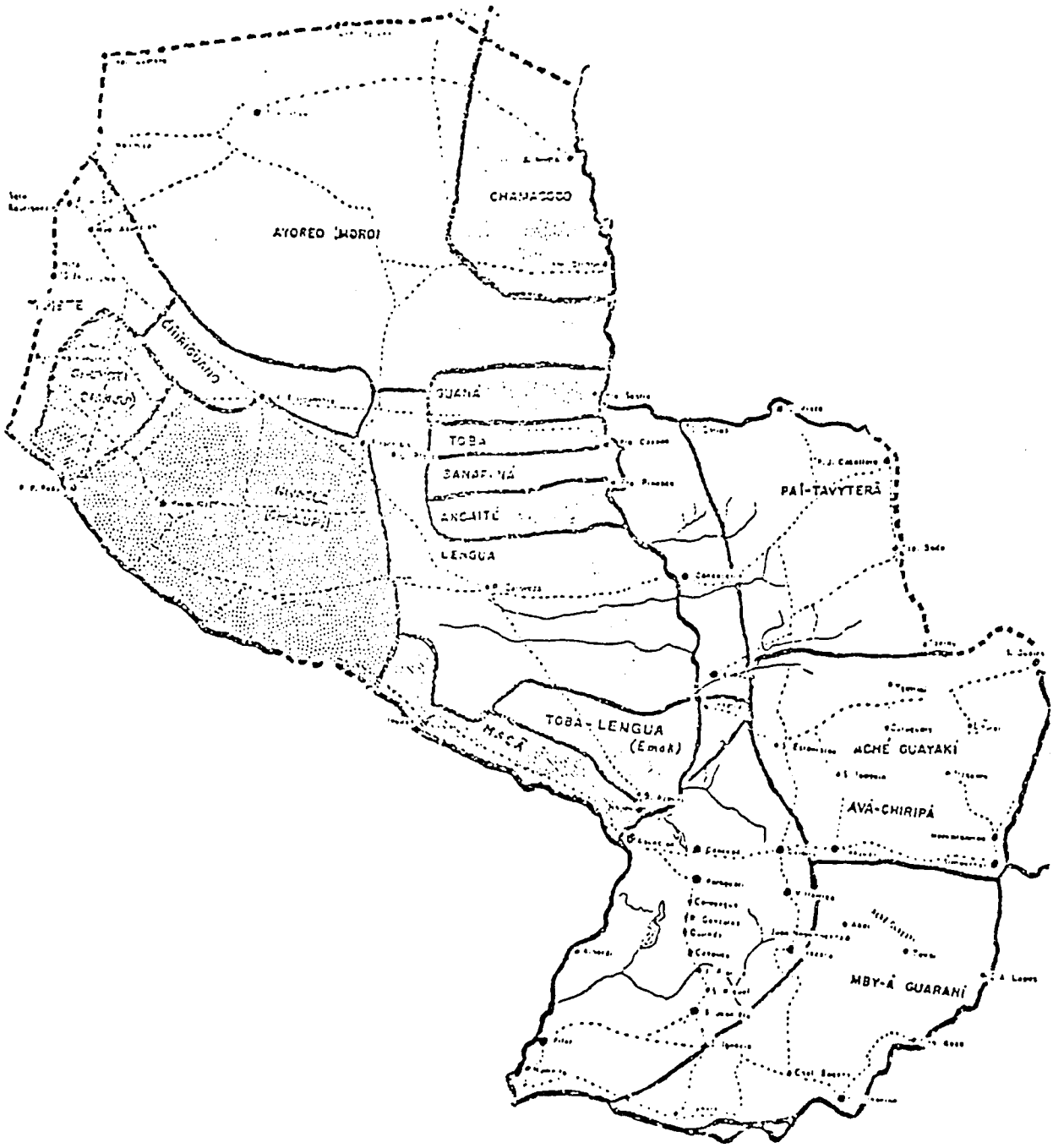



FIGURE FOUR: INDIGENOUS GROUPS OF PARAGUAY

Source: Asociación Indigenista del Paraguay 1977b

The company towns were founded at the outskirts of established Guarani villages. At first, the Guarani in these villages would harvest the desired resources from the surrounding forests, but as the resources were depleted the leaders from these villages took on new roles. They traveled to neighboring villages where they established a trade relationship and in exchange for products sought by the company they delivered company supplies such as sugar, flour, bread and guns. Acting as middlemen for the company, they established new roles for themselves and for their villages. A strong network, which had never before existed, developed between the Guarani villages and of course this lead to other socio-economic relations.

It is at this point that Guarani sub-groups, as we know them today, began to evolve. The Ca'agua villages evolved into three separate sub-groups: the Ava-Guarani, the Paĩ-Tavytera and the Mbya (see Table Two and Figure Four). As the individual villages bonded together into loose confederations, similarities between members of the same sub-group were emphasized and differences between them accentuated, a good example of what Bateson calls "schismogenesis" (Bateson 1958:174).

The multinationals contributed little to the national economy. The products which they sought were exported in their unprocessed form, therefore, industry was not created and new jobs were few. Activities in the Interior were limited to business c the multinational and large *estancias*. Little land was made available to the peasants and transportation into the Interior was virtually non-existent. For these reasons, the Interior remained sparsely populated (Pendle 1967:42).

Meanwhile, the Chaco Boreal had become increasingly important as rumors of finding petroleum were circulated. After years of skirmishes

between Bolivian and Paraguayan forces, the Paraguayan President, Eusebio Ayala, declared war on May 10, 1933. The Triple Alliance War lasted two years and 150,000 Paraguayans were mobilized. Forty thousand died in the War. A cease-fire was called on June 12, 1935 and on July 21, 1938 a peace treaty was signed (Baptista 1976:38-72).

Paraguay suffered tremendous economic and political instability after the War. Returning from the Chaco, the de-mobilized army refused to return to the demeaning chore of farming. They chose instead to remain in Asunción and as a result agricultural production was insufficient to meet national consumption needs, deepening the problems of the country (Rivarola 1967).

During the War, colonization of the Interior had again come to a halt. The Guarani retreated into the Frontier. As soon as the War was over the Paraguayan government made every effort to persuade the unemployed to occupy the Interior, but given the bleak underdeveloped conditions of the Interior there was little incentive for the peasants to do so. The Interior was a wilderness without roads, water or land titles. It was not until after the 1948 Revolution and the coming of the Colorado Party that the Interior slowly opened up (Rivarola 1967).

## The Colorado Government

On August 15, 1954 a single-ticket election legitimized the rule of "Su Excelencia, Presidente de la República, General de Ejercito, don Alfredo Stroessner." His government was confronted with complex and deeply rooted problems. The population had begun to increase and yet it was largely confined to the small and over-exploited Central. The

TABLE TWO
GUARANI SUB-GROUPS
AND ESTIMATED 1980 POPULATIONS

| Country | Sub-groups | Other names | Population |
|---|---|---|---|
| Argentina | Chiriguayo | Guarayo | 13,000 |
| | Mbyá | Ca'agua | 2,000 - 3,000 |
| Bolivia | Chiriguayo | Guarayo | 15,000 |
| | Tapiete | | 40 |
| Brazil | Ava-Guarani | Apapokuva<br>Ñandéva<br>Ñandevaekuére<br>Tañygua<br>Oguauíva<br>Cheiru | 500 |
| | Mbüa | Apütere<br>Avähuguai<br>Baticolas<br>Kaiüa<br>Kaingua<br>Ñaneiru<br>Tambéope | 3,000 |
| | Paĩ-Tavytera | Ka'aygua<br>Kadjova<br>Kaiüa<br>Kayova<br>Kuarapyte<br>Teneñohẽ<br>Teui<br>Teýi | 6,000 |
| Paraguay | Ava-Guarani | Ava-katu-ete<br>Chiripa<br>Ñandeva | 6,000 - 8,000 |
| | Chiriguayo | Guarayo | 1,500 |
| | Mbya | Apytere<br>Baticola<br>Jequaka Tenondeporaquei | 6,000 - 8,000 |
| | Paĩ-Tavytera | Pañ | 10,000-11,000 |
| | Tapiete | | 1,000 |

Sources: Schaden 1962, Chase-Sardi 1971, Maybury-Lewis 1979

middle-class had begun to emigrate to Uruguay, Argentina and Brazil. There was little industry, unemployment and inflation were high, and agricultural production was low (Pendle 1967).

The solutions to these problems seemed to be in the redistribution of land, the introduction of new crops, industrialization, increasing the supply of credit, population control and social programs. The difficulties lay in how to bring about these changes, stabilize the economy and maintain the required support within the capitalistic framework of the government.

The government established itself by taking the steps it felt necessary to insure its survival through re-enforcing its position by eliminating the opposition and by controlling dissidents by Martial Law rule. But as Rousseau said, "the strongest is never strong enough to be always the master, unless he transforms strength into right and obedience into duty" (Rousseau 1762). The Colorados were well aware that they would eventually have to legitimize their authority.

In order to do this they would have to solve these problems. First, to do so, they opened the Interior and the Frontier for exploitation. They began road construction in 1955, using the Army's manpower and equipment, and funds from international agencies. The roads were built in the following sequence:

TABLE THREE
ROAD CONSTRUCTION

| | | | |
|---|---|---|---|
| I | 370 km. | 1948 | 1964 |
| II | 132 km. | 1940 | 1964 |
| III | 358 km. | 1964 | ---- |
| IV | 234 km. | 1940 | ---- |
| V | 244 km. | 1955 | ---- |
| VI | 127 km. | 1960 | ---- |
| VII | 195 km. | 1958 | ---- |
| VIII | 107 km. | 1600 | ---- |
| IX | 750 km. | 1964 | 1981 |
| X | 280 km. | 1973 | ---- |
| XI | 120 km. | 1974 | ---- |

Source: Gubetich 1975

The colonists were not only attracted by the available land in the Frontier, but also by its fertile soil. This soil is the best in Paraguay for growing mint and soybeans which between 1970 and 1975 had a high market value providing a strong incentive to the peasants. Unfortunately, these tropical forest soils are very susceptible to rapid erosion, especially if they are not managed with extreme care, and the new crops cultivated are infamous for their ability to deplete soil nutrients. After five or eight years the peasants' yields had dropped to such an extent that they were forced to abandon their fields and start anew in adjacent forest areas.

Accurate statistics are not available on the migration to the Frontier but it can be safely estimated that in the last ten years the population has risen from a few thousand to almost a million. The migrants to the Frontier fall into seven categories: 1) middle-class, Paraguayan politicians, white-collar workers, administrators and merchants; 2) middle-class Brazilian fazenda owners; 3) Paraguayan construction workers; 4) Brazilian peasants; 5) Paraguayan peasants; 6) Japanese peasants; and 7) Mennonites. Without a census there is no accurate way of measuring what the size of each group is but the Brazilian peasants are by far the largest (Laino 1977).

The next most significant change in the Frontier has been the Itaipu hydroelectric project which is being built by Paraguay and Brazil in a joint effort. Itaipu employes 24,000 people, half of whom are Paraguayans. The project which is costing an estimated 6.3 billion dollars was started in 1975 and will begin operation in 1983, at which time it will be able to generate 12,600,000 kilowatts! Paraguay will

use only a small fraction (estimated at 2 percent) of its production to satisfy domestic needs; the rest will be sold to Brazil for a price that has yet to be agreed upon. Itaipu will provide cheap energy for industrialization and capital for development (see Figure Two and Table Four) (World Bank 1978).

TABLE FOUR
ITAIPU HYDROELECTRIC PROJECT

| | |
|---|---|
| Total Hourly Capacity (million kw) | 12.6 |
| Cost Estimates (billion of 1977 $) | 6.3 |
| Construction Schedule | 1976-83 |
| Actual Construction Work (1977) | On Schedule |
| Expected Installation of First Generating Unit | 1983 |
| Area Flooded | 1460 $km^2$ |
| Volume of Water | 19,000 $Hm^3$ |
| Length | 1.5 km |
| Height (above foundation) | 176 m |

Source: World Bank 1978:40

It is not only agriculture and Itaipu which have brought about changes in the Frontier. There also has been an incredible increase of industrialization; the World Bank's 1974 figures show a 34 percent growth rate of industrial output and there is every reason to believe that this figure has increased since 1974. Generally, industrialization on the Frontier consists of grain dryers for soybeans, sunflower seeds, beans, sorgums, wheat, corn and rice. There are also lumber mills, construction firms, brick factories, a brewery and a Coca Cola plant (World Bank 1978).

Another important activity in the Frontier occurred as a result of the building of the Puente de Amistad across the Paraná River. This bridge allows people and merchandise to cross the border with ease, creating an international center for commerce and tourism. As the economies of Brazil, Argentina and Paraguay fluctuate, the monetary value in one of the three countries is always less than that of the other two. This condition has created an extra-governmental tripartite network of export-import enterprises which have established themselves along the borders to take advantage of the fluxuation in the currencies of the three countries. Much of this economic activity is beyond governmental controls and, therefore, it is impossible to measure the extent of it.

Tourists also take advantage of this economic condition. It enables them to visit two neighboring countries, see Itaipu and Iguaza Falls, and to purchase merchandise at low prices. Tourism increased 300 percent between 1972 and 1977 and it has been climbing ever since (Europa Year Book 1979).

The combined effects of agriculture, Itaipu, industrialization, commercialism and tourism have led to the phenomenal development of the three border cities. Foz do Iguazu, Puerto Presidente Strossner and Puerto Iguazu were mere towns in 1970 and are now cities with morning traffic jams, suburbs and shopping malls.

The roads opened the Frontier to these diverse interests. The modern world has invaded this land seeking to exploit its every resource. The impact that these alterations has had is magnified by the brief time span. These activities have not taken place over centuries or even over many decades; they have occurred over the past ten years!

## Agencies Working with the Ava-Guarani

There are three types of agencies that work with the Ava-Guarani: 1) government agencies; 2) private organizations; and 3) religious missions. The Instituto Nacional del Indígena (INDI) is the government's official "Indianist" agency, and it is responsible for coordinating all programs dealing with the Indians. Until recently, however, INDI has not had the funds to actively participate in development projects. Individuals with INDI have actively sought to enhance INDI's role as a development agency, but vested interests within the government have always managed to stifle such ideas. In practice, they have spent most of their time representing the government in the face of human rights activists or maintaining vigilance over the activities of the other agencies. Currently they are participating in their first major project: the National Indian Census. The Census is designed to establish a base upon which future projects can be developed.

The Asociación de Parcialidades Indígenas (API) evolved from *Marandu*, a short program designed to enhance Indian awareness throughout Paraguay (Marandu 1975). Miguel Chase-Sardi, who initiated *Marandu*, developed API and later directed its team of technical advisors. API consists of two parts: 1) the Permanent Council, which is made up of a president, vice-president, treasurer and secretary; all who are elected by a body of representatives from the different Indian peoples of Paraguay; and 2) the Technical Team, which consists of various experts who are hired by API to advise them in their development projects. Until 1979 the technicians were all Paraguayans, but this has recently been changing.

For the first few years the Technical Team were very paternalistic towards the Permanent Council; creating a very ambiguous situation by

promoting independence of the Indians, on one hand, and keeping them dependent within the organization on the other. In 1979 the Permanent Council balked and, with the aid of the Interamerican Foundation (who had been funding API), they purged many of the Technical Team including Chase-Sardi and his associates (U. S. Embassy Report 1978). In its hey-day API functioned under the principles of the Declaration of Barbados which states that it is the inalienable right of all Indians to make their own decisions (*auto-gestion*) (Chase-Sardi 1971).

The projects that API implemented were designed to establish home-rule in each Indian village, a cause that led to many confrontations with missionaries and other agencies that work with Indians (Asociación Indigenista del Paraguay 1977a). However, the problems API faced with others were minor to what occurred within the organization (U. S. Embassy Report 1978). Today API is barely functioning due to budgetary cutbacks; it had been receiving grants from the Interamerican Foundation but, after the 1979 "purge," funds were reduced drastically (Maybury-Lewis 1979).

The Asociación Indigenista del Paraguay (AIP) is not to be confused with API. It is a much older organization, having been started in 1935 by General Belaieff in return for favors rendered to the country by the Maca Indians during the Chaco War. Despite its long history, until 1973 it had primarily served as a forum for Paraguayan ethnologists.

Currently AIP has a number of development projects which it administers in co-operation with the Misión de Amistad (a Protestant organization). The projects are designed to focus upon a single cultural group. The first project was started in 1976 with the technical assistance of the anthropologists Georg and Freidl Grunberg. The Grunbergs had been working among the Paĩ-Tavytera so that they were able to use the ethnographic data which they had gathered as a sound base for the project.

The projects place technical teams close to the Indian communities but not among them. This is done in order to prevent a dependency relationship from developing. The first responsibility of these technical teams is to survey the lands that the Indians occupy. They then proceed through legal government channels to obtain official recognition of the Indians' right to this land. Eventually, the technical teams intend to follow-up their initial activities with health and education projects.

As David Maybury-Lewis observed, "API is organizing at the national level and working down to the communities, whereas AIP is working with the local leadership and moving slowly upwards" (Maybury-Lewis 1979:88). But as this observation implies, there are certain innate problems to AIP's approach. First, they work according to their perceptions and not according to the Indian's perceptions. Secondly, although the first project had glowing results because it was based upon years of ethnographic research, subsequent projects have been plagued with problems due to the limited time available to obtain the essential information. Thirdly, there has been little success in obtaining land titles for the colonies which have been surveyed. Finally, conflicts of interest have emerged between AIP and the Misión de Amistad which raise questions as to the future of the projects.

Another agency which works with the Indians is the Sociedad del Verbo Divino (SVD), an Order of the Catholic Church. Presently they have four priests, three brothers, six nuns, one medical doctor, and five teachers who work in five Indian communities. Their stated goal is to develop the Ava-Guarani while respecting their right to maintain their original culture. They have been accused, however, of being paternalistic

and of creating a relationship in which the Ava-Guarani are dependent upon the missionaries.

## Conclusions

The Ava-Guarani have had contact with Westerners since the Colonial Period but they have always had a time and a place in which they could retreat, recuperate and readjust. Given the present situation in the Frontier, however, it appears that they will not be given such opportunity again. One of the most significant alterations in their socio-political environment is the presence of those who wish to assist them. The conflict between the different development approaches is more than just academic, the Ava-Guarani decide on a day-to-day basis how to respond to the developers and their distinct projects. Their internal and external policies are based upon their perception of the roles and the "authority" of these developers. This situation creates a great deal of confusion and uncertainty for the Ava-Guarani because they are unable to retain a sense of security. How can they retain this sense when the agencies they perceive as having "authority" are constantly being challenged by other agencies? This lack of security is one of the principal problems to which developers must become sensitive.

# CHAPTER THREE
# SOCIO-ECONOMIC ACTIVITIES AND ORGANIZATIONS

## Ava-Guarani Socio-Political Hierarchies

The most misunderstood aspect of the Ava-Guarani culture is the emphasis placed upon the individuality of the person. It is commonly believed that it is indicative of the disintegration of the Ava-Guarani culture and their villages, that it is a sign of their assimilation into the Paraguayan way of life (Susnik 1975, Schaden 1962, Bartolomé 1977, Asociación Indigenista del Paraguay 1977a, Chase-Sardi 1971). However, this review of their culture will clearly demonstrate that this is not the case.

The Ava-Guarani can best be described through analysis of their socio-political hierarchies. Within this sub-group there are seven distinct strata, each with its various functions and purposes. These strata are as follows:

The Ava-Guarani
The village
The phratry
The clan
The extended-family
The nuclear family
The individual

The Ava-Guarani sub-group occupies a territory bordered on the north by the Mbaracayu Range, on the south by the Acaray River, and on the east and west by the end of the Paraná Forest. They interact, and occasionally

intermarry, with the Paĩ-Tavytera who are found along their northern border but the Ava-Guarani have little interaction with the Mbya who are found to the south and west of them (see Figure Four).

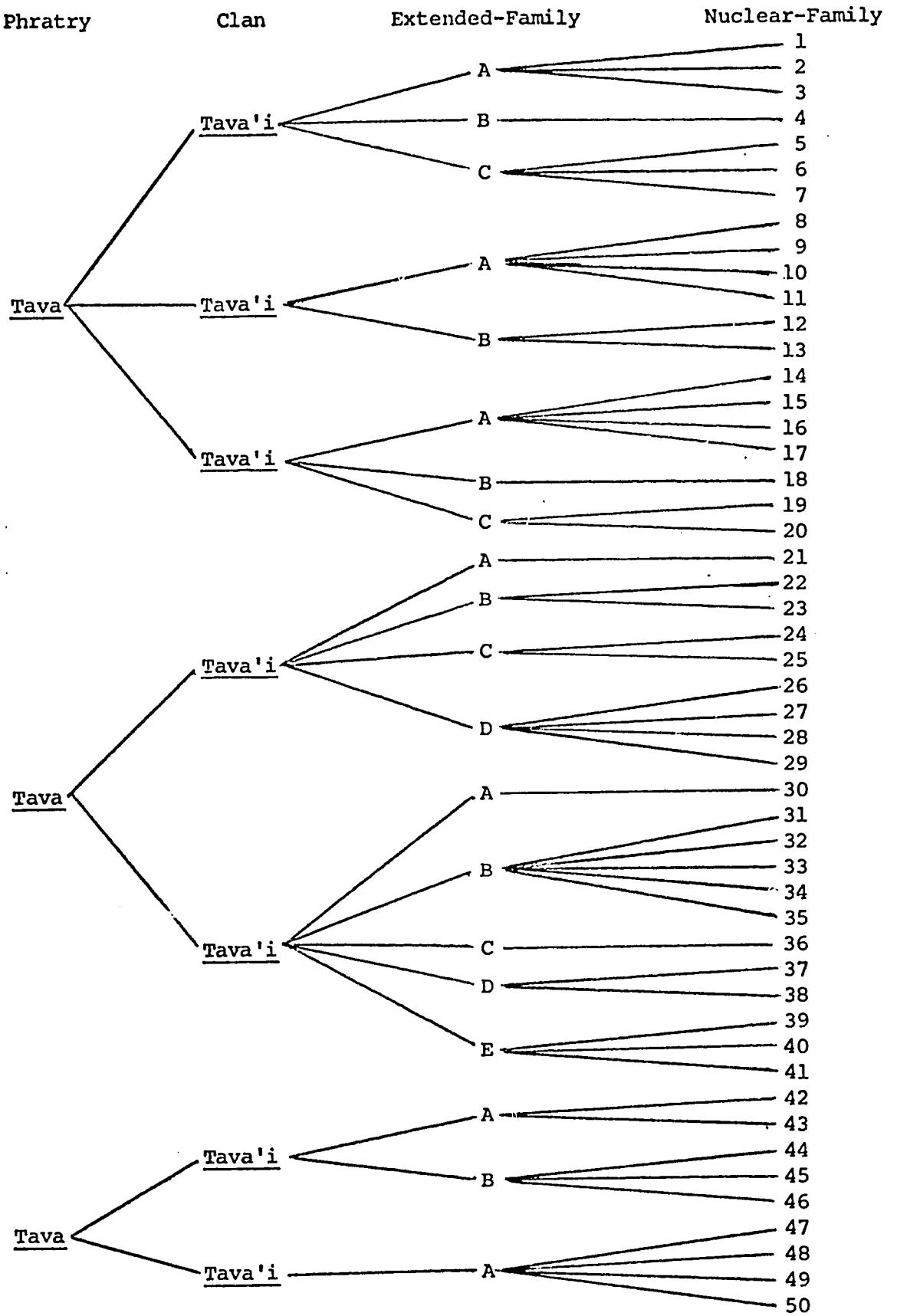
The Ava-Guarani generally refer to themselves as "Guarani" when they are asked by an outsider, and "Ava" among themselves. But since the Paraguayans use the term "Ava" in a derogatory manner the Indians hesitate to use it with an outsider. Other common names include "Chiripa," "Ñandeva" and "Ava-Katu-Ete."

The Ava-Guarani became unified during the last one hundred years, but it would be misleading to think that a rigid inter-village socio-political organization exists even though during the period of the powerful company towns there were attempts to establish a tight federation (see page 20). Recently, the activities of AIP and FPI have served to increase the interaction between Ava-Guarani villages. This interaction has been limited to the participation of the village leaders and is rather superficial. Without the support of these agencies the relations between villages would be minimal or non-existent.

There are thirty-seven Ava-Guarani villages in Paraguay (see Table One). The villages are located far enough apart to make the relationships between them less important than the relationships that they each have with Paraguayan and Brazilian colonies. As a result, if someone marries a person from outside the village, it will usually mean a marriage with a Paraguayan or a Brazilian rather than another Ava-Guarani.

There are two types of villages: the smallest is composed of a single phratry[1] (*tava*) and has between thirty and sixty people. The

[1]A phratry is a group of two or more sib that recognize a purely conventional unilinear bond of kinship (Murdock 1949:47).

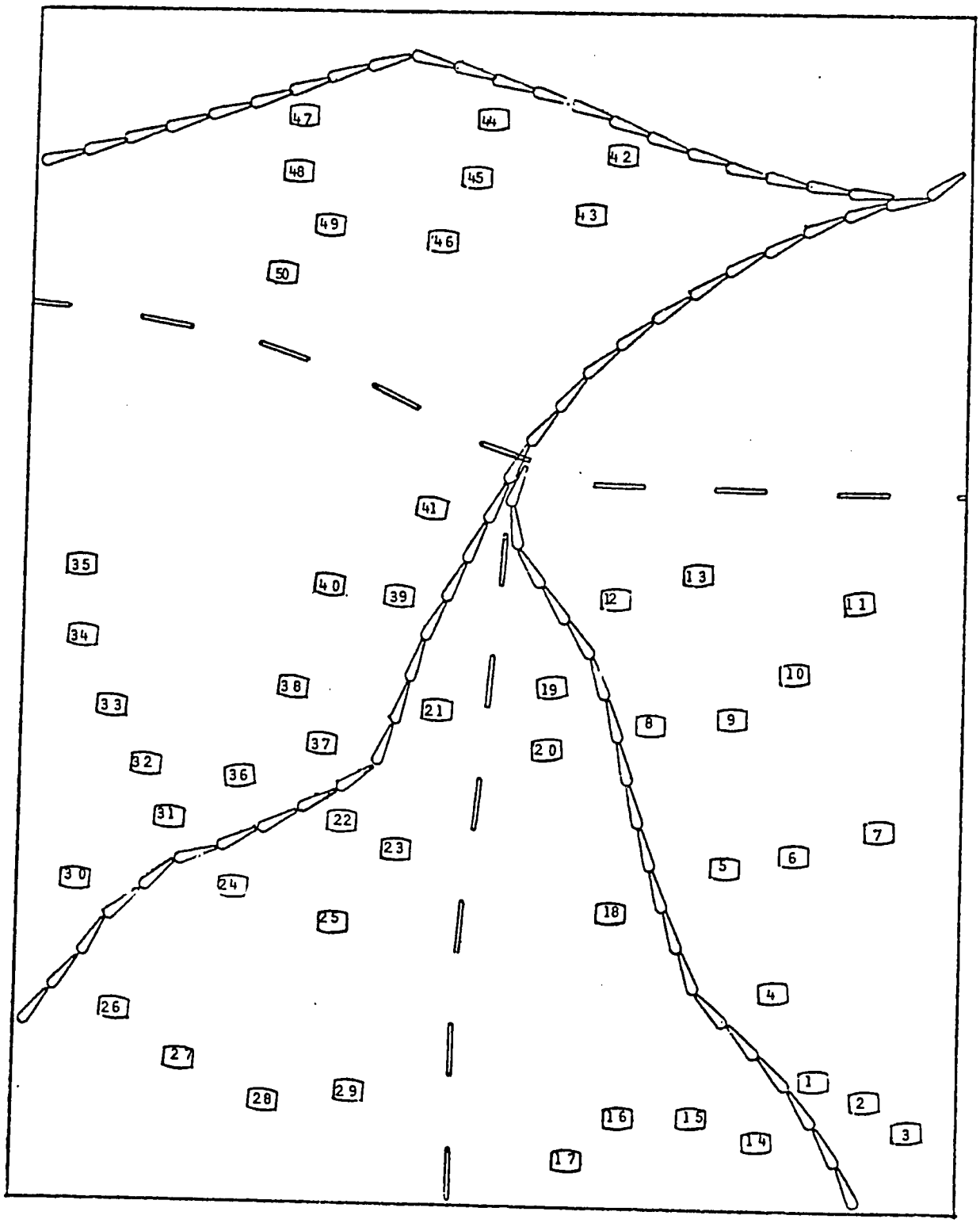



LEGEND:

= boundaries of phratries

= rivers

= houses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larger villages have between two and ten phratries and more than 500 people. If the village has more than one phratry, then village leadership is tenuous because each phratry will seek to boost its own leaders to the position of village representative. Outsiders always seek to deal with a single village spokesman, a situation which leads to confusion and strife between phratries. On the other hand, if there are three or more phratries, alliances must be maintained between phratries in order that a majority may be obtained. For the observer, this constant internal political struggle is indicative of the frailty of the Ava-Guarani unity; however, in reality it is an adaptive strategy that allows the Ava-Guarani to unite several small villages into larger units through fusion.

The location of a village and its characteristics are based on the availability of land, water and forest. Before the multinationals arrived, villages would limit themselves to one phratry; however, as land available to the Ava-Guarani became limited they could no longer afford such "luxuries." In fact, when phratries become too large, a situation which would usually lead to fission, they can no longer afford to split (Wagley 1974).

A phratry is the largest social unit which the Ava-Guarani consciously strive to maintain. If they migrate, the entire phratry will migrate as a unit (except in the case of fission). And when they settle, they will establish themselves along a river edge and usually in a gallery forest. The phratry consists of two, three or four clans (*tãva'i*) that practice exogamy within the clan and endogamy within the phratry. Exceptions to the rule of endogamy are fairly common but such marriages are looked down upon. Besides kinship, the strongest bond of a phratry is the Prayer Dance (*jeroky-ñembo'e*) with each community having its own

priest. Soccer is the next important inter-phratry activity. The core of a team's membership comes from a single phratry and alliances must be established to complete the squad. This is another activity which creates alliances between some phratries and creates divisions between others.

A clan can be identified by two methods. First, they tend to establish themselves as a unit that lives in a continuous area along a river. Secondly, clans consist of two or more matrilineal extended-families who assume that their matriarchs are descendents of a single being; therefore, by tracing lineage it becomes easy to identify clan members.

The extended-family is the most important unit of the Ava-Guarani. It is within this social unit that people begin to actively participate in caring for one another. Although this is a matrilineal society, power is in the hand of the patriarch. The extended-families are matrilocal and it is customary to require bride service. Therefore, a man arranges his marriage with his future father-in-law, then proceeds to move into his mother-in-law's home. He will then work the agreed upon period for his father-in-law while he builds his wife's home. Houses are built at an appropriate distance from the in-laws. "An appropriate distance" depends upon the terrain, but it can generally be described as "out-of-sight and within shouting-distance."

When the son-in-law has completed his bride-service, he and his wife move into her new house and thereafter he has limited responsibilities to his in-laws. If a separation occurs, the man will move out. In this system, an unmarried woman will quickly attract a husband even though she may be old and have many children. In fact, older women who have several daughters are highly sought after. The lucky man who marries into this

situation instantly becomes a patriarch and will soon have sons-in-law doing his work for him.

It is the extended-family which takes care of its members. Single women are cared for by her parents or sisters. If parents must work as laborers, then their children are cared for by the wife's parents or her sisters. And when the elderly are unable to care for themselves, they are cared for by their daughters.

The extended-family consists of several nuclear families; the size of which depends upon the number of surviving generations and the number of daughters with families. Since the Ava-Guarani practice monogamy, the nuclear family consists of a wife, her husband and her children, all of whom will live with her extended-family. The exceptions to this situation develop under several circumstances. For example, if the woman does not have parents, her family will live with her husband's extended family. If neither have families, they will be an anomaly and will be forced to establish themselves wherever they can find land. If they violate the clan exogamy rule it is likely they will live by themselves at the edge of her phratry's territory (which would not be true if they broke the phratry's endogamy rule).

A custom of the Ava-Guarani which causes considerable confusion is their naming tradition. On the surface they have adopted the use of Christian names and surnames which is based upon a patrilineal system. In combination with their matrilocal resident pattern the relationship between several households in an extended-family or clan is difficult to trace with the use of their surnames. To add to the confusion, they also have concealed "forest names" (*hera ca'aguy*). They give little importance to their Christian names and in fact these may change throughout their

lifetime. This has led to confusion and has concealed from the researchers the fact that the Ava-Guarani are indeed matrilineal and matrilocal, and that they do maintain a rigid hierarchy in accordance with their traditions.

## Political Leaders

At the village level, a number of roles have evolved. The tupi-guarani's village leaders became "chiefs" (*caciques*) only when the Europeans arrived and sought a single village representative. In the Missions, a chain of command was established in the Guarani Militias using the military ranks of "captain," "lieutenant," "sergeant" and "corporal." During the era of the multinationals, the nature of business reinforced these ranks even to the point where a rank of "general" evolved meaning "captain of captain." The role of general, however, no longer exists. The last general was Juan Pablo Vera who, though still alive, is "retired."

In a single phratry the selection of a village representative becomes a perpetual tug-of-war between the phratries and for the casual observer this situation gives the Ava-Guarani the appearance of being very unstable. In a village with two phratries, a chief is chosen and given the rank of captain. The leader of the next strongest phratry is given the rank of lieutenant. The lieutenant is given the responsibility of being the police chief who handles most of the petty offenses within the village; however, if a serious crime is committed or if a conflict between an Indian and an outsider arises, then local Paraguayan authorities will be called. If a village is composed of several

phratries, the representatives from the smaller phratries are given the rank of sergeant. The sergeant may be an assistant to either the captain or the lieutenant and serves as a replacement for either in his absence. Low on the totem pole are the corporals who are young potential leaders. The title corporal is used only when a youth is actively serving one of the other leaders. As the name implies, the corporal has no authority and only serves the other leaders when the leaders are acting in their official capacity.

A forum for village leaders is the "council." The council has just recently been introduced to the Ava-Guarani and it exists in only a few villages. It is made up of the chief, the chief of police, and all the sergeants. As councilmen, these leaders have more legitimacy[1] for their roles. Ideally the councilmen should meet on a weekly basis, but in most instances they meed only when crises emerge.

It is important to note that political legitimacy does not originate from the Ava-Guarani people. Throughout history these political leaders were established by the Jesuits, the multinationals and by the Paraguayan government. Hence, legitimacy has always come from the outside. This situation has created a system in which the leaders seek recognition from the outside and not from their own people. This I call the "*cuati'a* complex."

The leaders of the Ava-Guarani, in order to retain or better their rank, seek recognition from whatever outside source they believe has authority;[2] this includes the government, missionaries, and other agencies.

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[1]Legitimacy is the right to exercise power with authority (Kousoulas 1971).

[2]Authority is the ability to shape the behavior of other individuals without the use of naked force, bargaining, or persistent and elaborate persuasion (Kousoulas 1971).

This requires that each leader of the Ava-Guarani receives outsiders with a great deal of fanfare since by doing so he achieves many goals: 1) he impresses the outsider that he is indeed the leader; 2) he creates a bond between himself and the outsiders, which establishes the minimal amount of recognition that they seek; and 3) he impresses his fellow villagers that the outsider has a great deal of "authority" with which to bestow legitimacy upon the hosts. The best type of legitimacy that a leader can obtain is a *cuati'a* which officially recognizes him as a leader of the community. A *cuati'a* specifies a rank and a role, and the most sought after comes from INDI. It is not infrequent to encounter disputes of legitimacy based upon leaders holding different *cuati'a* from different agencies. The winner is not who provides the most important *cuati'a* (since they are illiterate and they really cannot appreciate the authority of the different people who provide the *cuati'a*), but who holds the most cards.

## Social Leaders

Within the clans or the extended-family age does not, in itself, give an individual prestige; however, since the patriarch is usually the eldest male it can be assumed that the older males are usually the clan leaders. The patriarch of one extended-family does not have authority over the members of another extended-family of the same clan. They benefit from the bride-service and from the support of their offspring. In return, they are responsible for the moral fiber of their family and insure that they function harmonously within the phratry. They gain more power if they take on one of the political or other social roles.

Other significant social roles include priest (*pa'i*), shaman (*medico*) and sorcerer (*ava paje*). Priests are found in every phratry. They are the directors of all religious ceremonies, especially the Prayer Dance, but one does not have to be a priest to lead the Prayer Dance. Anyone who has received an inspiration may do so. Most, but not all, priests are males; three of the thirty priests surveyed were female.

The shamans specialize in providing herbs and incantations in the treatment of illnesses and spells. Their ability is received through divine inspiration and their thorough knowledge of herbs and other remedies. Most are also priests and in some villages the people do not differentiate between the two. However, some shamans do not lead the Prayer Dance and some priests do not practice healing.

It is difficult to identify a sorcerer because anyone can be accused of casting a spell (*paje:* this same word is used to refer to priests in the Brazilian tupi-guarani). There are some individuals who openly declare that they are sorcerers but this is rare. Only a very powerful priest can counteract the work of a sorcerer. In one instance a sorcerer placed a spell on a soccer team, his own team! He walked onto the soccer field making gestures and chanting incantations. Then he announced that if his team lost one of its players would die. When his team won (up until then it has always lost) the other teams refused to play until the spell was removed.

Of these different social leaders, the priest is the most powerful. Although most chiefs are priests, when they are not it is the priest to whom people look for guidance. This situation is indicative of the influence of those who hold true authority as opposed to those who have

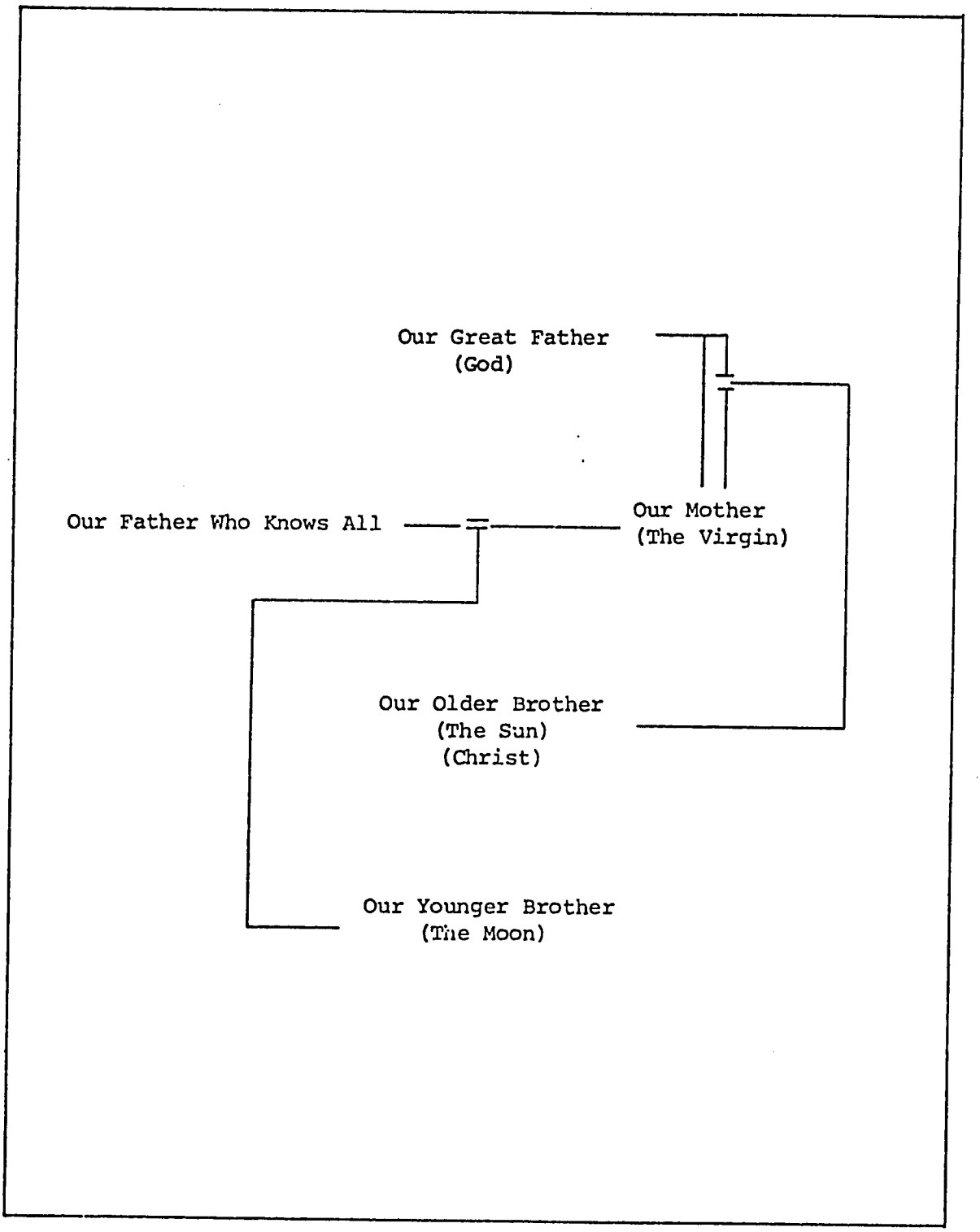


FIGURE SIX: PANTHEON

received "authority" from the outside. Despite external interference, the Ava-Guarani maintain the structure of their culture primarily through the Prayer Dance and the activities of their priests.

## Religion

In brief, the Ava-Guarani religion is based upon the following doctrine. Our Great Father (*Ñanderu Guazu*) made the Earth (*yvy*) by crossing two large beams, thus making the Cross (*yvyra joasa*). He then covered the beams with dirt and planted the forest. One day He encountered Our Great Father Who Knows All (*Ñanderu Mba'e Kua'a*). The two decided that they needed a woman, so Our Great Father made a clay pot and instructed Our Great Father Who Knows All to break it and from inside emerged Our Mother (*Ñandesy*). She slept with both and as a result she bore twins. The oldest, Our Great Father's son, is Our Older Brother (*Ñanderyke'y*). He was given the responsibility of caring for the Earth during the day and therefore he became the Sun (*Kuarahy*). The son of Our Father Who Knows All is Our Younger Brother (*Ñandetyvy*) who was given the care of the Earth at night and became the Moon (*Jacy*).

Our Great Father then went to The Land of No Evil (*Yvymarae'y*). He continues to communicate with the priests regularly however. He tells them that the Ava-Guarani must continue to pray or that He will destroy the Earth with a flood. If individuals are good they will go to The Land of No Evil when they die. And if all the Ava-Guarani obey His wishes, He will instruct the priests to take their communities on a trek where they will be shown the way to The Land of No Evil. Above all else, the Ava-Guarani must continue the Prayer Dance!

The Prayer Dance is the ceremony in which all Ava-Guarani participate. It takes place in the Big House (*Oga Guazu*) which is connected to the priest's house (see Figure Five). Typically it is a three meter by six meter area with a low thatched roof, no walls, and a front facing the East (direction of The Land of No Evil). Along the eastern wall there is a candle-holder (*tataindy'y*) which consists of three 1.5 meter poles (a meter apart) and a horizontal cross-bar which is used to hold candles or other sacred objects. On the other side of the candle holder is a trough made from a cedar log (*ña'eyvyra*) filled with the juice from corn, honey, coconuts or yams.

The Prayer Dance takes place from three to six nights per week, beginning at sundown and continuing until dawn. The dance begins with the priests rhythmically shaking their rattles while they slowly go into trances. Then a few married women place themselves along the west wall where they begin to mark time with their bamboo rhythm sticks. At this point an unmarried female places herself in the center of the Big House and begins to dance from side to side. She is joined by other single females. The males then form a line that graduates from the oldest to youngest and they string themselves out attaching themselves to the priests. The priests may remain at the candle holder or they may lead the males on a simulated trek around the females and around the Big House (see Figure Five). The dance continues for ten to twenty minutes, until the priests return to their place in front of the candle holder. After a minute or two of rest, they start over.

There are at least five variations to the Prayer Dance including: the female puberty dance (*Koty'vo*), the initiation dance for males (*Ñemoiti*), another trek dance (*Ñeha'a*), the name-giving dance (*Ñemongara'i*)

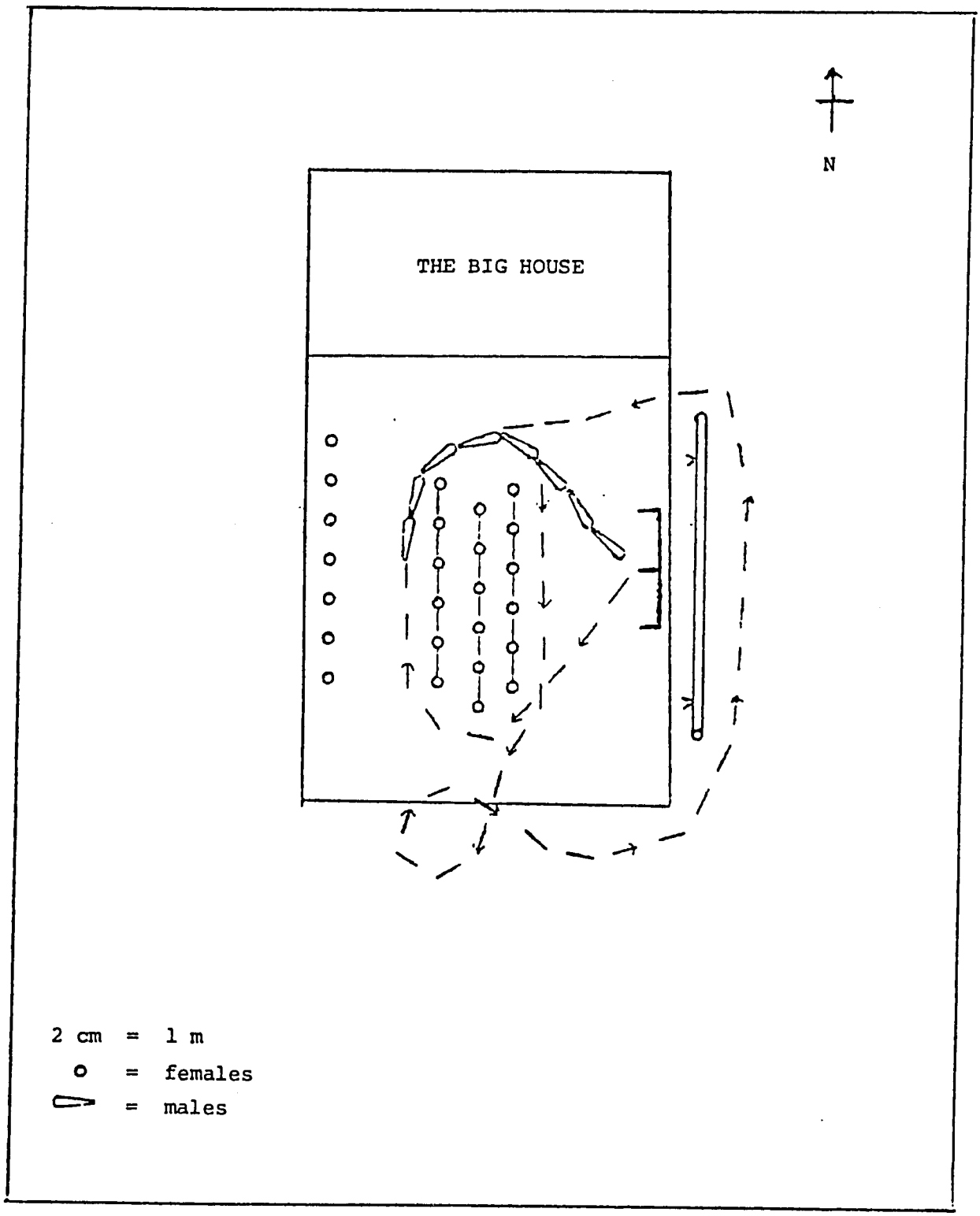


FIGURE SEVEN: PRAYER DANCE

and a dance for the dead. During the ceremonies, alcohol and card playing are forbidden and only corrupt priests allow such violations of Our Great Father's wishes.

The objectives of the Prayer Dance are threefold: 1) to maintain a day-to-day contact with Our Great Father and Our Older Brother who provide guidance, 2) to please Our Great Father who has instructed the priests to keep dancing so that they may insure the safety of the Earth, and 3) to receive the final instructions that will guide them to The Land of No Evil.

Although it is the goal of the Prayer Dance to reach The Land of No Evil, it would be a gross oversimplification to say that the Ava-Guarani are searching for Paradise. Viewed historically, the true meaning of The Land of No Evil can be appreciated. The Jesuits recorded that the tupi-guarani migrated in search of the Good Earth (*yvy pora*). Immediately following the explusion of the Jesuits, the Ca'agua made phenomenally long migrations up and down the Paraná River in search of The Land of No Evil, not the Good Earth (Nimuendaju 1944).

While the Jesuits controlled the Missions they related to the Indians tales about their own countries. Typically these tales glorified the homeland as a place which has a better life. When it came time for the Jesuits to return to Europe they told the Indians that they were returning to their homeland, but that their loyal followers would not be able to follow them because there was no possible way to get them across the sea. The exodus of the Jesuits was immediately followed by a barrage of disasters which befell the Ca'agua. Where would they go? What were they to do?

It is obvious that the Ca'agua sought to follow their mentors. They desperately searched for a way to reach these wonderful lands about which they had heard so much. Actually this is quite analogous to "going to London where the streets are paved with gold" or "going to Lima where even the poor can make their fortune." They relied upon Our Great Father to lead them to the sea and build them a bridge to cross over to The Land of No Evil.

The Prayer Dance serves many functions. The most significant include: it regulates social norms; it maintains a systematic relationship between clans and communities; it is a forum for expression of community and individual joy and sorrow; it provides a socially accepted activity in which eligible mates can meet; it allows individuals to develop their social prestige by providing them an opportunity to performs acts of generosity; it is an opportunity to resolve disputes between people or to make social and economic agreements; and finally, it maintains the cultural integrity of the village through ritual which promotes solidarity and a sense of community spirit.

Aside from the Prayer Dance there is a complex system of beliefs which make up their religion but it is not necessary to analyze them in this thesis. Nevertheless, it is important to convey the core of these beliefs, which have developed from Christian as well as native origins. Today, as one may readily appreciate, these are closely intertwined. For example, some (but not all) believe that Our Great Father is the same as the Christian God, that Our Mother is the Virgin, and that Our Older Brother is Christ.

Considering the functions, objectives and goals of the Prayer Dance, it appears that there is a revitalistic movement which is widespread

among the Ava-Guarani, Paĩ-Tavytera and Mbya. Indeed this religions response to rapid change is a normal reaction in the face of the Paraguayan and Brazilian onslaught on Guarani territory. Participation varies from village to village. In those villages where land is somewhat secure and jobs are available, participation is high but only once or twice a week. In those villages that are facing crucial times, where there is little land, or other problems, attendance may be five to seven times per week. The participants will include all the women and children, most of the adult men, and some of the adolescents. There is every reason to believe that the Ava-Guarani are becoming more ardent in their beliefs rather than becoming assimilated into the Paraguayan culture. By comparing present day participation with historical records of this century, it is clear that the Prayer Dance is becoming more intense as a direct result of the opening of the Frontier (Cardogan 1959). If you consider that this is a response to stress it is an attempt to maintain a sense of well-being by constructing a more satisfying culture (Wallace 1966).

As the participation in the Prayer Dance increases in intensity, the parallels between it and the North American Ghost Dance of 1890 (and 1973 at Wounded Knee) also increase (Mooney 1965). The primary problem is the deficiency of land and the insecurity of the land that they do hold. It must be kept in mind that they are aware that increasing production in their fields and building a new clinic is not the answer to their problem; that the key lays in their right to keep their land, their culture and their religion. And that this revitalistic movement is a manifestation of their anxieties, and their well-being.

## Social Activities

One of the most important social ceremonies is drinking *yerba mate* (Paraguayan tea), a tea-sharing activity which is essential to everyone's daily routine. It consists of putting one-half a cup of ground *yerba mate* leaves into a gourd, filling the gourd with boiling water and sipping the tea through a *bombilla* (a straw with a strainer in the bottom). When the liquid is completely drained from the gourd, it is refilled and the next individual takes a turn. This sequence is repeated until all are satisfied. It may take anywhere from half an hour to two hours and they will each participate three to five times daily. In total, each person will drink up to ten liters of tea per day. The groups that drink include the nuclear family (usually in the morning), "social" gatherings of neighbors, kinsmen, future in-laws, and friends, those attending council meetings, and those greeting an outside authority. Above all else, drinking is an expression of friendship and of the willingness to share with one another.

The *yerba mate* also serves to treat their illnesses. In every pitcher of water the Ava-Guarani will put one herb or another, be it a crushed root or a handful of leaves. Each herb has its purpose, most frequently it is an attempt to cure worms, headaches or diarrhea. Interestingly enough, the names of the herbs are such that they do not reflect the plant from which they came but the illnesses they are intended to cure.

In the long-run, the importance of the *yerba mate* ceremony cannot be over-emphasized. It is the most systematic forum for the development of interpersonal relationships, be it within the household, within the

village of between people from different worlds. If someone were to arrive at the house of an Ava-Guarani and not be invited to drink *yerba-mate*, there would be some doubt as to the relationship between the guest and the host.

## Conclusions

This review of the Ava-Guarani socio-political system indicates that their culture is not disintegrating and that they are not being assimilated into the Paraguayan culture. However, they have incorporated specific aspects of Western culture and they have adapted them to fit their own environment. Their political ranks serve as an example. They were introduced by the Jesuits, reinforced by the multinationals, and reinforced again by the current Paraguayan socio-political system. And yet the function of these ranks, for the Ava-Guarani, is to maintain harmony between the phratries within villages. In addition, it is the more traditional social leaders who usually retain legitimacy from the people, whereas the political leaders must seek legitimacy from outsiders.

Religion is another example. Although in the eyes of many Ava-Guarani their gods have taken on Christian attributes, the Prayer Dance movement is revitalistic in nature; an attempt to achieve a more perfect and harmonious life based upon their own traditional values.

A third example of the adaptation includes soccer and *yerba-mate* activities, both of which are practiced by the Paraguayans. However, within the social context of the Ava-Guarani, each takes on a completely different meaning, that of maintaining alliances. The former emphasizes alliances between phratries and the latter between individuals.

Finally, as in the case of the *cuati'a* complex, the Ava-Guarani often augment a given action by outsiders with its own internal importance. Medical records are a case in point. Vaccine records are held as status symbols, the more they obtain the more prestige they have. It is not uncommon to find people who have five vaccination records, each showing that a person has received measles shots, from different organizations, within the last few years.

In summation, these are just a few of the most blatant examples of why developers must understand the culture of the Ava-Guarani in order to appreciate how the Ava-Guarani perceive their environment and how they will interpret the actions of the developers.

# CHAPTER FOUR
# SUBSISTENCE PATTERNS

## The Environment

The environment of the Frontier has been radically altered over the past decade. The Paraná tropical rain forest was a strip, 100 kilometers wide by 500 kilometers long, which bordered the Paraná River. There are no precise data on the extent by which the forest has been depleted but estimates indicate that only 20 percent to 30 percent of it remains. The forest which remains exists in isolated patches and this environment can hardly be classified as a tropical rain forest.

Most of Eastern Paraguay features low rolling hills covered by sandy spodosol and entisol soils which support low flatwood forests, savannas and marshes. However, the Frontier, the most easterly portion of Eastern Paraguay, is a higher and sharper terrain that has oxisol and spodosol soils. The Frontier highlands have clay oxisol soils that have a single horizon of red clay with a very low saturation point. The characteristics of these oxisols are a pH between 4.0 and 5.5, a high amount of aluminum, a fair quantity of nitrogen and potassium, and very little phosphorous. Approximately 80 percent of the Frontier has these clay soils, the natural vegetation of which is tropical rain forest.

Until recently, the Paraguayans have farmed on the now totally exhausted sandy spodosols near Asunción. In comparison, the oxisols of the Frontier have been perceived as very fertile but they are not! These

soils will produce high yields as long as the nitrogen surpasses the amount bonded by the aluminum. But normally, after planting for two or three years, the farmer's yields drop drastically because the remaining nitrogen becomes unavailable to plants. In such circumstances the Paraguayan Ministry of Agriculture recommends adding 3,000 to 5,000 kilos of lime ($CaCO_3$) per hectare, thereby releasing the remaining nitrogen and increasing yields for another two or three years. After this process, however, not only will all the nitrogen be depleted but so will all the other essential nutrients. The farmers are then left with three options: they can use very expensive complete fertilizers, they can move on to another parcel of virgin forest to cut and plant, or they can return to their old homes nearer Asunción and sell their land to agro-business.

The sandy spodosols of the Frontier are found in the river valleys. Essentially they are the same class of soils that are found nearer to Asunción and they also support flatwood forests, savannas and marshes. These soils are characterized by a top horizon (1-1.5 centimeters thick) of organic material, a second horizon (approximately 1 meter thick) of sand, leached of its nutrients, and a third horizon referred to as the "zone of accumulation" which has some nutrients. These soils are not very good but can be used for a few years if the problem of drainage can be overcome.

In the near future the Frontier will apparently go through two phases, the first being the introduction of cotton. First-class cotton has already been shown to grow very well on the oxisols once they have been depleted of their nitrogen. This is due to the peculiar fact that, in nitrogen-poor soils, cotton will grow smaller but will produce the same amount of fruit. Because more of the small plants can be planted

per hectare, the yields are much higher. The second phase will be the introduction of cattle ranches after the cotton has consumed the remaining soil nutrients. Only grasses will grow without major fertilizer investment. Thus, the entire sequence of events is as follows: ten years ago the Frontier was a tropical rain forest, today it is 20 percent to 30 percent forest with extensive fields of soybeans, mint, cotton, tobacco, beans, corn and rice, and in the near future it will become a cattle range with scrub forest.

During the past hundred years the Ava-Guarani have been very flexible adapting to this dynamic environment. Originally they were horticulturalists growing small gardens while depending upon the forest for other foods and resources to be hunted and gathered. They used simple technology, planted native crops, and practiced field rotation using the basic techniques of slash and burn.

As they adapted to the presence of the multinationals, some of the Ava-Guarani also become involved in the cash-economy. In fact, the roles of the political leaders and their inter-village network systems appear to have evolved as a result of this relationship. Meanwhile, they slowly became agriculturalists as their fields increased in size, as they began to use technology introduced by Westerners, as they planted newly introduced crops, as they relied less upon the forest and more upon their fields and as they began to produce crops for market.

The Ava-Guarani are now adapting to further radical alterations caused by the diminishing forest and the resources which the forest provides, and by the increasingly small parcels of land of which they live. With a shrinking land base they are unable to rotate their fields and leave them in fallow for ten or more years as they have done in the past.

TABLE FIVE
TECHNOLOGY

| Categories | Name | Description | Ownership |
|---|---|---|---|
| field | *apa* | hunting bow, 1.5-1.8 m long | 24% |
| | *asada* | hoe | 82 |
| | *axa* | axe | 82 |
| | *bicicleta* | bicycle | 18 |
| | *foixa* | scythe | 46 |
| | *guirapa* | pellet-bow for birds | 10 |
| | *lampara* | kerosene lamp | 38 |
| | *linterna* | flashlight | 68 |
| | *machete* | machete | 92 |
| | *maquina* | hand-planter | 22 |
| | *martillo* | hammer | 60 |
| | *mboca* | gun or rifle | 18 |
| | *monde* | fall trap | |
| | *nupa* | snare trap | 36 |
| | *pala* | shovel | 24 |
| | *serruxo* | saw | 22 |
| | *timbo* | poison vine for fishing | -- |
| house | *abati soca* | large wood pestle for corn | -- |
| | *angu'a* | large wood mortar for corn | -- |
| | *colxo* | store bought mattress | 22 |
| | *eruhanque* | baskets-twilled | 48 |
| | *erupa* | flour sifters-twilled | -- |
| | *frasada* | blanket | 88 |
| | *macua* | large gourds to haul water | 56 |
| | *japepo* | pots | 92 |
| | *kyha* | hammock | 42 |
| | *tupa* | home made beds | 86 |

Source: The Ava-Guarani Survey 1980.

Instead, they must rotate their crops and cut their fallowing time. Even so, the soils are quickly becoming exhausted and their yields are decreasing. In this setting the Ava-Guarani are forced to rely more and more upon the cash that they may earn working for nearby colonists.

## Contemporary Ava-Guarani Economic Systems

The survey of the Ava-Guarani households shows that the average household farms 2.7 hectares and that they maintain about the same amount of land in fallow at all times. This means that if they divide their land into four fields and rotate 25 percent of their land yearly, it will give each field a two year fallowing, compared to the extensive fallow period which is required for the soil to recuperate (Wolf 1966). They believe that a field must rest for at least five years or it will become "hot" and sterile.

The main crop planted is sweet mandioc. Fortunately, it grows in virtually any type of soil, requires few soil nutrients, requires very little labor, and may be left (as a means of storage) in the ground for two or three years. A one hectare field will easily yield 10,000 kilos. Unfortunately, it is their principal staple and it is pure carbohydrates with no proteins and very few vitamins (Schaefer 1967). Almost everyone also plants several varieties of corn but the yields are a dismal 1,000 to 1,500 kilos per hectare (Ministerio de Agricultura y Granadería 1980). Corn also is a major staple in their diet but it has few nutrients (Schaefer 1967). Corn and mandioc are frequently inter-cropped but they do not complement each other in the consumption of soil nutrients. Instead, their different growth cycles allow for a double or even triple harvest per year. They are also frequently inter-cropped with squash, beans and yams.

The average 1980 market price in Paraguay for corn was a very low $.06 per kilo (as compared to $.15 to $.20 two years earlier). Of this the Ava-Guarani receive only $.04 per kilo from their buyers. Therefore, only those who had an urgent need or a very large surplus sold corn in 1980.

Until a few years ago beans were seen in every Ava-Guarani field. Unfortunately, it was also a favorite cash crop because of the high price paid by the Brazilian market. In the past two years (1979-80), however, the yields have dropped to virtually nothing. This decrease is commonly attributed to unseasonal rains and spirits. In reality, the problems include the use of sterile third or fourth generation hybrid seeds, the high frequency of insects, disease and fungi caused by overplanting, and soil exhuastion. Today, if the Ava-Guarani obtain a bean harvest, they store the "good" beans for seed (although they are probably sterile) and they eat the bad beans. The survey showed that the average household had planted one-eighth of a hectare, with an average yield of 1000 kilos per hectare, resulting in a harvest of about 25 kilos of seed and 100 kilos of food per year.

Almost 20 percent of the households plant soybeans or cotton as cash crops. In 1980 cotton sold for $.50 per kilo and soybeans first sold for $.12 per kilo. At the end of the 1980 season when the United States grain embargo against the Soviet Union was in effect, the price shot up to $.26 per kilo for soybeans. Unfortunately, by the time the prices had risen, the only people with soybeans were the speculators (*acopiadores*) and not the peasants (Ministerio de Agricultura y Ganadería 1980). In fact, the prices quoted are the prices obtained by the speculators and not the Ava-Guarani, who actually received only 50 percent to 70 percent of these prices from the speculators.

One last crop worth mentioning, if only because developers persist in encouraging the Ava-Guarani to plant it, is rice. In the Frontier only dry rice has been introduced and there has yet to be harvest over 1000 kilos per hectare, whereas a decent yield should be around 3000 kilos per hectare. Apparently the available varieties are not suitable for the environment and yet developers insist on experimenting at the expense of the Ava-Guarani. It would be more appropriate to introduce crops which have been proven to have high returns in the Frontier and leave the trials to agricultural research.

The technology used by the Ava-Guarani is simple: machetes, axes and hoes. Some of the young men own Brazilian scythes (*foixas*), and those who plant cotton must own handplanters because the seed is distributed by the Ministry of Agriculture and it is pre-treated with a very toxic contact insecticide (Ministerio de Agricultura y Ganadería 1980).

To some extent every household participates in the cash-economy. There are those who purchase small amounts and those who depend almost entirely upon purchased merchandise. The items most frequently purchased include sugar, cooking oil, flour, salt, rice and noodles. Fewer buy *yerba mate* (an item which they can actually gather for free from the forest), meat and mandioc bread (*galleta*). Items such as lard, meat and beans are purchased in negligible amounts (see Table Seven).

## Credit and Patronage

The prices which the Ava-Guarani pay at local stores are 15 percent higher than the prices in nearby urban centers and 35 percent more expensive than in Asuncion. These stores are found in nearby towns and are usually owned by Paraguayans. Because the store owners consider the

Indians as untrustworthy they do not extend them credit, forcing the Ava-Guarani to go to their patrons to get credit.

There are three types of patrons: the speculators, the temporary, and the permanent employers. Paraguayan speculators purchase whatever they can from the small producers and, in turn, sell accumulated quantities to larger speculators who have the facilities to export the products. In return for the products sold to the speculators, the Ava-Guarani receive a combination of money and provisions. The speculators will sometimes loan a farmer seed, tools and bags in return for the promise to sell the harvest at a pre-agreed upon price. Other than that, the speculators do not give credit.

The second type of patron, who can be either Paraguayan or Brazilian, is the employer who hires the Ava-Guarani on a temporary basis as field laborer. These jobs are seasonal and the salaries are paid either as piece-rate (*seco*) or as day-rate (*libre*). For example, for clearing one hectare of forest with an axe they earn $23 (6 days of work), for weeding one hectare the rate is $31 (15 days of work), picking corn earns them $.94 per 100 kilo bag, the rate for picking soybeans is $1.58 per 100 kilo bag, and for gathering *yerbe-mate* from the forest the pay is $.48 per 10 kilo bag. If a day-rate is paid, the "full" wage for field work in Paraguay is about $5 per day (Ministerio de Agricultura y Granadería 1980). The Ava-Guarani receive different wages according to their "capability": 100 percent for young men, 75 percent for most other men, and 50 percent for the elderly, women and children (though women and children are seldom seen doing field work for a patron). These wages are paid in cash or kind, and meals are deducted from the salaries.

The third type of patron is the *patrõ positivo*, who is usually a Brazilian. He hires the Ava-Guarani on a regular basis, not necessarily for 40 or 50 hours per week, but on a year-round basis that generally averages out to about 40 hours per week. Although the *patrõ positivo* tends to pay only 75 percent of full wage, every person dreams of having his own steady job because it signifies a reliable source of income and a source of credit. Ninety percent of the men interviewed worked sometime during the year; of these 50 percent worked for a *patrõ positivo*, the remaining 50 percent worked as part-time or seasonal laborers. In 10 percent of the households surveyed, a second male also worked (usually the eldest son, but it could be a son-in-law or a dependent patriarch) (see Table Six).

## Economic Sub-Groups

Four distinct economic sub-groups exist within the Ava-Guarani economic system. They are not "true" socio-economic classes because movement from one group to another is not restricted. Indeed, a person may change back and forth between groups throughout his life. For example, a male child, whose father is still performing a bride-service, is born into a laborer's household. A few years later his father acquires a few hectares and they become peasants. As the young boy grows older his family acquires enough land to become subsistence farmers. When the young man marries he becomes a laborer himself. He also becomes a peasant and later a subsistence farmer as did his father. Finally, as an old man, he bequeaths (piece by piece) his land to his sons-in-law as he reverts back to being peasant or even a laborer. This individual has gone through

TABLE SIX
ECONOMIC SUB-GROUPS

| | Laborers | Peasants | Subsistence Farmers |
|---|---|---|---|
| Crops Planted[1] | | | |
| Mandioc | 0.50 | 0.60 | 0.91 |
| Corn | 0.60 | 0.80 | 1.72 |
| Beans | 0.10 | 0.10 | 0.30 |
| Rice | 0.01 | 0.02 | 0.23 |
| Soybeans | 0.01 | 0.12 | 0.14 |
| Cotton | 0.00 | 0.13 | 0.11 |
| Tobacco | 0.03 | 0.02 | 0.04 |
| Yams | 0.13 | 0.18 | 0.26 |
| Squash | 0.03 | 0.10 | 0.16 |
| Sugar Cane | 0.04 | 0.05 | 0.13 |
| Peanuts | 0.03 | 0.06 | 0.04 |
| Onions | 0.04 | 0.08 | 0.09 |
| Bananas | 0.02 | 0.05 | 0.09 |
| Papayas | 0.00 | 0.05 | 0.04 |
| Hectares[2] | 1 | 2.2 | 4.6 |
| Technology[3] | | | |
| Machetes | 0.77 | 1.81 | 1.31 |
| Hoes | 0.92 | 1.00 | 1.38 |
| Foixas | 0.92 | 0.42 | 0.43 |
| Shovels | 0.23 | 0.33 | 0.25 |
| Axes | 0.85 | 1.00 | 1.06 |
| Hand Planters | 0.15 | 0.48 | 0.13 |
| Flashlights | 0.85 | 0.81 | 0.81 |
| Lamps | 0.31 | 0.52 | 0.38 |
| Radios | 0.38 | 0.57 | 0.50 |
| Pots | 1.69 | 1.95 | 2.75 |
| Blankets | 1.15 | 1.62 | 1.81 |
| Hammocks | 0.46[4] | 0.33 | 0.62 |
| Bows | 0.92[4] | 0.29 | 0.38 |
| Baskets | 1.15[4] | 1.90 | 1.19 |
| Gourds | 0.92 | 1.90 | 1.56 |
| Average Family Size | 4.2 | 4.6 | 4.6 |

Table Six — continued

| | Laborers | Peasants | Subsistence Farmers |
|---|---|---|---|
| Purchases[5] | | | |
| Sugar | 5.50 | 4.62 | 2.94 |
| Oil | 4.46 | 5.12 | 3.75 |
| Meat | 2.35 | 2.45 | 1.66 |
| Rice | 9.42 | 7.21 | 4.03 |
| Beans | 3.58 | 1.45 | 1.03 |
| Noodles | 9.12 | 6.50 | 4.47 |
| Flour | 10.78 | 11.14 | 9.44 |
| Yerba mate | 2.81 | 1.79 | 1.41 |
| Galleta | 2.58 | 1.69 | 3.00 |
| Salt | 2.92 | 1.90 | 3.10 |
| Wages[6] | | | |
| Head of household | $928 | $712 | $459 |
| Second employee | 152 | 188 | 93 |
| TOTAL | $1080 | $900 | $552 |

[1]The figures are the percentage of a hectare devoted to the stipulated crops per household.

[2]The figures represent the average number of hectares owned by household.

[3]The figures represent the average number of stipulated articles possessed per household.

[4]These figures are inflated due to artifacts produced for market and not for home use.

[5]The figures listed represent the number of kilos purchased per month per household.

[6]The figures listed are annual salaries based upon 250 work days per year.

Source: The Ava-Guarani Survey 1980.

three economic sub-systems, changing a total of 7 times, although not everyone will go through the same sub-systems in the same way. As is evident, the people within the sub-systems are inter-related and the systems are inter-dependent. People may have different possessions in the different sub-groups but they have the same culture.

The first of these economic sub-groups is that of the subsistence farmer who farms between 4 and 7 hectares (an average of 4.8 ha.). These farmers supplement their subsistence by hunting, fishing and gathering (2 days per week on the average), and by working as seasonal laborers (earning an average of $550 per year per household). At home they make baskets, hammocks, beds, bows and gourds, and they purchase machetes, hoes, axes, pots and blankets.

The second sub-group can be classified as peasant in accordance with George Foster's definition, "It is not what peasants produce that is significant, it is how and to whom they dispose of what they produce that counts" (Foster 1967:6). The peasants share much in common with the subsistence farmers. Their primary activity is agriculture; however, they have insufficient land to support themselves with subsistence agriculture (average field of 2.2 ha.) and as a result, they must generate a cash income by growing cash crops (such as soybeans and cotton), by selling whatever surplus they may produce, and by working as laborers (average income is $900 per year per household). They rarely hunt but they do fish at least twice a month. They select their crops according to market prices. Recently cotton has become their favorite cash crop because it will grow on nutrient deficient soils and it is labor intensive. They purchase many more provisions than do the subsistence farmers. They are likely to

own radios, lamps, hammers, shovels and hand planters, and are less likely to have bows, traps, baskets and other homemade articles.

The third economic sub-group is made up of laborers who do not own sufficient land to make a living as agriculturalists. In their small plots (which average less than one hectare) they grow tobacco, mandioc, corn, onions and squash. These people work full-time and earn an average of $1100 per year per household. They are the antithesis of the subsistence farmers in that they do not hunt, fish or gather, they do not make articles at home, they purchase almost all their provisions and they own such items as flashlights and scythes.

Outside the village there is a fourth group which was not included in this study. This group consists of many young adults who migrate for a few years to the urban centers but who maintain their connections with the village. Because they are very dispersed and do not have permanent dwellings, their households were not included in the survey. The only thing that can be said about this group is that they frequently leave their children in the homes of their relatives in the villages, and it appears that they return to the village life after a few years.

In conclusion, the independent factor which determines which economic sub-group a household belongs to is land! By definition, the ultimate question is "Who receives what and how much?"

## Land Distribution

Land distribution among the Ava-Guarani is best understood in relation to their social-political hierarchies. The Ava-Guarani have not been successful in their attempts to secure land for their villages. The pertinent law is National Law 854, Article 16, which gives the

Instituto de Bienestar Rural (IBR) the authority to expropriate private land for the purpose of establishing National Indian Colonies (Instituto de Bienestar Rural 1974). There is a "catch-22" however. The IBR insists on guaranteeing that the National Colonies remain intact once they are established so they will grant land titles only as Communal Property. In Paraguay, however, only entities that receive Judicial Recognition are allowed to own property, communal organizations are not eligible. Therefore, IBR cannot turn the land titles over to the Indians because they cannot legally own Communal Property (Asociación Indigenista del Paraguay 1977b).

There is a proposed law, first introduced in 1978, which would grant the Indians Judiciary Recognition. It shows little chance of succeeding in Congress, however, because of various drawbacks including the requirement that 20 hectares be confiscated on behalf of every Indian household in Eastern Paraguay and 100 hectares for each household in Western Paraguay. In total, this is a request for 3,500,000 to 6,000,000 hectares of land. Such a law is unlikely to be passed by the National Congress which is made up of rich landowners. The law is being revised and resubmitted (Instituto Nacional Del Indígena 1978).

The other option is to purchase the land for the Indians. This is a short-sighted approach, however, because by doing so it is conceding that the Indians do not have an inherent right to the land that they occupy.

A recent publication gave the impression that 50 percent of the land occupied by the Ava-Guarani has been declared by IBR to be National Indian Colonies (Bejarano 1979). In reality, 11,000 hectares have been surveyed by AIP and the surveys have been turned over to IBR for processing. But IBR must decree the land as a National Indian Colony, must send out its

own survey team, must confiscate the property from whoever lays claim to it, must submit the papers for approval to several other Ministries, and then when the decree has received the President's signature it becomes law (IBR Resolution 672/74) (Instituto de Bienestar Rural 1974). The land which the article claims is guaranteed has only gone through the first two steps in this lengthy procedure and is far from being secure. In the last decade, the Ava-Guarani have fought a losing battle to keep the lands that they occupy. On a daily basis they must fight off intruders and squatters.

At the village level the Ava-Guarani must fend for themselves. Only a few of the large villages are safe from intruders because the land is owned by religious missions. Most of the villages are located on *estancias* or on government land (controlled by one of many different Ministries). The sizes of the villages range from 50 hectares to 2000 hectares. Therefore, the most decisive factor in land distribution is absence of secure titles.

Within the village, land distribution is first made to the phratries. If there is more than one phratry, the original inhabitants bestow upon the new arrivals a section of the village. If there are two phratries they allocate another section to the next phratry to arrive, and so forth. If land is in short supply the distribution becomes less and less equal, to the point when phratries may refuse to allow more phratries to immigrate or they may designate such a small section of land that the newcomers have no other option than to become laborers (see Figure Five).

Once a phratry is designated a section of land, each clan receives its portion. The size which the clan receives usually reflects the size of the clan; however, the choice of land is usually based upon which clan has the strongest leaders.

Within the clan, the extended-family will be given a parcel to farm. At this level the proportions may vary considerably due to the influence one leader may have over the rest of the clan. Any of the extended-families that are fortunate enough to have a priest or other community leader in the family will certainly receive a lion's share of the land.

Within the extended-family the division of the land is based upon roles. The land is owned by the matriarch and it is assigned to the daughter's family in accordance to their needs. Usually, as the newly-weds start out, they receive only a small plot. With the years, as the matriarch grows old, the children receive more and more land until the matriarch is left with only a small plot and the children have nearly everything. Here the roles have been reversed and the matriarch becomes the dependent.

There is always the opportunity for an enterprising young family to acquire land without waiting for the in-laws to give it to them. Although there are no provisions to purchase land, one may barter for the rights to work a particular field. For example, in return for a pig (required for a certain ceremony) a field may be turned over to a neighbor for a year.

## Conclusions

It cannot be over-emphasized how great an impact the rapid change in their environment has had upon the Ava-Guarani. They have been forced into a position in which they can no longer survive as subsistence farmers, their traditional role. In response to this situation they have

developed an elaborate adaptive strategy in which individuals are able to move in and out from one economic sub-group to another, allowing them to benefit from both socio-economic systems. This strategy allows the laborers to obtain what they need from the cash-economy, feed it back into a complex system which exists for distributing goods between sub-groups, and in return they receive the subsistence products which they can no longer produce (such as meat, fish and fruit from hunting and gathering activities).

It is not only merchandise that flows through this system but people as well. A peasant may become a laborer or a subsistence farmer depending upon the circumstances. All this is an adjustment to the fact that the Ava-Guarani no longer have sufficient land to live as they have for the past century.

# CHAPTER FIVE
# HEALTH

## Health Research Strategy

There is a general theory which transcends many sciences, including health, agriculture, rural-development, sociology and economics, which is that development is synonymous with cash and modernity (Chilcote and Edelstein 1974). This theory is challenged by those who raise the question as to whether this leads to true development or to a dependency relationship and a process of colonization (Cockcroft, Frank and Johnson 1972, and Horowitz, Castro and Gerassi 1969). This research was designed to empirically test the proposition that a high income and the access to modernity really provides one with a better quality of life. As an indicator of well-being, health was selected as an objective means to measure which sub-system leads to a better quality of life. The research was designed to measure the health of those within the cash-economy and to compare it with the health of those outside the cash-economy.

In the 50 households that were selected for the sub-groups survey there lived 227 individuals, 225 of whom were given physical examinations. Their health status was recorded to test the hypothesis that those individuals in the cash-economy have a better health status than those outside the cash-economy. Specifically, this means that the laborers should have better health than the peasants and the peasants should have better health than the subsistence farmers.

At the time the survey was taken, however, no attempt was made to obtain a proportionate sample from the three economic groups because there were too many variables to control and there were no criteria for identifying people as members of a particular economic group before the subsistence data had been analyzed. In addition, previously there had been a misconception that the independent factor was village affiliation, so that if a proportionate sample had been taken it would have been in accordance with village affiliation and not economic group.

The health survey was designed with the use of George Christakis' Nutritional Assessment in Health Programs (1972) and Derrick Jelliffe's The Assessment of the Nutritional Status of the Community (1966). Jelliffe's article was particularly useful in designing the schedule which was used. The schedule incorporates the variables pertinent to infants, children, adolescents, adults and the elderly. The ideal would have been to include dietary, medical and socio-economic histories, and clinical and laboratory evaluations. Specific dietary information was not gathered due to time constraints. The only course of information which could have been used would have been 24 hour recall, but this was not used because this method has been demonstrated to be crude and unproven (Jelliffe 1966). Some dietary information can be inferred from monthly purchases, crops and family size.

Laboratory analysis was limited to the use of Labstixs which test urine for pH, protein, glucose, ketones and blood. The procedures recommended by the accompanying literature are to immerse the test strips into the urine and to compare the test areas to the accompanying color charts. Deviation from normal of any of the five tests is an indication of a pathological problem. In reference to the urine analysis, as well as

other analyses, an observation of a sympton is an indication of a pathological problem, but none of the manifestations is enough by itself to provide for a diagnosis of a disease.

A sample of the schedule used for recording the physical examination is found in Appendix B. It can be divided into three parts: 1) anthropometric measurements; 2) health history; and 3) clinical observations. The physical measurements included age, gender, height, weight, skinfolds and the corresponding circumferences and child head circumferences. To take the skinfolds an Ensure Ross Skinfold Caliper was used in accordance with the procedures outlined by Christakis (Christakis 1972). During a test of the schedule it was discovered that it would be inappropriate to take the suprailiac and subscapular skinfolds of females over the age of 15 so no attempt was made to do so.

Blood pressure and pulse were taken, but only from those people over the age of 15 because a child's sleeve was not available for the sphygometer used. These measurements were taken so that any abnormalities could be detected and they were taken when the people were rested and seated.

The growth measurements were gathered so that patterns could be compared, but in this research it is more important to compare the age groups, genders and economic groups of the Ava-Guarani than it is to compare the Ava-Guarani with other peoples. To some extent it will prove useful to compare the Ava-Guarani with the Paraguayans but it would digress from the thesis' focus to compare peoples from unrelated environments.

The section on medical history includes: 1) the numbers and types of vaccines each had received; 2) the number of pregnancies each woman had had and the number of children she had lost; 3) the severe illnesses each had had over the past year; 4) the types of manufactured medicines each

was taking at the time of the interview; and 5) the number of broken bones each had had. The information on vaccines was taken from shot records which are given to each person by whoever dispenses the vaccines. In addition, it was helpful that TB vaccines are traditionally given on the right arm and smallpox is given in the left, and both tend to leave visible scars.

It is assumed that the number of pregnancies that were reported reflect the number of pregnancies perceived by the woman herself. Based upon an interview with an Ava-Guarani midwife, this would include pregnancies that had lasted at least four months. Therefore, it is not possible to know how many abortions occurred before the fourth month of pregnancy. The information on child mortality includes all the child deaths between live births and ten years old.

The last section was designed to record any obvious pathological symptoms of malnutrition and disease. It is not necessarily true that an individual will manifest a particular symptom as a result of a specific deficiency or illness. However, if a symptom is present, it is assumed that it is an indication of a deficiency or a disease. Observable symptoms are serious because by the time they have developed to the stage of being visible, they are indicative that the problem had already gone through stages which have altered the body which inevitably causes damage (Jelliffe 1966). All the information was obtained visually and tactually. Pathological symptoms that were not allowed for my the schedule were recorded on the obverse of the form under "observation."

A stool sample and a laboratory analysis would have been required in order to properly identify internal parasites but this was not possible.

The information was obtained by asking the household members and by looking for physical symptoms (such as swollen abdomens, parasitic etchings on the skin, and visual identification). It there were no visible symptoms and the household members denied having parasites, it was assumed that for all practical purposes they did not have parasites. This is not to say that they were absolutely parasite free, it means that if parasites were present and were not manifesting any visible symptoms, the people had adapted to the presence of the parasites (particularly true of adults).

The presence of tuberculosis was diagnosed only if several distinct symptoms were present or if the person had been diagnosed as having TB by a physician. The symptoms of TB that were looked for included 1) low daily fevers in the morning and late afternoon, 2) weight loss, 3) the presence of a cough over a long period, and 4) night sweats (Krupp and Chatton 1980:135). The other respiratory diseases were primarily colds. Malaria, measles and leprosy proved impossible to diagnose.

A visual examination was made of the teeth and all observable caries were counted, but the teeth were not scraped to identify possible weaknesses in the enamel.

## Demographics and Anthropometrics

The standard height and weight tables (the most applicable are provided by Jelliffe) are only used in a limited fashion for comparison of the height and weight of the Ava-Guarani because they are a much shorter people than those who were measured to compose the reference tables (Jelliffe 1966:211-242). A problem emerges, for example, when the table refers to a height of 150 cm. and the corresponding information is based upon the body proportions of a young teenager. An Ava-Guarani

TABLE SEVEN
ANTHROPOMETRIC MEASUREMENTS

| Age group | 1-9 | | 10-19 | | 20-39 | | 40-69 | |
|---|---|---|---|---|---|---|---|---|
| Gender | M | F | M | F | M | F | M | F |
| Age | 4.6 | 4.6 | 12.9 | 14.0 | 29.5 | 28.7 | 49.6 | 51.5 |
| s.d. | 2.7 | 2.5 | 2.6 | 3.4 | 6.0 | 6.7 | 9.1 | 7.8 |
| Weight[a] | 17.6 | 16.4 | 38.1 | 37.8 | 56.6 | 51.7 | 59.5 | 47.6 |
| s.d. | 5.8 | 5.0 | 9.4 | 13.9 | 5.7 | 4.5 | 7.9 | 4.5 |
| Height[b] | 99.5 | 92.0 | 140.3 | 137.8 | 161.5 | 148.6 | 159.1 | 147.0 |
| s.d. | 19.2 | 22.5 | 15.5 | 12.1 | 6.7 | 5.3 | 8.5 | 4.1 |
| Triceps skinfold[c] | 10.3 | 9.5 | 12.6 | 14.5 | 7.7 | 17.5 | 8.2 | 15.0 |
| s.d. | 2.8 | 3.5 | 3.7 | 6.1 | 3.5 | 5.2 | 2.4 | 5.5 |
| Triceps circumfer.[b] | 16.3 | 16.0 | 20.5 | 20.8 | 24.9 | 24.4 | 27.0 | 23.5 |
| s.d. | 2.9 | 3.0 | 2.8 | 4.2 | 3.4 | 2.6 | 3.1 | 3.0 |
| Subscapular skinfold[c] | 8.6 | 9.6 | 10.7 | 11.7 | 11.2 | --- | 12.0 | --- |
| s.d. | 3.0 | 3.0 | 3.4 | 3.7 | 2.7 | | 3.6 | |
| Suprailiac skinfold[c] | 10.4 | 13.2 | 14.1 | 16.3 | 17.7 | --- | 19.2 | --- |
| s.d. | 3.4 | 4.7 | 3.5 | 3.4 | 5.6 | | 6.7 | |
| Head circumfer.[b] | 49.3 | 48.0 | --- | --- | --- | --- | --- | --- |
| s.d. | 3.2 | 3.4 | | | | | | |
| Chest circumfer.[b] | 60.0 | 55.8 | 72.9 | 63.9 | 88.5 | --- | 87.1 | --- |
| s.d. | 8.1 | 8.6 | 6.3 | 3.4 | 4.5 | | 7.7 | |
| Waist circumfer.[b] | 58.7 | 52.9 | 67.9 | 57.9 | 76.7 | --- | 79.5 | --- |
| s.d. | 6.5 | 6.4 | 5.1 | 2.8 | 4.5 | | 6.1 | |
| N | 36 | 35 | 20 | 25 | 24 | 23 | 26 | 25 |

[a] in kilos

[b] in centimeters

[c] in millimeters

Source: The Ava-Guarani Survey 1980

TABLE EIGHT
MEDICAL HISTORY

| Age group | 1-9 | | 10-19 | | 20-39 | | 40-69 | |
|---|---|---|---|---|---|---|---|---|
| Gender | M | F | M | F | M | F | M | F |
| Age | 4.6 | 4.6 | 12.9 | 14.0 | 29.5 | 28.7 | 49.6 | 51.5 |
| s.d. | 2.7 | 2.5 | 2.6 | 3.4 | 6.0 | 6.7 | 9.1 | 7.8 |
| Colds[a] | 41.0 | 34.0 | 16.0 | 20.0 | 25.0 | 34.0 | 26.0 | 24.0 |
| s.d. | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.4 |
| TB[a] | --- | --- | --- | 8.0 | 8.0 | 4.0 | 3.0 | 16.0 |
| s.d. | | | | 0.3 | 0.3 | 0.2 | 0.2 | 0.4 |
| 1979-80 morbidity[a] | 20.0 | 20.0 | 3.0 | 8.0 | 12.0 | 13.0 | 34.0 | 28.0 |
| s.d. | 0.4 | 0.4 | 0.2 | 0.3 | 0.3 | 0.3 | 0.5 | 0.5 |
| Consumption of med.[a] | 22.0 | 14.0 | 10.0 | 12.0 | 16.0 | 26.0 | 15.0 | 40.0 |
| s.d. | 0.4 | 0.4 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.5 |
| TB vac.[a] | 36.0 | 48.0 | 43.0 | 40.0 | 16.0 | 34.0 | 26.0 | 20.0 |
| s.d. | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 | 0.5 | 0.4 |
| Small Pox vaccine[a] | 52.0 | 51.0 | 70.0 | 80.0 | 50.0 | 60.0 | 65.0 | 64.0 |
| s.d. | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 |
| Measles vaccine[a] | 50.0 | 51.0 | 66.0 | 80.0 | 45.0 | 52.0 | 38.0 | 64.0 |
| s.d. | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 |
| Other vaccines[a,b] | 25.0 | 28.0 | 24.0 | 32.0 | 20.0 | 17.0 | 11.0 | 28.0 |
| s.d. | 0.4 | 0.5 | 0.4 | 0.5 | 0.4 | 0.4 | 0.3 | 0.5 |
| Pregnancies[c] | --- | --- | --- | 1.6 | --- | 4.9 | --- | 6.2 |
| s.d. | | | | 0.8 | | 2.4 | | 2.4 |
| Child mortality[d] | --- | --- | --- | 0.5 | --- | 1.7 | --- | 1.8 |
| s.d. | | | | 0.8 | | 1.0 | | 1.7 |
| N | 36 | 35 | 20 | 25 | 24 | 23 | 26 | 25 |

[a]percentage of population

[b]includes polio, tetanus and mumps

[c]average number of pregnancies

[d]average number of child deaths under age of 10 for mothers in these age groups

Source: The Ava-Guarani Survey 1980

who is 150 cm. tall is a fully grown adult with totally different body proportions. Therefore the measurements provided by the standard tables are not used to compare with the measurement of the Ava-Guarani, but the patterns between age groups and genders are utilized.

The health information has been aggregated into 4 age groups: 1) children, ages 1 through 9; 2) adolescents aged 10 through 19; 3) young adults (child bearing years) aged 20 through 39; and 4) older adults aged 40 through 69. The reason these groups were created was to provide a large enough sample within each age group so that the data would be statistically meaningful. One difficulty emerged when the data of the adolescents were aggregated; the average female adolescent was 14 years old whereas the average male adolescent was only 13 years old. This difference, compounded by the fact that females go through puberty at an earlier age than males, could have created some discrepancy in some of the data.

The average Ava-Guarani family size is only 4.5 which is small considering that the average woman has 6 children. Of course, the controlling factor is the extraordinarily high child mortality rate of 290 per 1000 (this includes all children under the age of 10). This high death rate can be attributed to two major causes, diarrhea and pneumonia. These are, in turn, complications of colds, measles, internal parasites, whooping cough and other diseases. There is no information to differentiate female and male child mortality rates, but there are data that male children have a higher morbidity rate than female children (see Table Eight). Taking this into consideration with the disproportionate male-female gender ratio among children (38/35=109), it is likely that the females actually become ill as frequently (if not more frequently) than

do the males, but since they do not receive the care and the medication the males do they have a higher mortality rate. This hypothesis is borne out by the over-all male-female ratio of 108 which is high as compared to the Paraguayan ratio of 98 (Laird 1979).

The Ava-Guarani are short. The adult males (aged 20-39) have an average height of 161 cm (5'3.3") and the adult females average 148 cm. (4'10.2"). It is their corresponding weights that raise the question of protein distribution. The women weigh an average of 52 kilos (114.4 pounds), which is 5 percent above the "standard" on the height-weight tables, and the men average 57 kilos (125.4 pounds) which is 10 percent below the "standard" (Jelliffe 1966:238-241).

TABLE NINE
VARIATION FROM THE "STANDARD" REFERENCE TABLE

| | Children | | Adults | |
|---|---|---|---|---|
| | M | F | M | F |
| Tricepts Skin-Fold (fat) | 113% | 101% | 62% | 106% |
| Arm Muscle Circumference | 92% | 93% | 82% | 89% |

Note: Values were arrived at by using the formula $\frac{\overline{M} - A}{A}$ with $\overline{M}$ equaling the means obtained from the Ava-Guarani Survey 1980 and A equaling the "standard" given in Gurney and Jelliffe 1973.

Using the triceps skin-fold and the triceps arm circumference to calculate the arm muscle circumference, the data show that the women have 6 percent more fat and 11 percent less muscle than the "standard." Men have 38 percent less fat and 18 percent less muscle than "standard." This disparity

in fat and muscle tissues is caused by a difference between male and female dietary habits and physical activities (Gurney and Jelliffe 1973).

The diet of the Ava-Guarani (as seen by their monthly purchases and by the crops which they grow) primarily consists of carbohydrates and very little protein which they compensate for by consuming even greater quantities of carbohydrates. This is apparent in all age groups by the fact that they have too much fat and too little muscle by standard measure. The exceptions to this are the male adults who are deficient in fat deposits, however, considering their activity as field laborers it is understandable that they would burn off their calories. The women who do not work in the fields would accumulate the excess calories.

By performing the same calculations on children it was found that the situation is the reverse. Boys have more fat reserves than do the girls. This indicates that parents focus their attention more on the males by supplying them with a greater portion of carbohydrates than they give the girls. Although all children receive inadequate amounts of protein, this extra care makes the boys somewhat fatter than their sisters.

## Clinical Observations

Taking into consideration the monthly purchases of the Ava-Guarani and their crops, the clinical symptoms support the conclusions that the diet of the Ava-Guarani is high in carbohydrates and deficient in proteins, iron, vitamin A and several B vitamins. These data do not support the hypothesis that males are better fed than females.

The most common pathological symptom seen is pale nails, a primary symptom of anemia. Secondary symptoms include brittle nails and brittle

TABLE TEN
CLINICAL OBSERVATIONS

| Age group | 1-9 | | 10-19 | | 20-39 | | 40-69 | |
|---|---|---|---|---|---|---|---|---|
| Gender | M | F | M | F | M | F | M | F |
| Age | 4.6 | 4.6 | 12.9 | 14.0 | 29.5 | 28.7 | 49.6 | 51.5 |
| s.d. | 2.7 | 2.5 | 2.6 | 3.4 | 6.0 | 6.7 | 9.1 | 7.8 |
| Pale nails[a] | 50.0 | 60.0 | 30.0 | 44.0 | 29.0 | 74.0 | 38.0 | 72.0 |
| s.d. | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 | 0.5 |
| Brittle nails[a] | 5.0 | 14.0 | 3.0 | --- | 12.0 | 21.0 | 26.0 | 28.0 |
| s.d. | 0.2 | 0.4 | 0.2 | | 0.3 | 0.4 | 0.5 | 0.5 |
| Smooth tongues[a] | 19.0 | 20.0 | 10.0 | 20.0 | 8.0 | 34.0 | 15.0 | 16.0 |
| s.d. | 0.4 | 0.4 | 0.3 | 0.4 | 0.3 | 0.5 | 0.4 | 0.4 |
| Dry skin[a] | 22.0 | 48.0 | 10.0 | 12.0 | 20.0 | 30.0 | 15.0 | 40.0 |
| s.d. | 0.5 | 0.5 | 0.3 | 0.3 | 0.4 | 0.5 | 0.4 | 0.5 |
| Depigmented hair[a] | 44.0 | 51.0 | 6.0 | 20.0 | 20.0 | 26.0 | 7.0 | 32.0 |
| s.d. | 0.5 | 0.5 | 0.3 | 0.4 | 0.4 | 0.4 | 0.3 | 0.5 |
| Thin, sparse hair[a] | 11.0 | 28.0 | --- | 4.0 | --- | --- | --- | 12.0 |
| s.d. | 0.3 | 0.5 | | 0.2 | | | | 0.3 |
| Missing teeth[b] | 0.9 | 0.9 | 1.6 | 1.9 | 0.5 | 6.7 | 9.8 | 12.7 |
| s.d. | 2.2 | 2.0 | 2.5 | 3.2 | 5.1 | 5.4 | 7.7 | 8.8 |
| Caries[b] | 1.3 | 1.2 | 1.7 | 1.6 | 3.8 | 4.2 | 4.0 | 3.7 |
| s.d. | [illegible] | 1.9 | 2.4 | 1.8 | 3.9 | 3.1 | 3.4 | 3.1 |
| Urine pH[c] | 6.4 | 6.2 | 6.1 | 6.0 | 6.2 | 6.2 | 6.1 | 5.8 |
| s.d. | 1.0 | 0.8 | 0.7 | 0.6 | 1.0 | 0.8 | 1.0 | 0.9 |
| Urine blood[a] | --- | --- | --- | 16.0 | 4.0 | 26.0 | 3.0 | 40.0 |
| s.d. | | | | 0.4 | 0.2 | 0.4 | 0.2 | 0.5 |
| Parasites[a] | 77.0 | 82.0 | 66.0 | 72.0 | 62.0 | 82.0 | 73.0 | 56.0 |
| s.d. | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 | 0.5 |
| N | 36 | 35 | 20 | 25 | 24 | 23 | 26 | 25 |

[a]percentage of population
[b]number per person
[c]average pH per person

Source: The Ava-Guarani Survey 1980

hair caused by a number of factors including deficiencies in the consumption of cobalamin (B12), ascorbic acid (vitamin C), folacin and iron, and by parasites, pregnancies, loss of blood (especially through menstruation) and several diseases. Anemia is the deficiency or the inefficiency of the red blood cells which reduces the body's transport capacity of oxygen. As a result, people with anemia suffer from shortness of breath and easy fatigability, and in children it contributes to growth retardation (Krupp and Chatton 1980:297).

Among the Ava-Guarani the manifestation of these systems is probably a result of their dietary deficiences and the high presence of internal parasites. This would concur with the findings of the 1965 nutritional survey taken by a Paraguayan and North American team of nutrition specialists (Schaefer 1967). The high frequency of these symptoms indicates that the Ava-Guarani lack the essential nutrients found in meats, green leafy vegetables and beans. Although the anthropometrics indicate that there is disproportionate distribution of nutrient rich foods in the Ava-Guarani households, none of the clinical observations can demonstrate this. The higher nutrient requirements of children and women will produce a higher percentage of pathological symptoms if they receive an equal portion of the nutrient rich foods. What they require is a greater proportion of these foods (Whitney and Hamilton 1977).

It is alarming that 74 percent of the Ava-Guarani women, in their child bearing years, show definite symptoms of anemia. This is reflected in their health and in the health of the children they bear. The children who have anemia are affected in their learning abilities as well as their health. Frequently anemia in male adults is not considered as serious

a problem. However, their ability to work and learn is imparied by anemia and must be considered serious when 33 percent of the male population is anemic.

The second prominent deficiency is PCM (Protein-Calorie Malnutrition), a term nutritionists use to identify deficiency diseases along a protein-calorie spectrum. The spectrum was designed because these deprivations are so highly correlated. Among the Ava-Guarani there are no indications of calorie malnutrition (especially in the form of marasmus). However, symptoms indicative of protein deficiency are common. Roughly 50 percent of the children and 25 percent of the adults manifest at least one of the following symptoms: brittle nails, dry skin, dispigmented hair. In the more severe cases, these symptoms include easy pluckability of hair, thin and sparse hair, "moon face" and edema (Jelliffe 1966:43).

Among the Ava-Guarani children, 7 of 71 children had signs of <u>severe</u> malnutrition, and 3 had <u>very severe</u> malnutrition, as compared with the Paraguayans who have 2 percent <u>severe</u> and 1 percent <u>very severe</u> (Schaefer 1967). This disease stunts their physical and mental growth, weakens their defenses to other diseases and decreases their ability to work and play.

In Paraguay the principal parasites are hook worm, round worms, and flat worms. Women and children are more likely to have hook worms because they do not wear shoes and because they remain in and around the house where the presence of larva (which penetrate the foot) is very high. The number of reported cases in women is higher than in men because the women are more aware of their stools. In adults these parasites will cause anemia, with its ensuing side effects. In children, parasites are

much more serious in that they lead to anemia and protein deficiency and to diarrhea which is the highest cause of infant mortality in Paraguay (Schaefer 1967).

The most widespread disease among the Ava-Guarani is tooth decay, with adults missing one-third of their teeth and having untreated caries in one-fourth of their remaining teeth. Although this is usually indicative of a calcium deficiency, it is not collaborated in the survey by any other symptoms such as rickets or osteomalasia. The problem is the lack of education in dental hygiene, the unavailability of dental services, and a diet high in refined sugars and refined carbohydrates (Jelliffe 1966).

The urine analysis for ketones, glucose, pH and proteins was negative. An alarming rate of blood was discovered in women, most (but not all) was non-hemolyzed and can be attributed to menstrual flow. However, a number of women (who were postmenopausal) and men had hemolyzed blood in their urine. This indicates the presence of other medical problems which require further analysis.

The evaluation of their blood pressure and pulse showed that only one male adult had high blood pressure. He was the only person who was more than 10 percent overweight.

The most frequently diagnosed disease of the Ava-Guarani is *sarampión*, which means "measles". However, without a proper diagnosis it is impossible to say whether or not a case of *sarampión* is actually measles or some other disease that the Ava-Guarani classify as *sarampión*. Four years ago *sarampión* was responsible for an epidemic that killed approximately 10 percent of the children.

TABLE ELEVEN
HEALTH DIFFERENCES OF SUB-GROUPS

| Age group | 1-9 | | 10-19 | | 20-39 | | 40-69 | |
|---|---|---|---|---|---|---|---|---|
| Gender | M | F | M | F | M | F | M | F |
| **Laborers** | | | | | | | | |
| Triceps skinfold[a] | 10.2 | 10.9 | 12.8 | 15.3 | 7.7 | 17.7 | 7.6 | 16.7 |
| s.d. | 2.3 | 3.0 | 3.2 | 2.7 | 5.9 | 4.6 | 3.3 | 6.7 |
| Triceps circum.[b] | 15.9 | 17.9 | 20.0 | 21.2 | 24.9 | 24.0 | 25.8 | 25.5 |
| s.d. | 1.6 | 4.9 | 3.2 | 3.9 | 3.6 | 3.6 | 2.8 | 2.8 |
| Pale nails[c] | 44.4 | 50.0 | 25.0 | 16.6 | 28.5 | 83.3 | 60.0 | 66.6 |
| s.d. | 0.5 | 0.5 | 0.5 | 0.4 | 4.9 | 0.4 | 0.5 | 0.5 |
| Brittle nails[c] | --- | --- | --- | --- | 42.9 | --- | 20.0 | --- |
| s.d. | | | | | 0.5 | | 0.4 | |
| Depigmented hair[c] | 44.4 | 25.0 | --- | --- | 42.9 | 33.3 | --- | --- |
| s.d. | 0.5 | 0.5 | | | 0.5 | 0.5 | | |
| Child mortality[d] | --- | --- | --- | 1.0 | --- | 2.0 | --- | 1.8 |
| s.d. | | | | --- | | 0.7 | | 1.9 |
| N | 9 | 8 | 8 | 6 | 7 | 6 | 5 | 6 |
| **Peasants** | | | | | | | | |
| Triceps skinfold[a] | 10.3 | 9.1 | 13.2 | 15.2 | 7.4 | 18.1 | 8.3 | 16.4 |
| s.d. | 3.2 | 3.3 | 3.8 | 6.8 | 1.9 | 5.5 | 2.2 | 4.5 |
| Triceps circum.[b] | 16.2 | 14.7 | 20.4 | 21.4 | 24.6 | 23.8 | 27.3 | 22.9 |
| s.d. | 1.5 | 2.2 | 3.0 | 4.5 | 4.1 | 2.4 | 3.0 | 3.0 |
| Pale nails[c] | 69.2 | 84.6 | 28.6 | 42.8 | 30.0 | 100.0 | 25.0 | 72.7 |
| s.d. | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | --- | 0.5 | 0.5 |
| Brittle nails[c] | --- | 30.7 | 7.1 | --- | --- | 44.4 | 33.3 | 45.5 |
| s.d. | | 0.5 | 0.3 | | | 0.5 | 0.5 | 0.5 |

Table Eleven — continued

| Age group | 1-9 | | 10-19 | | 20-39 | | 40-69 | |
|---|---|---|---|---|---|---|---|---|
| Gender | M | F | M | F | M | F | M | F |
| **Peasants** | | | | | | | | |
| Depigmented hair[c] | 38.5 | 84.6 | 7.1 | 21.4 | --- | 22.2 | --- | 54.4 |
| s.d. | 0.5 | 0.4 | 0.3 | 0.4 | | 0.4 | | 0.5 |
| Child mortality[d] | --- | --- | --- | 0.5 | --- | 1.9 | --- | 2.2 |
| s.d. | | | | 1.0 | | 1.7 | | 2.0 |
| N | 13 | 13 | 14 | 14 | 10 | 9 | 12 | 11 |
| **Subsistence farmers** | | | | | | | | |
| Triceps skinfold[a] | 10.4 | 9.2 | 11.4 | 11.6 | 8.0 | 16.6 | 8.3 | 11.8 |
| s.d. | 2.8 | 3.8 | 4.0 | 7.4 | 2.6 | 6.0 | 2.3 | 4.8 |
| Triceps circum.[b] | 16.8 | 16.2 | 20.2 | 19.0 | 25.3 | 25.4 | 27.2 | 22.8 |
| s.d. | 4.3 | 1.7 | 2.1 | 3.8 | 2.6 | 1.8 | 3.7 | 2.5 |
| Pale nails[c] | 35.7 | 42.9 | 37.5 | 80.0 | 28.6 | 37.5 | 44.4 | 75.0 |
| s.d. | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 |
| Brittle nails[c] | 14.2 | 7.1 | --- | --- | --- | 12.5 | 22.2 | 25.0 |
| s.d. | 0.4 | 0.2 | | | | 0.4 | 0.4 | 0.5 |
| Depigmented hair[c] | 50.0 | 35.7 | 12.5 | 40.0 | 28.6 | 25.0 | 22.2 | 25.0 |
| s.d. | 0.5 | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 |
| Child mortality[d] | --- | --- | --- | --- | --- | 1.3 | --- | 1.4 |
| s.d. | | | | | | 0.9 | | 1.1 |
| N | 14 | 14 | 8 | 5 | 7 | 8 | 9 | 8 |

[a] in millimeters

[b] in centimeters

[c] percentage of population

[d] average number of child deaths under age of 10 for mothers in these age groups

Source: The Ava-Guarani Survey 1980

## Health Related to Sub-Systems

To test the primary hypothesis of this research the health data were sorted by the economic sub-system of the households, by age group and by gender (see Table Eleven). The results are conclusive, the health data do not support the hypothesis: the people within the cash-economy do not manifest better health than those outside the cash-economy. There are two possible explanations for this. First, the manner in which a person frequently changes economic sub-systems through his lifetime makes it impossible to know if he had been in a particular sub-system long enough to affect his health. Secondly, the relationship between sub-systems is such that there is a flow of purchased merchandise from laborers to subsistence farmers in return for farm products. This reduces the correlation between a sub-system and health status.

The anthropometric data imply that Ava-Guarani females receive a diet higher in carbohydrates than do the males. It could be hypothesized that the males receive a better diet while working as laborers, leaving the females at home with a poor diet of mandioc. Another unusual factor is the sex ratio of 108 which seems to indicate that the female mortality rate is significantly higher than the male mortality rate. This would tend to support the theory that they are receiving a poorer diet than are the males.

Further research into these relationships would be required to properly determine the cause and effect of all the inter-related sub-systems.

# CHAPTER SIX
# CONCLUSIONS

The 3 alternative approaches to development which have been tried by agencies that assist the Ava-Guarani are: 1) to assimilate the Ava-Guarani into the Paraguayan mestizo culture as quickly as possible, 2) to assimilate the Ava-Guarani at a gradual pace, and 3) to resist assimilation or at least minimize it as much as possible. The agencies that argue in favor of assimilation believe that the Ava-Guarani will have a better standard of living when they become fully incorporated into the cash-economy. The hypothesis that this research was designed to test objectively is whether or not the assimilationists are correct. The data gathered on the health of the Ava-Guarani do not confirm this hypothesis, the health of those within the cash-economy could not be shown to be better than those outside the cash-economy, therefore seriously challenging the fundamental argument of the assimilationists.

An explanation of why assimilation is not the answer for the Ava-Guarani is found in the history of their social, political and economic systems. Their post-Jesuit history has been one of deliberate isolation from the mainstream Paraguayan world. The Ava-Guarani, however, have had some contact with Westerners and as a result they have made modifications to their culture in order to retain as much as possible of their traditional lifestyles. This modification of their culture is an act of <u>acculturation</u> but not of <u>assimilation</u>. There are many examples of how they have become acculturated.

First, although the Western concept of political leadership had been introduced to the Ava-Guarani by the colonists, the Jesuits and the later multinationalists, the political roles that developed in the context of their culture have been altered and the functions served are considerably different from those Westerners believe to operate. Today these political roles maintain harmony in villages that have two or more phratries, a situation which only occurred when the land base was diminished and the Ava-Guarani were confined to small parcels of land.

Secondly, certain social activities such as soccer games and the drinking of *yerba mate* which are practiced by the Paraguayans but which serve different functions within the Ava-Guarani culture were adapted to serve as forums by which alliances are established between individuals and between phratries.

Thirdly, the intensity of the Prayer Dance, which in itself is a modification of their religion and Christianity, is not merely a manifestation of stress but it is primarily a contemporary activity which functions to re-establish a pattern of behavior based upon their cultural values.

Finally, the Ava-Guarani economic sub-systems are an adaptive strategy developed in response to a desire to retain their traditional culture. The complexity of the networks between sub-groups must be fully appreciated because they function to redistribute goods, build alliances, maintain harmony and release social anxieties. These economic networks allow the Ava-Guarani to be tremendously flexible in an unstable environment.

In conclusion, the acculturation of social, political and economic systems allow the Ava-Guarani to retain their general cultural base despite

the fact that there are insufficient resources for the entire population to remain as subsistence farmers. This acculturation is an act to avoid assimilation and it does not seem logical that introducing programs which are designed to do something that the Ava-Guarani are actively resisting is actually beneficial in any way. Although the Ava-Guarani are not assimilating directly into Paraguayan society, they are making constant modifications in their behavior in a classical acculturative manner.

The question as to the development strategies to be followed is critical. This research indicates that all projects should: 1) realize the principal problem that the Ava-Guarani face is a dearth of resources due to the reduction of their land base; 2) be aware that the Ava-Guarani have developed a number of complex adaptive strategies in order to survive in their new socio-economic environment; 3) respect that they are actively seeking to retain their cultural identity; and 4) be cognizant of their economic sub-systems that function in order to allow the Ava-Guarani to tap the cash-economy without being drawn into it.

## GLOSSARY

Acculturation: The ways in which some cultural aspect is taken into a culture and adjusted and fitted to it (Herskovits 1938).

AIP: The Asociación Indigenista del Paraguay, a civil agency with the following goals: 1) anthropological research; 2) obtain land for the Indians of Paraguay; 3) introduce laws that will protect the Indians; and 4) co-operate with other agencies that seek the same goals (AIP 1977).

API: The Asociación de Parcialidades Indígenas, an agency with representatives from all Indian peoples in Paraguay. It is an organization of the Indians not just for them.

Assimilation: The process of transforming aspects of a conquered or engulfed culture into a status of relative adjustment to that of the ruling culture (Herskovits 1938)

Authority: The ability to shape the behavior of other individuals without the use of naked force, bargaining, or persistent and elaborate persuasion (Kousoulas 1971:402).

Ava-Guarani: One of six sub-groups of the Guarani Indians in Paraguay, also known as the Chiripa, Ava-Katu-Ete and the Ñandeva.

Ca'agua: The name used in this paper to refer to all the Guarani Indians between the time the Jesuits were exiled and the end of the Triple Alliance War. There are several spellings used throughout this period to refer to these people including Caaingua, Kaagua, Kaingua and Kaygua.

*Cuati'a* Complex: The need of the Ava-Guarani to obtain legitimacy from outside the village rather from within; this is manifested by the high value placed upon *cuati'a* or papers (documents).

Entisols: A fairly new soil found as alluvial deposits or volcanic debris, usually with few soil nutrients.

Frontier: The zone (100 kilometers wide and 500 kilometers long) that lays on the border with Brazil. Until recently it was the refuge of the Ava-Guarani and consisted of the tropical forest.

GUARANI: The language spoken by the Paraguayans and the Guarani peoples.

Glossary — continued

Guarani: The Indigenous peoples of Paraguay that share in common their language, parts of their culture and their religion.

IBR: Instituto de Bienestar Rural, the Paraguayan land reform agency responsible for the titling of land for the Indians.

INDI: Instituto Nacional de Indígena, part of the Ministry of Defense, that serves to co-ordinate the activities of other agencies and represents the National government.

Legitimacy: The right to exercise power with authority (Kousoulas 1971: 404).

Laborer: In the context of this research, one who practices a minimal amount of farming and relies upon an income for subsistence.

Mbya: A sub-group of the Guarani Indians of Paraguay who live to the south of the Ava-Guarani; also known as the Apytere, Baticola and Jequaka Tenonde poraquei.

Oxisols: A soil group characterized by a single horizon of either clay or sandy soil, with low fertility and high content of either iron or aluminum (making them fairly acid). It is the principal soil of the Frontier.

Paĩ-Tavytera: A sub-group of the Guarani Indians of Paraguay who live to the north of the Ava-Guarani. Also known as Pañ.

Paraguayan: This is a label to denote all non-Indian Paraguayan nationals, most of whom speak GUARANI but who do not share many cultural attributes with the Guarani.

*Patrõ positivo*: A person who employes the Ava-Guarani year round, usually a Brazilian.

Peasant: Small farmers who produce a surplus for market.

Phratry: A group of two or more sibs that recognize a purely conventional unilinear bond of kinship (Murdock 1949:47).

Sarampion: Literal translation of measles, but it appears to be a broader category that encompasses an undetermined number of severe diseases.

Schismogenisis: The process by which several neighboring villages will tend to magnify their differences and minimize their similarities in order to differentiate themselves from one another (Bateson 1958).

Glossary - continued

Spodosols: A soil group which is characterized by a horizon of leached soil, followed by a zone of accumulation at a depth of 1 to 1.5 meters, usually not very good for farming.

Subsistence farmers: Those agriculturalists who rely heaving upon the forest for hunting and gathering purposes, and who particulate to a minimal extent in the cash-economy.

SVD: The Sociedad de Verbo Divino: The Divine Word Order of the Catholic Church, who serve as missionaries throughout the world as specialists with the poorest of the poor.

TUPI-GUARANI: One of five major language groups of lowland South America.

tupi-guarani: The people who speak TUPI-GUARANI languages, especially the tropical forest peoples (although some people use this term to refer only to particular sub-groups in Brazil).

*Yerba-mate*: Paraguayan tea, used in an elaborate tea-sharing ceremony vital to building and maintaining inter-personal ties.

## APPENDIX A
## SCHEDULE CONCERNING SUBSISTENCE METHODS

Town

Gender

I.D. number

Age

House number

Date

1) How many ha. do you own? (0-9 ha.)

2-15) How much of each crop to you plant? (0-9 ha.)

16-29) What crops do you sell? (0-100%)

30-43) What price do you receive for your crops? (0-100% market value)

| | | | |
|---|---|---|---|
| ( 2) | (16) | (30) | Mandioc |
| ( 3) | (17) | (31) | Corn |
| ( 4) | (18) | (32) | Beans |
| ( 5) | (19) | (33) | Rice |
| ( 6) | (20) | (34) | Soybeans |
| ( 7) | (21) | (35) | Cotton |
| ( 8) | (22) | (36) | Tobacco |
| ( 9) | (23) | (37) | Yam |
| (10) | (24) | (38) | Squash |
| (11) | (25) | (39) | Sugar Cane |
| (12) | (26) | (40) | Peanuts |
| (13) | (27) | (41) | Onions |
| (14) | (28) | (42) | Bananas |
| (15) | (29) | (43) | Papayas |

44-48) What livestock do you have and how many of each (0-15)

49-53) How many of each do you sell? (0-15)

54-58) What price do you receive for your animals? (0-100)

| | | | |
|---|---|---|---|
| (44) | (49) | (54) | Chickens |
| (45) | (50) | (55) | Pigs |
| (46) | (51) | (56) | Donkeys |
| (47) | (52) | (57) | Horses |
| (48) | (53) | (58) | Cattle |

Appendix A — continued

59-74) What possessions do you own and how many of each? (0-10)

59 Machetes
60 Hoes
61 Foixas
62 Shovels
63 Axes
64 Handplanters
65 Guns
66 Saws
67 Hammers
68 Flashlights
69 Lamps
70 Radios
71 Pots
72 Blankets
73 Mattresses
74 Bicycles

75-91) How much of the following do you purchase in an average month? (0-20 kg.)

75 Sugar
76 Oil
77 Lard
78 Meat
79 Rice
80 Beans
81 Noodles
82 Flour
83 Yerba mate
84 Corn flour
85 Galleta
86 Soap
87 Salt
88 Milk
89 Candles
90 Mandioc flour
91 Alcohol

92) Do you purchase medicines from the pharmacy? (no/yes)

93) Do you assist anyone else in their farmwork? (no/yes)

94) Does anyone assist you in your farmwork? (no/yes)

Appendix A — continued

95-100) How many of the following do you have?

95 Hammocks
96 Bows
97 Baskets
98 Beds (homemade)
99 Traps
100 Gourds

101) Do you sell any artifacts? (no/yes)

102-104) Do you gather any of the following items and, if so, how often? (0-7 days/week)

102 Yerba mate
103 Palmito
104 Lumber

105) Do you hunt? (0-7 days/week)

106) Do you fish? (0-7 days/week)

107-109) What household member works and for how much?

107 Husband
108 Wife
109 Other

APPENDIX B
HEALTH SCHEDULE

Town:_____ Date:_____

I.D. number:_____ House:_____ Time:_____

AGE:_____ GENDER:_____

HEIGHT:_____ WEIGHT:_____

BLOOD PRESSURE:_____ PULSE:_____

SKIN: healthy dry swollen dyspigmentation

MUSCLES: healthy wasted internal bleeding no fat reserves

LIPS: healthy red and swollen fissures

TONGUE: healthy swollen magenta smooth sores coated

TEETH: healthy missing_____ cavities_____ abnormal growth

GUMS: healthy spongy bleeding recession

THROAT: healthy swollen infected

L. EYE: healthy membranes red Bitot dull scar fissures

R. EYE: healthy membranes red Bitot dull scar fissures

THYROID: healthy swollen

LYMPHATIC: healthy swollen

NAILS: healthy spooned pale brittle

FACE: healthy moon-face depigmentation scaling

HAIR: healthy dull thin and sparse flag pluckable

URINE: color_____ pH_____ aspect_____ protein_____

ketons_____ glucose_____ blood_____

Appendix B — continued

SKINFOLDS: triceps_____ subscapular_____ suprailiac_____

MEASUREMENTS: tricep circumference_____ head circumference_____

high chest_____ supine (infants)_____

PARASITES: ascaris (roundworm)_____ anquilostoma (hookworm)_____

tapeworm_____ other_____

DISEASES: diarrhea_____ TB_____ respiratory_____ other_____

measles_____ malaria_____ leprosy_____ other_____

VACCINES: TB_____ smallpox_____ measles_____ other_____

PREGNANCIES: # of times_____ still births_____ child deaths_____

other_____

DEMOGRAPHICS: deaths in the last year_____ severe sicknesses_____

MEDICINES: which_____ for what purpose_____

MEDICAL SERVICES: M.D._____ shaman_____ midwife_____

BONES: broken_____ deformed_____

Nutritional Deficiencies

| ELEMENT | DISEASE | SYMPTOMS | PRESENT |
|---|---|---|---|
| protein-calorie | kwashiorkor | retard growth, apathy, edema, hair and skin depigmented, flaky skin, diarrhea | |
| | Marasmus | muscle wasting | |
| niacin | pellagra | dermatitis, glossitis, stomatitis, diarrhea and mental disturbances | |
| iodine | goiter | enlargement of the thyroid glands | |

Appendix B — continued

| | | |
|---|---|---|
| calcium | rickets | bone deformity in children |
| riboflavin | ariboflavinosis | angular stomatitis, seborrheic dematitis, ocular itching and burning |
| thiamine | beri beri | depression, irritability, fatigability, muscle deterioration, loss of light touch sense, pain in feet |
| iron | anemia | pale, weak, headache, fatigability |
| vitamin A | avitaminosis A | night blindness and hyperkeratinization |

OBSERVATIONS:

## APPENDIX C
## BIBLIOGRAPHIC SOURCES

Reviewing the information concerning the Ava-Guarani we find very little which had been empirically gathered. The existing works can be classified as historical, mythological and anthropological. The historical works are primarily based upon the empirical observations of the Jesuits. The best example is the beautifully related Misiones y sus Pueblos de Guaranies by Guillermo Furlong. In addition to his well-researched presentation, this book has an extensive bibliography. The information is this book helps us understand the tupi-guarani, which in turn provides us with means to measure the differences between them and their posterity, the Ava-Guarani.

Aside from books that deal with the Missions, there are few historic books that discuss the Guarani. Of these, Dr. Moises Santiago Bertoni's two volume La Civilización Guarani is the most complete. Bertoni lived in Puerto Bertoni on the Paraná River, a company town in the Frontier. His books on the Guarani were written during the time that they were forming their sub-groups, therefore, he was unable to clearly differentiate between the sub-groups. Puerto Bertoni is in the southern third of the Frontier and it is apparent that he received his information from Jesuit records and through interviews with Mbya port laborers.

The mythological works are classified as such because they focus upon myths and not believe I wish to insinuate that they are inaccurate.

Appendix C — continued

In this category we find several short compilations of stories, fables, myths, legends, mestizo folklore and creative writings. Several of these compilations do give insight into the Guarani and Paraguayan cultures, but since they give every indication of being "twice-told tales" and not mythologies directly from the Indians it is impossible to sort fact from fiction. Among these works are Ernesto Morales' Leyendas Guaranies, Natalicio Gonzalez' Ideologia Guarani, Gustavo Gonzalez' Mito, Leyendas y Superticiónes Guaranies del Paraguay and José Cruz Rolla's Folklore, Ritos y Costumbres del Pueblo Guarani. None of these authors claims to have accomplished original research among the Guarani.

There are works which are between the categories of mythology and anthropology. León Cardogan, one of the most outstanding Indianists and scholars of Paraguay, spent his life working and living for the Myba. He collected tremendous data concerning their folklore and their culture. He also contributed a few general articles on the Ava-Guarani, but unfortunately he actually visited Ava-Guarani communities only a few times and his articles on the Guarani are rather superficial.

Among the anthropological works on the Guarani there is a lack of information on the Ava-Guarani. In the Handbook of South American Indians, Metraux wrote the section on the Guarani. His information came from Bertoni's work and from works on other tupi-guarani people. Although he mentions the sub-groups, he is unable to make clear distinctions between them (Metraux 1946:69-94).

Curt Nimuendaju Unkel's Die Sagen von der Erschaffung und Vernichtung der Welt als Grundlagen der Religion der Apapocuva-Guarani is the best

Appendix C — continued

ethnographic research on the Ava-Guarani. It is now available in two Spanish translations and I understand that Robert Lowie has translated it into English. The Apapocuva (the people of the long bow) are an Ava-Guarani community in Brazil. Nimuendaju, at the age of 20, spent his first year in the field with these people. He relates, in a fairly professional way, his observations but it must be kept in mind that he was not an experienced ethnographer at the time and that he was primarily concerned with their religion (see Chapter Five).

Recently, there have been 3 works on the Guarani. The best is on the Paĩ-Tavytera and not on the Ava-Guarani. Los Paĩ-Tavytera is an ethnography by Bartomeu Melia, and Georg and Friedl Grunberg. It can serve as something upon which to compare and contrast the information on the Ava-Guarani. Secondly, there are sections devoted to the Ava-Guarani in Dr. Branislava Susnik's books on the Guarani. Her notes are well thought out but they contain only a compilation of the bits and pieces of information already found in other books. Finally, there is a new publication by Miguel Alberto Bartolome, Shamanismo y Religión entre los Ava-Katu-Ete. The majority of the information it contains comes from Unkel's work. Unfortunately little research was accomplished and nothing was added to our knowledge of the Ava-Guarani.

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## BIOGRAPHICAL SKETCH

Robert M. Albiol was born in La Paz, Bolivia, in 1953, and soon afterwards his family moved to the United States. They later returned to Latin America, first to Bolivia and then to Mexico. They finally moved to California where Bob received his undergraduate degrees in political science and history at the California State Polytechnic University in Pomona.

Between 1972 and 1975 he was Sergeant in the California Air National Guard, serving as an Administrative Assistant. In 1976 he joined the Peace Corps as a Volunteer and served for 42 months in Paraguay, starting as an Extension Agent for the Ministry of Agriculture and continuing as a Community Developer with the Ache-Guayaki and the Ava-Guarani Indians. While in Paraguay he married Loreto Silva.

His interest is development in Latin America. His philosphy is that the only way to help people is to respect them.