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**Considerations about health/illness processes in the first stages of the life cycle in two
Mbya – Guaraní communities from the Province of Misiones, Argentina**

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ABSTRACT

This paper presents the preliminary results from my research focused on beliefs and practices related with the life cycle and certain health-illness processes related to their different stages, in two Mbya communities in the province of Misiones, in the Argentinian northeast. We have centered our research on parasite illnesses and the groups' numerous beliefs and experiences around their origin, diagnosis, prevention and therapeutics.

Starting from the results obtained from an interdisciplinary research project on enteroparasitosis in these aboriginal communities and my work within the framework of some ethnographic research that has been developing since 1996, we set out to approach their knowledge and practices around gastrointestinal diseases mainly affecting child population, in the context of the group's everyday life.

Systematic observation was made of the activities performed by different sex and age members in several domestic units of these communities, in order to characterize the diagnosis, treatment and prevention strategies performed by different individuals as well as recognize and define risk situations related with parasite infestation and transmission in the context of their

domestic activities. Likewise, open-ended interviews were made to adults of both sexes – laymen and local experts - in order to access to the group's categorization and definition of the lifecycle, as well as investigate into the health- illness processes associated to their different stages.

Our investigation showed that certain forms of child care, in particular those related to respecting food prescriptions and taboos are meant to protect children from possible risk situations.

Analysis and assessment of this information lead us to propose certain hypotheses about the connection between these practices and different environmental factors in terms of the prevalence of these illnesses during the first stages of life.

KEY WORDS: life cycle, health/illnesses processes, child care, Mbya, ethnography

1. CHARACTERISTICS OF THE AREA AND POPULATION UNDER STUDY

The *Mbya* inhabit the *Paranaense* Rainforest — one of the richest forest areas in terms of biodiversity among the environmental systems in South America. The *Mbya* —together with the *Kayova* and the *Ñandeva*— are one of the ethnic groups of the *Tupí-Guaraní* linguistic family which currently inhabit this ecosystem.

The *Paranaense* province takes up the whole of the *Misiones* province and the Northeast of the province of *Corrientes* in Argentina, and it stretches through Brazil and the East of Paraguay.

The local climatic pattern is hot and damp, with annual rainfall ranging between 1800 and 2000mm (though without any distinct rainy season), and with annual average temperatures of around 20°C, the highest temperature being around 40°C. (Cabrera, 1971)

According to official sources (Instituto Nacional de Asuntos Indígenas, 1993 in Amable *et al*, 1996), there are 52 *Mbya* communities in the province of *Misiones*, which are settled

alongside national highways 12 and 14, and alongside provincial highway 7. These communities add up to approximately 3700 people.

The *Mbya* communities under study —*Ka'aguy Poty* (“Flower of the Forest”) and *Yvy Pytã* (“Red Earth”)— are settled in the Reserve called *Reserva Privada Valle del Arroyo Cuña Pirú* which belongs to the *Universidad Nacional de La Plata*. The Reserve is an area located in the basin of the *Cuña Piru* stream which belongs to both Department of *Libertador General San Martín* and Department *Cainguas* (see Figure 1: Map). The census carried out by the authors of this study in May 2003 yielded a total of 277 people inhabiting the area (183 people in the former and 94 in the latter). The members of the *Ka'aguy Poty* and the *Yvy Pytã* communities use the *Mbya* language in their everyday communication and exchanges, but most men, young women, and children attending school also speak Spanish. Some grown-ups speak the Paraguayan variety of *Guaraní* (known as *jopara*), and/or Portuguese as well.

Traditional subsistence activities include, primarily, horticulture by means of the “slash and burn” system, as well as fishing, hunting and collecting wild fruits in the woodland.

At present, these activities are complemented with craft production and trading, and temporary jobs at the colonies (yerba mate, tobacco, tea and tung plantations) as well as the collection and trading of vegetal therapeutic resources. These new activities, which bring about a proportionately higher income than before, have given rise to numerous changes in their lifestyle, like the possibility to obtain elaborate (industrialized) food, which has brought about an important change in their diet. Therefore, local production is no longer the most important food source for the group.

Mbya people’s interrelation with the forest environment throughout the time has been characterized by their constant spatial mobility through this vast ecosystem. Variable-size group movement in search for favourable territories which allow them to continue their traditional subsistence activities have been the main component of this ethnia’s life strategies. Periodical circulation within the limits of the ecosystem allowed recovering previously occupied spaces.

Although this mobility is still ongoing, it is now observed only on an individual or small family unit scale, and the Mbya centres of population have tended to form more stable settlements. Different factors have contributed to this process towards a more sedentary lifestyle, namely, home allocation by requirement of ENDEPA (National Pastoral Aborigin Team). (Crivos, Teves and Sy, 2003)

We believe these processes have consequences on the population's sanitary state. Any human group life strategies in a given environment result in a particular distribution of vegetal and animal species, which favours new interspecies relationships. Some of them affect the forest's human population's quality of life, namely, parasitosis, which are endemic in this wide region. This environment is favourable for the development of different parasite species, which need the human being to complete their life cycle. (Remorini and Sy, 2004). Inadjustment between the Mbya and their environment -due, in part, to these new settling modalities of stable settling in overexploited spaces- is revealed in the pathogenesis of human enteroparasitosis. In that respect, biological research believes that social-environmental changes occurred in the Misiones forest during the last decades have favoured the appearance of new parasitosis as well as the increase in their occurrence. (Crivos, Teves, and Sy, 2003)

Considering these factors, as well as the sanitary importance of intestinal parasitosis in this region, an inter.-discipline study was started which gathered ethnographers, ethnobotanists and parasitologists. The data obtained showed convergence of the information coming from official institutions and that obtained from the dwellers. Both sources show recurrence of certain pathologies, mostly infectious diseases such as tuberculosis and gastrointestinal diseases, such as parasitosis and numerous associated pathologies -diarrhea, malnutrition, anemia-.

Moreover, the local concern about the effects of the various parasitosis on their children's growth and health, encouraged us to deepen ethnographic research in relation to certain beliefs and practices about health – illness processes in children in their everyday life and their interaction with the environment.

2. THE RESEARCH

2.1. Rationale for the study of health-illness and life cycle association

My participation in this interdisciplinary research focused on ethnographic investigation about the distribution of these highly prevailing diseases in the different age groups as recognized by the Mbya, with the aim of identifying the most vulnerable ones. Resulting information would be the basis to make hypotheses on the causes for such distribution given the local perspective about the relationship of certain ailments and sex and/or age of those suffering from them. With that aim, adult members of all domestic units (DU) in one of the communities (n=25) were interviewed about the diseases or ailments they had had or were having at the moment, taking into account the name they gave them in their Mbya language, the characteristics of the people suffering from them, their symptoms, ethiology and therapeutics.

The result we obtained was a rich narrative about their beliefs and practices around illness, which allowed us to make a hypothesis on their association between certain health – illness processes and the different stages in the lifecycle.

Considering the life cycle as the gradual process every human being goes through, we recognise it implies not only the gradual acquisition of biological attributes, which are characteristic of the human species, but also of behaviors, attitudes, knowledge and values which define their belonging to a particular society and their participation in it. Therefore, if we conceive human life as a dynamic whole integrating biological, psychological and social-cultural aspects of existence, such crucial experiences as being born, growing up, getting ill, getting old or dying, are not considered mere physiological processes, neutral in terms of symbolism, but culturally significant ones, as they have to do with linking with a universe of notions, values and beliefs that make it coherent and meaningful. (L. Córdoba and D. Villar, 2000: 143).

The study of the lifecycle has a long tradition in anthropological research and has been given an important place in ethnographic literature about aborigin and peasant societies since the discipline began. Since Morgan, Frazer, Boas, Linton, Mead, and Benedict, age and sex

have been considered the most important and universal variables in the social organization of this kind of societies. After Van Gennep (1986) the study of *rites of passage* gave rise to an area which is classic in ethnographic research (Feixa, 1996). Within the framework of the so called Culture and Personality School, the approach to the vital cycle became the main strategy to account for the way cultural patterns shape individual personality, and how societies assign roles and statuses to their members according to the expectations, values and stereotypes of the individuals belonging to different age groups. Examples of this is the work of Margaret Mead (i.e. 1972) and Erik Erikson (i.e.1959, 1985).

In spite of the vast literature on the subject in different societies, revision of ethnographic sources, especially of Guaraní and Mbya, revealed great scarcity of studies on the life cycle. In the work by Nimuendaju (1978), Métraux (1946, 1948), Clastres (1993), Susnik (1983), Muller (1989), Hanke (1995), Schaden (1998) and León Cadogan (1949, 1950, 1965, 1997), their treatment seems to be basically related to beliefs about conception, the souls, birth, childhood, puberty rites, marriage, death and funerary rites.

In this context, Cadogan's work is of special interest, as it links certain moments in the life cycle (birth, the giving of a name post delivery and puberty) to critical situations which may result in the risk to get ill due to the high vulnerability of individuals in those moments. We have never found, except for this author, any analysis of the link between the lifecycle stages and the health- illness processes related with them.

Moreover, focus on health and illness in classic bibliography about guaraní groups has centered on the description of traditional beliefs and medical practices related to the mythical-religious universe. However, towards the eighties, several works dealing with the problems around illness among the Mbya was directed towards epidemiological and public health aspects. Most of this work is focused on the study of the pathologies which are more important from the point of view of epidemic in these populations, and they present separately the conceptions and local practices in relation to them (for example, Kuperman, 1988; Pini, 1994; Ramirez Hita, 1994). They only characterize the general aspects of conceptions and local practices and do not discriminate the distribution of certain illnesses in different age groups.

Analysis of the information provided by bibliographic sources shows that representations about the illness are considered independently from everyday practices and they are shared collectively. This is due to the fact that they basically explore the subject from the mythical corpus or what was said by experts in the therapeutic domain, thus avoiding any connection of these beliefs with attitudes, behavior and everyday activities facing disease prevention, diagnosis and treatment. In an effort to overcome these limitations, we set ourselves the goal to achieve an ethnographic characterization of the representations and practices in relation to the health – illness processes during the first stages of the lifecycle (0-2 years). Unlike other approaches which only considered verbal sources, our research focuses on the observation of child rearing practices in the context of domestic tasks.

2.2. Methodology

Between the years 2001 and 2003 and as part of my doctoral thesis project, I started research on the relationship between the health- illness processes and child care practices to infants between 0 and 2 years old in the mentioned communities. According to M. Daltabuit Godás (1992: 195): “*Basic components of child caring start at delivery and include the cares during puerperium, child feeding practices, thermal regulation, sensory stimulation and socialising*”. That is to say, it refers to all representations and practices aiming at looking after and supervising children’s development and their welfare from those moments prior to their birth.

Fieldwork required the systematic and prolonged observation of everyday life, which was favoured by my stay and coexistence with the members of both communities. I performed two sets of fieldwork –lasting 4 months and 45 days respectively- during which I used a combination and complementing of observation techniques –systematic and participating- and interviews. Observations were made in two stages. The first one consisted–following M. Daltabuit Godás (1992) - of *long observations* in 5 domestic units (DU) of both communities, covering most of the day (8 am to 7 pm), for several consecutive days, with the purpose of

characterizing routine activities of their members, especially women and children. With that aim, and as long as it was possible, they were accompanied in their everyday itineraries. Participant observations were also made in other environments (other DU, the stream, the school's surroundings, paths) and also in two DU belonging to other communities (Arroyo Tamandua and Colonia Saracura –Dpto. 25 de Mayo).

On a second stage we performed *short observations* (two hours each set, in different moments of the day) at 9 homes in both communities, but this time focusing on children's behaviour and their interactions among them and with adults.

In relation to parasite illnesses, observations at the places where the people stay and move enabled us to recognise and define situations of risk in terms of infection and parasite transmission within the context of everyday activities in the domestic environment.

Observation techniques were complemented with thorough open-ended interviews to adults of both sexes (n=16) and different ages who were parents or grandparents to the children under observation- with the purpose of testing some hypotheses that arose from observation, mainly investigating on the fundamentals of the child-rearing activities recorded. Our choice of different-age men and women (between 23 and 65 years old) allowed us to assess similarities and differences among different generations of the same extended family.

These interviews allowed me to access the categorization and definition of the first stages of their life cycle from the group's point of view, as well as identify the events and/or processes where the Mbya find discontinuities in child development and growth, and also investigate on the health – illness processes associated with them, stressing on gastrointestinal diseases. Afterwards, I interviewed some people we called 'local experts' –*poropoã no va'é*, that is, "the ones who know about medicinal plants" or "curanderos" (healers)-, who were chosen due to the fact that many of them had referred to them in relation to their knowledge of the diagnosis and treatment of these diseases (n= 5) .

3. HEALTH – ILLNESS PROCESSES AND LIFE CYCLE: GASTROINTESTINAL ILLNESS IN CHILDHOOD

Through our interviews we were able to identify a set of prescriptions as well as taboos affecting people's behaviour at certain moments of their vital cycle (basically gestation, delivery, post-delivery) whose failure to observe may bring about negative consequences on the child in gestation, newly born and in development. That is, the Mbya's discourse on the health-illness processes focuses on the tight link between respecting such rules and taboos and the etiology and prevalence of the illnesses affecting children

In this respect, observing everyday behaviour allowed us to access to the "symptoms" adults recognise and evaluate as indicating children's vulnerability, as well as the situations that may bring about illnesses of various degrees of seriousness. In this way, we linked "native theories" with diagnosis, therapy and prevention practices developed by different individuals within the domestic environment..

Following are some results from this approach, taking as an example the way gastrointestinal illnesses- and parasitosis in particular- are considered.

3.1. Knowledge, beliefs and practices around gastrointestinal illnesses

3.1.1. Etiology and Diagnosis

Newborn children and those in their first months of life are called *ava pyta i* and *kuña pyta i* (boys and girls respectively) in their vernacular language. Afterwards they are called *mitã i* in general or, according to their sex, *ava i* and *kuña i*. as far as the age of two.

Both in the Mbya's discourse and in official health centres we found that the most prevailing illnesses or ailments in these childhood stages are those affecting the digestive and respiratory systems. They are, in the vernacular tongue, parasites (*tacho*), different kinds of diarrhea (*gerachy*), 'belly pain' (*tyerasy*), flu (*jukua*), "cough" (*jukua*), bronchitis (*jukua*), 'fever' (*ipireracu*), "headache" (*akanasy*) and measles. As it can be seen, some pathological

states are defined and categorized in terms of their symptoms; because of this, there cannot be a strict correspondence with scientific medicine categories (Teves, L and Remorini, C. 1997).

Although all individuals are considered to be liable to having *tacho* (parasites) –which has been confirmed through coproparasitological analysis -, local concern for gastrointestinal diseases, and parasites in particular, is associated to childhood, and so it appears in their discourse as an ailment which is more frequently found in little children.

Care tending to prevent the pathological appearance of parasites and, consequently, parasite illness, starts as early as the gestational period, called *mitã irupy*, this is, “child who is in the uterus”.

Our informants explained that the mother expresses her wish to eat certain kinds of food while during gestation, especially sweet fruits or honey, and the husband must satisfy her wishes because they are, in fact, his future child’s wishes. If he did otherwise, the child in gestation might die, or else have difficulties to develop properly after birth: “*She has to eat, at least 3 or 4 times a week, what she likes. If she doesn’t, illness comes, it is born like this, skinny, you see? without life (...)*” (PD, Ka’ aguy Poty, 2003)

At the same time, they impose restrictions on the food the mother must consume (*tembiu ojeu va’era he’y*) to avoid illness. For example, wild animals (mainly coatí and kure) are referred to as the most dangerous food, as the origin to parasite illnesses in children under one year old is supposed to be found –among other causes – in the child’s or mother’s meat consumption during gestation.

In previous papers (Crivos et al, 2002a, Crivos et al, 2002b, Remorini and Sy, 2002) we have extensively developed the vernacular theory about the pathological origin and occurrence of intestine parasites; because of that we hereby refer to the subject very briefly.

Mbya ethnophysiology states that the *tacho* (parasites) normally live in the human digestive tract and they are considered to be a component of the normal physiological process of digestion. Functional criteria differentiate natural and pathological forms in the presence of parasites in the human body

“The tacho do not come from outside, they have been there since the moment of birth.”
(CiR, Yvy Pyta, 2001)

“ You have to have it, no matter what. You have to die with it...they die together...there you are finished because you do not have any more liquid or anything... Our mother parasite...that one is born with us. Yes, she is born. She does not come out of the body either she is with us because we have raised her from an early age, since we were babies. That one already comes with a parasite: ñande racho, that is how our parasite is called- the mother, ñande racho chy. If you do not have a parasite, if you eat a lot...the parasite is the one who chews. It borrows this one is inside, it is like the other’s mother, it is produced before...it is there...it swallow the food inside...if you eat a manioc...then...this one borrows “. (MaG, Yvy Pyta, 2000)

Mbya say that children under one year old should be breast-fed almost exclusively, although some different kind of food can be gradually incorporated after 6 months. “*Okambu rive tery*” is the expression that applies to the baby who is only fed by its mother’s milk (*kamby*). The expression “*Ikaru che memby i*”, on the other hand, refers to the fact that the child “is already eating something” (solid). Likewise, from this moment onwards the child can be given milk from a bottle, which can be bought in shops or through assistance plans by official organizations. In that respect, *kamby ryrü* (milk stomach) designates the digestive organ of a child during lactation and is different from that of the individuals who can already receive food, which is called *gekue guachu kue*. An illness which is often referred to as being suffered by breast-fed children, is the one called *Kamby ryrü jere*: “*the biggest danger for the little ones, two or three- year- olds*” (CR, Yvy Pyta, 2001). *Kamby ryrü jere* is translated as “rotating stomach” or “the stomach turns over”. According to our informants, this illness is produced when children are hit strongly or when they fall on the floor. The probability for a child to be affected by this ailment is one of the main reasons not to leave babies in the care of very little children: “*that’s why you can’t leave little children to look after babies until they are at least 7 or 8, because they may drop them and they may catch kamby ryrü jere (...)*”. (R.C. Ka’aguy Poty, 2003). The diagnosis is made by observing the child’s legs’ length, that is, if one leg is

shorter than the other, that means the stomach has rotated to that side. Symptoms also include vomiting (*ombojevy*) and diarrhea (*gerachy*). The treatment differs according to the different experts: some use medicinal plants and others cure with tobacco smoke (*pety chimbo*), besides giving a massage to the legs till they go back to their normal length.

Definitive weaning *-mitã ikāchungue* (*he who has given up breast feeding*)- occurs around the year and a half, and in a few cases after the age of two. One of the reasons for interrupting breast-feeding is usually the mother's new pregnancy, though some women state a mother can go on breast feeding a child until she is in her six month of pregnancy.

According to the *Karai Opyguã* (shamans, the group's religious leaders) breast-fed children usually get ill because they have eaten some food which is inappropriate for their age. On the opposite, "*those who can already walk can already eat anything*". Mixing sweet and salty food, hot and cold, make the children get "tummy pain" (*tyerasy*) and diarrhea, as well as eating too much sugar "*some children like the 'cocido'* (a mixture of water and cinder-burnt sugar), *they take a lot and that harm their liver, hasy py'a kue*" (CG, Yvy Pyta, 2003).

Because some feed them when they are five, six months old, and the children are ill very soon, it may be that they have parasites. "... *At the age of six months they cannot be fed yet, say old people...A year later they can be given something else (but at first) they are given milk, nothing else, kamby. Beef can give them tacho...both beef and pork...*".(AD, Ka'aguy Poty, 2000)

Therefore, pregnant women are forbidden to eat some mammals' meat *-coati* (*Nasua nasua*), pork, cow, *armadillo or tatu* (*Dasybus novemcinctus*), *tateto* (*Pecari tajacu*), wild boar and so are both parents when the child is still young (before the child is given a name, or "baptism") as well as the children during that period (0-1 year approximately). Also, the simple exposure of a child who has not been baptized to the smell coming from meat cooking)of wild animals, "activates" the *tacho*, thus starting the illness.

"(...) *The flesh of the wild animals is also dangerous: coati, tateto, armadillo, wild, boar...All of them are attracted by the smell of the flesh ... These are inside people, they come from birth, all children, since they are young, have three kinds of tacho. Afterwards, (one of my*

children) had problems. His belly got swollen, and he still has a swollen belly. I do not know (why his belly is swollen)...Juan's grandmother said he had bugs in his belly because when (the child) fell the tachó got scared. The tacho were there, he already had them, and when he fell down the little bug got scared...that is why she said that his belly was always swollen" (FB, Ka'aguy Poty, 1999)

"When the child smells meat, the tacho smells it too, and it doesn't like the smell. Nothing happens to adults, so they can eat meat and smell meat because nothing happens to the tacho..." (CD, Ka'aguy Poty, 1999)

Usually, the symptoms are explained in reference to the behavior of parasites in the body. The parasites move, bite, are caught in the gut, smell, shout, express their like or dislike for foods, fight among themselves, and fall.

In children over one year of age, it is associated to the fact that they stop being fed only by their mothers' milk, they start trying other kinds of food and they drink water from the stream or the well, which may be "dirty" or "have bugs" (parasites).

One of the most frequent pathological forms of parasite occurrence involves diarrhea. Nevertheless, diarrhea may have other origins and, therefore, the Mbya differentiate at least two kinds: In the first place, the green one, (*okaa ovy*) which comes from mixing food or due to parasites, is considered a minor illness (*mba'achy katu*). In the second place, bleeding diarrhea (*okaa ruguy*) is believed to be the symptom of a serious illness (*mba'achy vai kue* or *mba'achy ete ma*). These names are also used to express, in the first case, initial stages of an illness or, in the second case, the more serious instances of an illness, when the individual "is already too ill"

Mild child illnesses are those that, like "tacho" "are easily solved" through the administration of specific medicinal plants to counteract the parasites' activity. Nevertheless, if parasite's presence is constant and recurrent, parents tend to worry because they believe this makes the children vulnerable to other illnesses, loss of weight and delay in their growth. In these cases, the child becomes "weak", "sin ánimo" (in low spirits) and "he doesn't want to grow".

To sum up, if children over one year who have been baptised can already eat meat, mix some foods and/or eat on occasions "heavy" food, the perception of vulnerability of those children

who have not undergone this ritual instance justifies their emphasis on protecting children who are being breast-fed from a great many risks¹.

3.1.2. Therapeutic strategies

Everyday child caring practices, including these illnesses diagnosis, prevention and treatment, are developed by adults and old people, some of whom are referred to as "experts". In their everyday performance, updating and giving a new significance to mythical-religious knowledge becomes evident, as well as the adaptation and inclusion of knowledge from different origins, which is the result of the frequent contact with other sectors of the local population (neighbouring urban populations, colonists, migrants, official medicine).

Among experts, *Opyguã* and *poropoãno va'e* stand out... The latter have a more frequent participation in the resolution of illnesses, as there is usually one in every extended family. Not only can these "experts" handle "yuyos" (medicinal plants) for the treatment of those illnesses considered "mild" but they also perform prayers and chants which accompany healing.

Everyday observation of their behavior enabled us to recognize the variability of their strategies when facing children's illnesses in those DUs formed by extended. In these families, it is mothers, fathers, grandparents and older siblings who attend to children's ailments. They all had a role, according to their capabilities in the different moments of the caring and recovery process of the child's health. In nuclear families, it was basically the mother who was responsible for caring the children, sometimes with the help of older daughters.

Coexistence in the same community of individuals belonging to different generations guarantees continuity of knowledge transmission in relation to different life guidelines by "the old ones". It is basically old women (*kuña karai*) who put into practice rules and taboos with regards to the family members' health. In terms of therapeutics, they are the receivers of the ancient knowledge that the younger ones learn through training and rutinary observation. For example, on the days after delivery they administer the couple some contraceptive vegetals to avoid a new pregnancy. This is based on the mother's need to devote to the exclusive care and

feeding of the newborn so as to guarantee its growth, as it would be very difficult for her to look after more than one baby at a time. Their recognition of the child's vulnerability during its first months of life, including growth disorders, justifies this practice. In relation to this, women know they should breast-feed the child until he/she can walk so as to avoid several illnesses like parasitosis, whose recurrence weakens him/her and delays, for example, walking, which is an essential acquisition to be recognized as a *Mbya*. Therefore, women should respect a certain interval between their children's births so as not to expose the child to an eating deficit.

Although many of the people interviewed assert that, in case of illness, they should first resort to the *Opyguã*, who will then decide the steps to take, in the case of gastrointestinal diseases we never observed consultation to the *Opyguã*, but to the *Poropoãno va'e*. In relation to this, the *Opyguã* is consulted only in certain cases, according to the patient's seriousness. Illnesses considered to be serious (*mba'achy vai kue*) are those implying irreversible damage or death. In most of the cases they are attributed to the action of supernatural malignant beings, mainly the spirits of the dead (*mbogua*) or abandonment of one of the souls that make up the person (*ñe'e vai*). In these cases it is only the *Opyguã*, by means of tobacco smoke, who can diagnose the cause, get the patient's souls back or neutralize the malignant being's action and, in this way, bring health back..

On the other hand, domestic environment appears to be the first instance to solve "mild" illnesses, and it is the child's mother who often decides which steps to follow as well as evaluates the different possible alternatives, alternating the use of resources from "natural medicine" and those from biomedicine. It is the women who "leave" the village in search for more effective solutions to solve their children's health problems.(Remorini, C. 2004)

Serious illnesses, as well as those referring bone- articular pain, are treated by local experts who perform censering with tobacco smoke, that is, "*they are meant to occupy the pipe*". On the other hand, illnesses affecting internal organs (stomach, liver) and gastrointestinal in particular, are cured by means of remedies (*poã*), which mainly consist of natural vegetal resources. Of the most frequently mentioned plants to treat these illnesses in children and adults (n= 19) we obtain vernacular name, ways of obtaining and preparing them and their

consumption and expected results. Likewise, samples were obtained for botanical determination in the laboratory².

Most of the plants are picked up in the forest and around the houses. The species most frequently mentioned are *ka'a ré* (*Chenopodium ambrosioides*) and *verbena* (*Verbena intermedia*)³. In general, plant resources are processed and administered by adults who live in the same domestic unit as the patient. Plants are typically prepared and consumed as infusions and concoctions; they are consumed warm, never cold. Most plants are used individually, though there are references to the combined use of *ka'a re* (*Chenopodium ambrosioides*), *ka'api kachí* (*Kyllinga* sp) and *guavira* (*Campomanesia xanthocarpa*).

Finally there are remedies that are adequate for adults but cannot be administered to children, as they are considered to be “very strong” like *verbena*, *ka'are* and *ysypo milombre*. If they were to be administered, the dose should be reduced. However, children are usually given “light” remedies, like *marcela* or *jatei ka'a*. (*Achyrocline* sp)

In all cases, therapy includes restrictions in food while “yuyos” are being consumed. Thus, “heavy” meals like meat, hot meals, stews and the “*reviro*” are excluded from their diet.

3.2. Some social and environmental factors associated with parasitosis

As we said before, the beginning of straight walking shows, among the Mbya, a status change in children. Walking, together with two other capabilities, namely, speaking and eating meat, is highly valued by the Mbya as indicating their children's growth and maturity. Before they can walk, breast-fed children spend most of their time being held in somebody's arms or sleeping in hammocks (*ky'a*) and they spend much less time in contact with the ground, either directly or on blankets on the floor of their house or yard. However, as they grow up, and as parents do not restrict the child's movement, the mother is obliged to devote her constant attention to the child's movements and therefore has to increase protection measures to avoid risks in the spaces where they circulate, that is, they must clean the yard more often and eliminate anything that could constitute an obstacle or imply danger for the child in that yard

(wire, glass, knives, rubbish or domestic animals' excrement. Anyhow, children often take or handle any object within their reach which calls their attention when they are moving. On occasions, this behaviour causes the appearance of illnesses, especially those related with geophagic habits. According to FV, *Opyguã* of Yvy Pyta, "dirt" is one of the main causes of illness in children. Because of this, parents are criticized or punished when they show no interest in their children's hygiene conditions. The skin's contact with the ground, for instance, may cause a rash, called "comezón"(itching). But this contact between the skin and the ground is inevitable, due to a series of environmental and cultural factors.

The results of the parasitology report (Navone et al. 1999) detected the presence of the following protozoa: *Blastocystis hominis*, *Entamoeba coli*, *Endolimax nana*, *Giardia lamblia*, *Iodamoeba butschlii* and *Chilomastix mesnili*. Among the helminths we observed *Uncinarias*, *Strongyloides stercoralis*, *Hymenolepis nana*, *Ascaris lumbricoides*, *Enterobius vermicularis* and *Trichuris trichiura*. The skin/ humid soil contact is the main vector of penetration for some types of parasites (*Necator americanus* and *Strongyloides stercoralis*) which were present in all the analyzed feces samples.

In the development of all domestic activities, we recognize behaviours that involve the risk of parasite infections. In general, all individuals are exposed to similar risks of infestation by contact of the skin with the soil or feces (Crivos et al. 2002). Though the parasites are present in all age groups, local population's concern is centered around infancy; the major parasite incidence occurs in children between 0 and 12 years of age. Observing slow growth in children is typically the trigger of concern. Thus, the habit of both children and adults to walk barefoot near their houses as well as on paths to the *chacras* (gardens) and the *monte* is one of the most frequently observed risk behaviour of both sexes. Likewise, other activities that bring individuals into contact with the soil are risk factors: the greatest exposure occurs when children play around the house in frequent contact with the soil, those who eat dirt being at major risk.

However, in none of our interviews did informants consider contact with the soil as a risk factor of infestation. For the Mbya, parasites- though they are perceived as individual organisms- coexist with human beings from birth to death. They are located in the digestive

tract and they play an important role in the transformation of food. Although some informants suggest that parasites can be consumed with water (an external origin), they point out their pre-existence inside the body. In this sense, there is no strict correspondence between scientific and local explanations for the origin of parasitosis.

On the other hand, inappropriate hygiene habits as far as handling and consuming food - like the food that gets in contact with the soil- have not been mentioned either, as potential incoming way for parasites into the human organism.

Only those individuals who work as sanitary agents tell us about the appearance of parasites outside the human organism and they are associated to “contamination” of the soil and water, which would be an element fostering the parasites’ development and permanence. In relation to this, there would be different incoming mechanisms into the human organism: the consumption of “polluted” water, badly washed food, or food that has been in contact with the soil, and the contact with animals or their feces. These “external” parasites will always be pathogenic, unlike those which are raised (“*se crian*”) from birth (Remorini, C and Sy, A. 2002)

“(...) because I say, when the patio is clean, this is the nicest because the kids are not in danger of tripping over anything, and washing the utensils, that’s basic too because I learnt, though most of aborigines ...in that sense I always argue with some people ... and only because of that some already call me ‘delicate’ but being aborigin doesn’t mean we should go about being dirty” (CD, Ka’aguy Poty 2003)

From the local perspective, the environment also turns out to be the instrument for the appearance of pathogenic forms by activating the internal parasites or facilitating the incorporation of external ones into the body. In this way, the conditions of the environment, either natural or cultural (i.e., unexpected events, breaking proscriptions or feeding taboos) constitute the central etiological factors in the vernacular theory. According to this perspective, the non-pathogenic state would be associated with a supposedly balanced and harmonic state among the Mbya-Guaraní communities, expressed in the observance of ancestral cultural patterns.

The fact that children get ill by parasitosis is part of everyday life, as much as treatments to recover child's health. That is, they are considered frequent illnesses and can be treated by means of local therapeutic resources and, less frequently, those resources coming from official medicine (laboratory- made antiparasitic medicine).

Finally, food practices associated with prevention and therapeutics of parasitosis become relevant to characterize the relationships established by the Mbya between feeding and health..

As we pointed out at the beginning of this paper, there are particular moments in the vital cycle which are perceived as critical, since they place the individual in a vulnerable state. In order to avoid having certain illnesses, the Mbya prescribe a set of foods (generally those having a vegetal origin) and forbid others (basically those derived from animals). In relation to this, the prohibition to eat meat is extended to all those moments in their life which imply a passage from one status to another (initiation in puberty, first menstruation, post-delivery and baptism). Likewise, when an individual is ill –be it a child or an adult- (s)he cannot eat meat either, since it is considered to be “heavy” food. Respect for food restrictions is crucial for a successful treatment. These criteria are not exclusive of this society. On the contrary, “Probably all peoples classify food in relation to health and illness and to stages in the life cycle. Pre- and post-natal food restrictions have been noted by anthropologists in the societies they have studied, and diet limitations are the rule in times of illness” (Foster, G y B. Anderson, 1978: 267)

As an example of this, we are hereby quoting from my observations in a household:

*“ (...)Thursday 18/10/01: Or. B. (2 years old)has had a diarrhea for three days. His father (MB) made him some tea with the cortex of ñandyta. MB tells me that after taking the remedy “it was over ”but he was not completely cured. One week later (Thursday 25/10/01) MB tells me that when Orlando had the **bleeding diarrhea** he took ñandyta skin for 4 days, but sometimes two days is enough. He says that, for the treatment to be fast and effective, “you have to take care”. I ask him how you have to take care. He answers you don't have to take water or milk, sugar or anything too salty. There don't seem to be many other restrictions according to him. He*

explains that the reason why he had to continue the treatment for two further days was that “he didn’t take care as he should have”, that is, the child’s parents didn’t watch him so that he didn’t eat what he shouldn’t. “When blood stops coming, then he is cured”, he explains (...).”

In this one, like in many of the so called “traditional societies”, breast-feeding is common practice and there is a generalised perception in relation to its advantages for children’s health. “For the first four or six months after birth, breastfeeding is normally sufficient to provide for infant nutrition. After six months, it remains an important protein supplement if the diet contains other foods. One of the most significant changes in human nutrition was a shift from breast to bottle in infant feeding (...)” (McElroy, et al, 2004: 207). However, breast milk turns out to be appropriate as long as the mother’s nutritional state is right and there are no other negative environmental factors affecting the child’s health.

In relation to that, “weaning is a critical time for child health because inadequate nutrition, infection, and psychological stress interact synergistically, thus magnifying the effects of each (...) Infections increase the need for certain nutrients, such as protein. At the same time, gastrointestinal infections reduce the body’s capacity to absorb these nutrients, and appetite may be reduced. (...) the child is less resistant to infections because antibody production is impaired. Gastroenteritis is the most important infection interacting with malnutrition in young children (...) (McElroy, et al, 2004: 209). Chronic diarrhea partly accounts for growth deficit in most developing countries...” (Daltabuit Godas, 1992: 161-162). Exposure to inappropriate hygiene conditions during feeding time has often been recorded in the households under observation.

In agreement with native theories about parasites’ origin, local prevention strategies are focused on restricting meta consumption. Bertoni (1927) claims that, among guarani groups, the use of meta was always very limited, as it is considered to be “impure”, dangerous or harmful food in many circumstances (Remorini, C y a. Sy, 2002). These considerations apply both for wild animals’ (mammals) and domestic ones.

Validity of these criteria, together with the smaller availability of hunting animals in the “monte” (woodland) mainly due to ecological transformations in the last decades, brings about a

smaller consumption of protein than on previous times. In this respect, we have noted, in the last years, an increase in processed food of an industrial origin (rice, pasta, peas, black beans, white beans, oil, sugar, sodas, chicken meat or cow meat) which, together with fruit and vegetables (sweet potato, cassava, corn, watermelon, melon, being the most frequent) are the main food source. In this sense, carbohydrate consumption is higher than that of protein.

Except for some reference to corn and some animals' meat (reptiles and birds) in relation to its positive effects on the development of certain capacities during growth (Remorini and Sy, 2003) or the acquisition of "purity and spiritual perfection" (*aguyje*) in the case of those individuals who hope to achieve the *Karai* status, we did not find in our informants' discourse any explicit association between food and growth and health. That is, we find a predominance of what Foster and Anderson (1978) call a *negative* relationship between food and health. "In several "traditional" societies, like aborigines and peasants, people often see only the 'negative relationship between food and illness' and, in general, do not 'recognize the positive relationship between food and health" (Foster, G y B. Anderson, 1978: 272). Therefore, "...good health allows a person to eat a wide variety of foods, but poor health restricts a person's choice" and, consequently, "protein-rich foods, especially meat and milk, should be eliminated from the diets of children with intestinal worms because they are believed to 'cause the worm to develop. Although food is not considered a direct cause of illness, certain foods may aggravate conditions (Foster, G y B. Anderson, 1978: 273)

The combination of constant parasite infestation, restrictions on foods whose nutritional contribution may be crucial in certain moments of growth and hygiene guidelines that reduce the quality of the food, may have lethal effects on children's health.

4. CONCLUSIONS

Within human sciences, anthropology has been the discipline that has best contributed to the knowledge of the different beliefs, expectancies and experiences different societies have in relation to health-illness processes, thus contributing with a holistic and comparative overview.

Among anthropological disciplines, it is **ethnography**, as a descriptive instance of certain human groups' *way of life* (Crivos, et al), which provides the cases refereeing to which it is possible to assess the variability and convergence of the bio- cultural factors taking part in such processes. Following McElroy et al (2004: 128) "specific cultures have become adapted to specific environments. In each of these environments, human populations entered into characteristic relationships with populations of other organisms. Among these are organisms causing infectious and parasitic diseases (...) as settlements increased in size and more people were in face-to-face contact , epidemic acute infections became more significant (...)"

Therefore, incidence and prevalence of gastrointestinal illnesses is strongly influenced by economical, nutritional, sanitary and cultural factors. In this way, children's health is also influenced by basal beliefs for child's care practices, along with their environmental living conditions. (Sharif, 1987)

During the last decades, it has been recognized that, in order to obtain satisfactory results on health programs, it is vital to know and understand local perception on health/illness situations. Within this context, ethnography provides significant information on illness diagnosis and treatment comprehension, through conceptions and experiences and it will provide useful perspectives on medical and sanitary problems, thus improving life quality. (Crivos M and Martínez, M.R, 1995)

The results from ethnographic investigation and their integration with the data from parasitology and etnobotany allowed identification and characterization of different explanations of the way parasitosis affect the population's health and their treatment and prevention strategies, which brought about revaluation of the local knowledge about the human body, health-illness processes and the relationships between the human organism and other organisms in the wild environment. At the same time, it enabled us to recognize the therapeutic validity and efficiency of local medicine resources.

Our work gave rise to the population's interest in talking with scientists (parasitologists) as well as with the sanitary staff in the area (doctors, nurses, sanitary agents) in order to agree on intervention strategies centered on diminishing parasitosis impact on health. As a result, four

meetings and workshops have taken place since 1999 in both communities, with the participation of all sectors involved in parasitological problems. In this way, aboriginal people were able to channel their demands to access to medicine for their gastrointestinal diseases, whose effectiveness is sometimes considered to be higher than that of “yuyos” but, at the same time, agree on common intervention strategies to achieve integral improvement of sanitary conditions. In this sense, the meetings turned into spaces of dialogue and mutual learning. (Crivos et al, 2002 a and b)

Although in some circumstances the validity of traditional guidelines may favour persistence of a certain endemic illness or become resistant to implementing certain sanitary measures, in other circumstances they may be compatible with or complementary to official medicine. Intercultural dialogue encouraged by ethnographic research becomes essential not only to the design or implementation of sanitary policies, but also to widen knowledge acquisition and the formation of human resources in multi-ethnic contexts. In this way, it contributes to overcoming obstacles deriving from lack of understanding and integration between the population and the health sector, as well as optimizing exchange, learning and mutual collaboration among different sectors. (Remorini, C and Sy. A. 2004)

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Figures:

Figure 1: Map

Notes:

¹ By baptism we mean the ceremony of giving the child a sacred name (Ñemongarai). It is made once the child acquires two skills: talking and walking straight. For the Mbya, the soul is identified by the name, and the ability to speak constitutes the subject's vital principle and it will accompany him to his/her death. The importance of this ceremony in relation with the vital cycle is shown in the fact that only after it is the child recognized as a full member of the *teko'a*.

Considering that name / spirit / person are inseparable, the *Mbya* explain that by imposing the wrong name one may cause serious illnesses, or even death. The main signal of this is that the child has no signs of “normal” growth and development, according to our informants: “(s)he doesn’t want to grow” (*ndokakuaa*), (s)he is undernourished (*ipiru i*), or “(s)he gets sad” and “doesn’t find him/herself” or “*no se halla*” (*ndojaveima*). In these cases, it is the *Karai Opyguã*’s responsibility to find out which the correct name is, that is, baptize the child again. In this sense, giving the name is equal to giving back the child’s health. When the child is thought to be getting ill, changing its name implies taking protection measures. (Cadogan, 1949; Clastres, 1993; Remorini, 2004)

² These results have already been presented in previous papers. See, for example, Crivos et al, 2002 and Pochettino et al, 2003.

³ They are also referred to by Berlin et al. (1996) as used against parasites by the highland Maya of Chiapas in Mexico.