STRONG COOPERATIVENESS AND FAMILY REPRODUCTIVE ECOLOGY: AN OVERVIEW OF THE COMMUNITARIAN LIFE AMONG TOTONACAS FROM MEXICO

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ABSTRACT

Young Kgoyomes (Indigenous Totonacas from the rural highlands of Huehuetla district in México) of both sexes were asked to state their principal moral values. The following 4 concepts in the following order represent 84% of their choices: (a) life, (b) close relatives, (c) money, and (d) health. The remaining 16% were spread across 18 different concepts. At the level of intersexual dyads, the characteristics which both sexes found most attractive in the other were: a) being a hard worker, (b) faithfulness, (c) prettiness / handsomeness, and (d) being good-hearted. These represented 58.7 % of men's preferences and 55.8 % of women's in a prospective partner, with the remaining percentages split across 18 different characteristics. Such an affinity between the sexes has probably facilitated the "assortative" selection of a partner, producing marriages which are highly monogamous and harmonised for hard work. Another example of their 'pro-social sentiment' is the precocious age at which they begin starting to 'help at the nest', i.e. from 5 years old onwards, and by the age of 10, 58.4 % are already engaged in a variety of tasks for helping the family.

These are some examples of the altruistic behaviours which have been practised over a very long time by this traditional community, and which constitute a rather complex system of interactions in which various and constant sources of help facilitate their continued survival in a particularly difficult socio-ecological environment. In order to study this phenomenon, the subject was approached from the viewpoint of three social strata: the individual (which includes the sub-stratum of intersexual dyads); the family (which includes the nuclear and the extended family) and the communitarian. Based on the results obtained, the author finds that the individual and dyadic attitudes and preferences are useful components for predicting the high incidence of kin selection behaviours. At the same time, the family group which is the unit of production of their subsistence, and is harmonised on individual premises, generates multiple acts of "direct and indirect reciprocity" towards wider kin, neighbours and the community in general. Helping behaviours, namely *apoyo* (help to the needy), *servicio* (service to the community) and *mano-vuelta* (mutual labour) are maintained, as well as a *sistema de cargo* or cargo system as a mechanism for the redistribution of resources and favours; all these mechanisms collectively known as *el costumbre*, i.e. a set of traditions and prescriptive 'rules of thumb'.

Apart from the descriptions, based on the interviews with more than 800 subjects, and other data gathered in the field by participant observation, this study explains the causes of the extremely widespread and deep-rooted cooperative spirit, putting forward evidence in each of the levels of theoretical methodology proposed by Tinbergen, commonly used nowadays on the field of evolutionary psychology. The functional causes are clearly demonstrated according to the nepotistic motives found; the mechanistic and ontogenetic causes add support to the explanation, but there is a special pinpointing of the phylogenetic level running throughout the collective history of the ethnic group, particularly in the examination of their material conditions of subsistence in which communal property ownership, collective labour organisation, equality in economic incomes and shared production methods explain the massive convergence of interests and investment of resources; together all this forms the material basis which supports their social structure and network of cooperative exchanges.

Given the exploratory character of various aspects which this study brings together, the comparative view of behaviours by each sex was an important

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complement: observing the intersexual symmetry in behaviour was, in many cases, the only possible reference point for providing context to the behaviour patterns. Therefore this study must be considered as one of a number of interdisciplinary studies which are nowadays gaining ground in the evolutionary field, and which are useful for addressing the synergy of combined causes in a process as complex as communitarian cooperation among the Kgoyomes.

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CHAPTER I INTRODUCTION

Cooperation is complicated, as the title of Axelrod's book (The Complexity of Cooperation, 1997) reminds us. The reasons why individuals or societies compete are obvious: for example, to gain access to resources, to partners, to achieve wealth or power - these motivations can be clearly identified. However, the reasons for altruistic behaviour have remained more obscured and less well defined or understood (Reeve, 1998); after centuries of scientific advance, it was only 40 years or so ago that the ultimate reasons started to be plainly discussed through the works of Hamilton (1963), Williams (1966), Trivers (1971), Dawkins (1976), Alexander (1979) and other researchers who have shown that cooperation in the long term is an advantageous behaviour, which, based on inclusive fitness and reciprocity, is able to evolve. Moving on from broad general descriptions, evolutionary behaviour researchers in recent years are now working through more sophisticated explanations (Hammerstein 2003).

We know that the basic selfishness which pushes individuals to compete for specific goals starts life in the genetic substratum (Dawkins 1976; Alexander 1979); however we also know that each gene has a better chance of promoting its own selfish welfare by cooperating with other genes with which it shares the ruled body (Dawkins 2004); thus, even in the biological principles of such a ruthless agent, there is a precondition to share and cooperate in order to maximise profits; "the fittest selfish gene is the one smart enough to manage to cooperate" would be a complement of Dawkins' 'selfish gene' metaphor.

By all different means possible organisms cooperate on a huge scale, even to include members of different species (Bronstein 2003). Evolutionary scholars are located in large numbers either side of the competition / cooperation debate, which

credits either selfishness or pro-sociality as the defining characteristic of the actions of living creatures. However, a scrutiny of the literature in this area shows that the majority argue for a non-exclusive mix of both universals, with differing emphases on each, as an answer to explain human nature.

From basic exchanges between cells, blood vessels and tissues, to pragmatic negotiations between statesmen, each party is fulfilling a relationship of giving and receiving; these are the pre-conditions of existence, or simply, of a sustainable interaction. In all their forms and scopes, even passive ones (to allow oneself to receive, to allow oneself to be taken); everyone has the vital need to interact in such a process. Exchanges in search of benefits are a general requirement for all kingdoms and taxons as a starting point for the cooperative phenomenon, from the molecular level to the societal (Hammerstein 2003). To stress, as was mentioned in the first paragraph, unravelling the complexity of cooperation might be as challenging as it is indispensable.

Trivers (1985) defines as altruistic those behaviours "in which an actor confers a benefit on some other individual at a cost to the actor"; such a loss of resources cut their own offspring off and other non-offspring relatives and, being contrary to natural selection, such actions will not evolve unless at least one of the following conditions are accomplished: either the donor and the recipient are related or the altruistic act may lead to some return beneficial enough to compensate the altruist ; i.e. when the roles of donor and recipient are complementarily reversed at some moment in future time, the most important product of the interaction would have been established: the cooperation evolves as a relationship pattern (Trivers 1971). Should it become successfully continued, it would be termed an evolutionary stable strategy between the actors (Maynard Smith 1979).

Altruistic behaviour, altruism, cooperative behaviour, cooperation and helping or aiding behaviour are usually interchangeable terms in the evolutionary literature to which resembled behaviours are properly referred. This work will proceed in the same way, according to a broad definition of cooperation, in which the donor as much the recipient or only the recipient can benefit (Schaik & Kappeler 2006) and then, the underlying causes will be differentiated in three different classes: kin selection, reciprocal altruism and mutualism.

The first class corresponds to those actions which act as an inclusive fitness mechanism. These are conducive to selection in favour of the kin of the particular donor and are expressed as a benefit to a kin member which is greater than the cost to the donor and Maynard Smith (1998 [2002]) expresses Hamilton's rule in the following way: rb > c; in other words, an altruist action is evolutionary if the benefit to the relative is bigger than the cost to the donor, rated by the kinship degree. The second class corresponds to those altruistic acts in benefit of unrelated individuals, including 'tit for tat' exchanges (Trivers 1971; Axelrod and Hamilton 1981; Wright 1994, 2000) and indirect reciprocity (Alexander 1987); here the terms of the returning compensation are not specified. The third class is cooperation by mutual aid, a term restricted to those coordinated actions among unrelated individuals which prove helpful to all parties involved because of its direct contingency or predictable consequences. Being in accord with the rather subtle boundaries between reciprocity and mutualism (van Schaik and Kappeler 2006; Rothstein and Pierotti 1988), an additional criterion which better clarifies when, in humans, an exchange is mutual, is the explicit agreement between parties to close the exchange immediately after the double event (first A gives and B receives, afterwards B gives and A receives) in the way of a zero-sum transaction or, as

is it is has been re-named, a non-zero-sum (Wright 2000).

The term 'cooperation' also has been linked to pseudo-reciprocity or by-product mutualism by some authors (see Reeve 1999) and is in some ways related to the byproduct benefits or selfish cooperation concept, as Sachs et al (2004) call them. Sachs and his fellows also maintain that these three are just the main classes. Nature and societies often present subdivisions and frequently involve simultaneously more than one class (Sachs et al 2004). In this study, for example, some such instances are reported.

As far as the general meaning of the concept of 'cooperation' is concerned, the International Co-operative Alliance (a world-wide NGO) has accrued enough experience to ascertain what their social movement means by it. In the voice of their former director, "the term, as it is commonly employed, denotes 'working together' ... according to certain fundamental principles..." (Watkins 1986, p.1). Included among those principles is voluntary participation, egalitarian hierarchy, sharing benefits, common service and provision for the costs resulting from the actions taken by the allied participants whose ultimate goal is to maximise social welfare.

In a wide sense, the flow of resources, labour products and services constitutes reciprocity, be there or not a contingent re-pay. The partners take according to need and give back without counting rules of time or quantity (Harris 1993). Reciprocity has in these terms been the predominant form of exchange in most of human historic time among bands and village societies, those of hunter-gatherers and peasants included. The more basic and simple reciprocity is, the more predictably unanimous it emerges among relatives and friends as a panhuman pattern of behaviour, as plenty of social anthropologists have observed all over the world.

But, at the same time, Harris added (1993), no culture is able to sustain assets and services produced and distributed just on the basis of altruistic sentiments. Hence, reciprocal exchangers historically have instrumented obligations both within kin group and extra-kinship as a means of keeping gifts and debts on a balanced level, while community pressure acts in favour of its performance.

As far as this study is concerned, different modalities of the three general classes are encompassed in the frame of a human population whereby cooperative patterns of behaviour are voluntarily entered into, people being fully aware of what the causes and consequences of their cooperative acts would be. Furthermore, in contrast to other societies where the most common altruistic behaviours fall into the first and third categories, in this study the indications are that amongst the Totonacas, the second modality occurs as frequently as the others so as to create a real sense of community among their members. A cooperative balance seems have been found as an internal dynamic. That is one of the conspicuous characteristics of this traditional peasant ethnic group, the subject of this work.

Moving on, cooperation promotes cordial relations, is a factor feeding and sustaining motivation and creating an environment of tolerance; on the other hand, it promotes egalitarian relationships, cohesion around the group's identity and serves practical functions including as a safety-valve in case of intra-group hostility. It gives greater internal cohesion to the group which helps it to better safeguard its territorial limits.

1.1 CONFLICT, THE OTHER SIDE OF THE COOPERATIVE COIN

As stated by some authors, cooperation and its opposite, conflict, are always intertwined (van der Dennen and Falger 1990), for the fundamental reason that organisms, humans included, will seek to optimise their direct and inclusive fitness in the face of competitors, conspecifics included, and can even take their behaviour to the point of aggression (Lopreato and Cripen 1999) in an attempt to safeguard resources for themselves and any allies. Especially when facing those who are unrelated or, worse, those from an antagonistic background, the contest can sometimes turn violent.

In addition, it is not infrequent for there to be ambivalence of attitudes towards members of one's own group with whom one has once interacted, and eventually at times for there to be rivalries. It is worth mentioning that part of the cohesive intra-group climate is indeed provided by the probable presence of outside predators and cheaters (Peres and Hopp 1990); and, on the other hand, acknowledged the presence of cooperation as a pattern coordinating allied parties in order to make more effective their competition and aggression tendencies towards other groups or individuals (de Waal & Harcourt 1992; and Harcourt & de Waal 1992). Furthermore, they go as far as asserting, as a paradox, the probability that cooperative tendencies are rather an "offshoot of competitive and aggressive tendencies" (De Waal and Harcourt 1992, preface, p. v).

Moreover, according to the historic catalogue gathered by van der Dennen and Falger (1990 p. 6-7) and other scholars, some of the characteristics that can be attributed to conflict are a negation of cooperative behaviours at times, and at other times, a factor which actually helps to escalate cooperation. By way of contrast a number of hypotheses around similar and dissimilar traits in conflictive and cooperative behaviours are put forward here:

a) Conflict serves to establish and maintain the identity and boundaries of societies and groups; *cooperation also may do this*.

b) Enmities and reciprocal antagonisms conserve social divisions and stratification; cooperation working on different levels promotes either egalitarian relationships throughout a whole group or intra-subgroup coherence.

c) Conflict is not always dysfunctional for the individuals' relationship; except for a very unusual case, cooperation is even less likely to be so.

d) Social systems may act as a safety valve to drain off hostile and aggressive sentiments arising from a specific conflict; cooperation would be in this situation a necessary instrument to solve the conflict's deeper causes.

e) Groups engaged in constant extra-group conflict tend to be intolerant within; evolutionary literature provides examples where internal cooperation promotes intratolerance and also inter-group cooperation.

f) Hostile stereotypes, prejudice, threat perceptions and aggression are more likely to be the result rather than the causes of conflict (Bernard 1951; DeVree 1982); cooperation may more frequently be cause and effect of a cordial situation.

g) Conflict with another group channels the members' energy and gathers the group's cohesion in search of an advantage (Erasmus 1965); cooperation is an equally effective mechanism for achieving the same result and, moreover, in itself it generates further cooperation.

1.2 COOPERATION IN PEASANT SOCIETIES

In a well-known part of his book, Mauss asserted that primitive peoples had gone deeper than modern men at institutionalising the gift act (Mauss 1955); thus, as a counterintuitive concept, any altruist bond is neither by chance nor gratuity for them; to any given gift corresponds a debt. Interpreting some Tahitians and Inuits, Sahlins claims generosity among kin and mutual aides is a "manifest imposition of debt" (Sahlins 1974 p. 133). Starting from that point, a very complex psychology based on actual or potential exchanges is developed before, during and after the gift deed.

Hence, a cooperative relationship pre-establishes that nothing be given nor received for free (see Collins 1994; and Cohen 1999). Rather, at different moments in an individual's lifetime, the balance between giving-receiving-reciprocating will vary. This has consequences for the place a person comes to occupy in the group hierarchy, and is extended to other ambits of social life; thus, a person may be classified as a "*tonto*" or a "*correcto*" (respectively as a fool, unable to repay in a reciprocal exchange; or as "proper", able and willing to do what they should,) in Redfield's study in a Mexican peasant village (Redfield 1930).

Layton (2000) found an analogical classification in a French peasant village where "gentile", "fier" and "fou" (gracious, proud and crazy, respectively) were the standard types attributed to neighbours according to their record in the village's reciprocity lifehistory. Therefore, those tontos and fou individuals would become subordinated to the correctos and gentiles in their respective villages, and were at the bottom of the social hierarchy; a particular case in Layton's work, is that of the fier, competent enough as to engage in reciprocity events but wilfully reluctant to do it as a way to affirm a sense of superiority.

In the light of the above, the following might be considered: in place of individual possessions or acts of warfare as the means to achieve or consolidate an advantageous reputation, cooperative events, (which furthermore accomplish an economic mission), are a plausible currency with which people consolidate a status in the social structure of peaceful, egalitarian cultures.

Mauss is right about the many meanings and implications that a gift may encompass in traditional cultures. Cooperation is of such a transcendental importance that a community whose economy and culture are established on the basis of concrete reciprocal actions cannot afford either to underestimate or to under-exploit its potential. To demystify the scope and reach of cooperation is also crucial. Every element of cooperative behaviour must be precisely worked out. Mauss takes this viewpoint to extremes in my opinion when, in his case study, he views -every gift as part of a mental process and as a device to engage in a game of social competition.

If "the game of giving" had become universal, then it would require a reverse device spreading everywhere in order to counteract unwanted obligations. Native populations, as a general rule, have opted to imprint transparency on the content of their reciprocal transactions; they have gone as far as to ritualising their usual reciprocation in order to obstruct undesirable consequences.

Particularly among the Kgoyomes of Mexico, an unbridled interplay is avoided by establishing a secure procedure about the scope of commitment which has been entered into, and by making an explicit cultural clause between the parties. So, after a *mano-vuelta* event (help given on an understanding of mutual labour) a punctual reciprocation shall be expected in favour of the donor; but not so, in the case of a *servicio* (service to

the community) or *apoyo* event (literally *help*), which are given on a non-refundable basis, something which is very common among them.

Wolf (1966) described abundant instances of cooperative behaviour in Indian peasant societies in villages in Mexico and Peru who were permanently engaged in sponsoring the ceremonial fund for religious festivities and for social events. For example, expenditure on weddings was supported by relatives and friends by large contributions equivalent to a year of a person's local wages. The gifts, once collectively gathered, are shared by the entire community as a token of solidarity and reason for collective pride, for instance, when compared to festivities in a neighbouring village. Wolf (1966) stated that one of the factors behind these contributions is that they are a mechanism for levelling wealth distinctions that otherwise intensify divisions amongst a community's membership

Wolf argued that, in contrast to what most of the continental European peasantry had done in the last two centuries, i.e. "to let the selective pressures fall where they may, to maximise the success of the successful, and to eliminate those who cannot make the grade" (Wolf 1966; p. 80), that the peasantry in other parts of the world, especially Indians, operated an alternative strategy when facing neo-technical farming methods and the aggressive penetration of the market. They showed a disposition to enter into coalitions which counteract these selective pressures, not so much as Christian charity, but as a form of exchangeable insurance, on the basis of their common interests.

Harris and fellow promoters of a historical materialism view in anthropology (whose typology of current subcultures defines the Amerindian groups as modern (Wagley and Harris 1965))stated that all cultures in all epochs around the world have fostered basic forms of reciprocal exchange, particularly three main kinds, each escalating in scope and

complexity: reciprocity, redistribution and market exchange (Harris 1993). The more complex they are, the more they exclude the popular base.

In Harris' view, labour and its fruits, in terms of reciprocity, are redistributed among unrelated individuals and groups seeking exchange in order to complement their staples based on a rough computation of both the given and the received; no less important, in addition, is the benefit in terms of reputation gained by those who show themselves to be the best redistributors. The massive feasts, including religious ones, given by egalitarian peasant peoples, are a frequent example in Latin America, but also in the whole world.

The socio-economic configuration of peasant populations has always been controversial in that a neat consensus about a historical definition does not exist. Some authors designate it in a wide sense as referring to a social class (see Lucas 1985) while many others dispute this point; some authors include rich landowners as well as waged labourers in its conceptualisation and others exclude both from it. Blends of general criteria are necessarily encompassed by the term, combining the very basic traits of any group of peasants with some of the local characteristics of the specific population in question.

Thus, peasants considered from the viewpoint of being traditional cultures with a particular way of life are classified into nine subtypes wherein Indians occupy two different denominations; the tribal and the modern. The other seven correspond to non-Indians or *ladinos (mestizos* and non-Indians in general living among or near them), according to their technical position in the farming process and the location of the land being laboured (Wagley and Harris 1965). Wolf (2001) defines peasantry as rural cultivators, not just as a common denomination. Nevertheless he then argues that the peasantry is not necessarily a national class in every country, but the combination of

varied local and regional types of peasant life.

In terms of the ecological niche which they occupy and the technical jobs peasants do, they are mainly farmers or horticulturalists; but there are also other marginal groups, such as hunter-gatherers, cattle-breeders, fishermen, miners, potters or craftsmen, traders and simple day-labourers (Wolf 2001; Wagley 1964). However, other subclasses may be inserted according to the particular interest of the researcher, for instance: peasants may be either lowlanders or highlanders (Viazzo 1989; Wolf, 2001) or, in a different respect, cash-crop or subsistence farmers.

In addition, peasant societies may be characterised by their degree of cultural development and technological development in particular, and placed along a continuum of linear historical progress, from Morgan's first propositions in the 19th century (1986) up to Goldschmidt's and Childe's and their subsequent revisions (see Lensky 1970). From the nomadic hunting and food-gathering stage through to the industrial urban society, it has been thought that progress in technological development improves a society's capability for accessing resources, including food-production. Peasant societies may therefore be located in a wide range of advancement from the simplest horticultural stage to a superior agrarian society (Lensky 1970). According to this conceptual framework, Amerindians are situated in the pre-industrial simple agrarian society stage. The peasantry has always been the majority of people in the world (Harris 1993) and still is even right up to the present day. Therefore it is of such huge demographic dimensions that it can include uneven and combined expressions of human history and, it seems, their diversity will continue beyond the post-modern stage. Many authors admit that any particular society is rather a kind of hybrid, in which some segments of society employs basic technologies and others employ other types of technologies.

(Novack 1964 and 1969; Wolf 2001; Lensky 1970).

Last but not least, in this respect, and by far the most important point of consensus amongst scholars, is the structural characteristic defining the essence of the peasantry. First, it is the kind of relationship peasants hold with the land (the means of production); ownership or deprivation. Next, derived from this, is the kind of relationship held with other people, including the division of labour and the principles for exchange (Marx 1977 [1859]; Engels 1975 [1877]; Lucas 1985; Warman 1994 and 2003; Layton 1997; Wagley 1964), i.e. egalitarianism or subordination. Depending on this, ownership of the fruits of production is either possible or not; in this latter case they just labour for a wage (Marx 1971 [2001]; and 2001; Layton 1997; Wolf 1966; Seligson 1975). With these conditions determining the socio-economic structure, together with the cultural and environmental milieus, they constitute the essential factors through which the actions of successive generations construct the socio-ecological niche, which the next chapter shall deal with among other topics.

Many Amerindian groups, in particular the Totonaca Highlanders, have since ancestral times been the kind of communitarian proprietors of land (or portions of it, at least) from whence many of their egalitarian customs stem.

1.2.1 COOPERATION AMONG AMERINDIANS

Amerindians, particularly the Mexicans, although in a process of diversification of their way of life, are all virtually peasants (Bonfil Batalla 1978; Warman 1992; Larson 1998; Cancian 1992) and, without a doubt, fervently communitarian¹ (Caso 1971; Harris

¹ The Declaration of Principles of the Organización Independiente Totonaca from Huehuetla states "we dare to propose to all the Mexican people and those Westernized societies to share our way of life: the

1998). Some historical studies of Western peasantry, like those of Marx and the Marxists, seem to suggest that a conjunction of both these traits, i.e. peasantry and communalism, involves a contradiction in terms, and so this point deserves careful unravelling and examination in the next section.

In one of the few studies dealing with this specific area in current times, Cohen (1999) claimed that for the Santañeros – Zapotec Indians of the valley of Oaxaca State, in Mexico– cooperation is more than the context where their lives flourish. Cooperation is not only the means, but also the goal; not only the general procedure to be followed, but also the form and substance. In the opinion of this author: "[cooperation] is the foundation upon which Santañero society is organised and through which it is produced, reproduced, and enacted. (...). For most Santañeros, cooperation is a strong organizing principle, an important resource, depended upon and cherished (...), in shared history and daily practice, a patterned behaviour that seems rooted in the very fabric of the Santañero society." (Cohen 1999, pp. 62-63).

Certainly, the 'cooperativeness / Indian community' binominal has only become consolidated as a key research subject in social studies in the last third of the twentieth century. Despite the fact that intra-communitarian reciprocity is clearly perceptible as a typical trait of the Amerindian peoples, early social scholars were not so keen to treat it as a special issue in their repertoires (Adams 1964; Wagley 1964; Gibson 1967; Larson 1998; Mosk 1965). It has not been until quite late in the twentieth century that researchers focussed their attention on it. Nevertheless, some sparse notes about some modes of Indian cooperation, almost always about their shape and mechanisms, were

communitarian society... the very proposal of our grandparents and ancestors, the true solidarity, the community's. **Our way of life is still communitarian...**" (OIT 1999, p. 2 [bold type in the original text in Spanish])

reported early on in the cultural anthropological literature, including the following topics.

Robert Redfield, a social anthropologist mainly interested in "folk life" organisation (Redfield 1930), went to live in 1926 for almost a year among Nahuas from Tepoztlán, a village in the South-Central plateau of Mexico, a few years after the civil war ended. The state of Morelos, where the village is located, was the scene of intense military confrontations, being the birthplace of the Zapatistas, one of the most important armies that took part in them. With this, Redfield and others initiated a torrent of anthropological participant-observation studies within the communitarian life of both Indigene and non-Indigene peasants from Latin America.

The people, totally dependent for their subsistence on maize crops, possessed both private and public land parcels, combining land tenure so as to better serve their private and collective benefits. The public land was cultivated either through individual or collective procedures; these collective procedures primarily involved farming for communal profit in order to accrue a fund to support celebrations in honour of the patron saint. Although any local could use public land for their own private benefit, it was mainly used over prolonged periods by the dispossessed, those without any private land, to provide their only source of subsistence staples. People set themselves up in *barrios* (neighbourhood wards which date back to the pre-Columbian era, and which to this day are each identified with the worship of a particular Catholic patron-saint) and would designate a *mayordomo* (literally, steward, but rather custodian) and other secondary annual posts of office, who assumed the role of honorific lay hosts for the patron saint's festivities and also for directing the farming tasks which would fund worship.

These honorific roles and collective farming tasks are the traditional foundations

which underpin the still strongly in-force institution *of sistema de cargos (*a system of designating office, i.e. responsibility) which can be likened to climbing rungs on a very long ladder in search of social distinction based on accumulated merit in service of the community, and where religious tasks are very significant and "regarded as moral obligation of the individual to perform" (Redfield 1930; p. 147).

Redfield noticed a second wider level of interactions among the eight villages settled in the valley, concerning solidarity between villagers for their common defence and for facing up to any free-riders in coordinated way. Since the civil war was only in the recent past, such joint efforts were understandably an important instrument for providing security and confidence; but furthermore, were a means by which they could manage the hard tasks of rebuilding their physical infrastructure.

Seventeen years later, Lewis initiated a quite extended survey (1943-1948) which tangentially approached cooperation in the same peasant village, replicating some items of Redfields' study. Of great methodological and informative value, the published work resulting from Lewis' effort (1951 [1972]) is an important piece of the cultural anthropology of Mexico. The strong contradictions posed to Redfield's preceding work are very interesting; among others, Lewis' peculiar characterisation of people's conduct as individualistic, unfriendly, little cooperative and with a reticence to engage in help-exchanges; his statement is based on, among other indicators, the Rorschach projective test applied by members of his staff and the analysis of a huge data collection.

An evolutionary scholar who makes a close reading of Lewis' book will be pleased to find descriptions that can be identified as kin selection', 'reciprocal altruism' and 'exchange labour' behavioural patterns, for example, specific modalities of 'helping at the nest' (pp. 63-71, 72, 73, 99-100) and nepotistic aid (pp. 62, 72, 73, 100). Also of interest are actions in service of the community that range from benefits for the neighbourhood, the barrio and the village right up to the municipality. Collective labour on the lands of the venerated saints and for religious feasts, material upkeep for the churches and routine civil and religious services, sometimes compulsory, sometimes voluntary, were always provided free.

Lewis also recorded the particular loyalties of *compadrazgo*: a very tight moral link between the parents of a child and his/her godparents, considered a strong social kinship among the Catholic Indians which leads them to systematically labour together in longlasting mutualism. Other sorts of mutual cooperation between employer and employees are reported such as in the modality of remunerated labour. Finally, as an instance in the altruist domain, he noted the "truly heroic and dramatic undertakings" (p. 111) of constructing a road to the State's capital city, about 40 kilometres away from the village, for which the men volunteered, also free.

The relentless progress of the *mestizo* (non-Indian people coming from mixed cultural and racial backgrounds) way of life at the expense of Indian cultural heritage and the waning of cooperative modes of collective life as a consequence, is recorded in the years following the revolution. It is worth noting that, in spite of the communal land-ownership system remaining practically untouched, together, with other various elements of pre-Hispanic agriculture and people's material culture, contradictorily mutual aid procedures continued to diminish, as Redfield had already noticed (1930 [1968])

Since Lewis' interest was focused on the post-revolutionary cultural change experienced by Tepoztlán social institutions (governed by *mestizos*) the effect of cooperation was dealt with just as a side issue; even so, it is a remarkable precedent; it is

also important to take into account the general appraisal of that particular village. Although Lewis speaks of an "underlying individualism of Tepoztecan institutions" and characterises its people as lacking cooperative spirit (Idem; p. 429), by way of contradiction, he spotlights specific traits about the "strength of the family institution, the general quality of inter-personal relations, the greatest social stability, and life's smooth continuity with the past" (pp. 444-445)..

As an important antecedent, one should note that Lewis attributed the kind of factors related to cooperative processes mainly to the legacy of the Indian majority and only partially to the *mestizos* living in the municipality.

In a different respect; Charles Erasmus, one of the pioneer sociologists of Amerindian labour mutuality, at the same time noted the rapid waning of mutual labour at the hands of wage labour promoted by the change in culture, but also reported that one of reciprocity's most important strongholds had been located among the rural communities all around the world. In his description of reciprocal farming, widespread in South America and Mexico, Erasmus (1965) referred to its modalities, including both exchange labour and festivity aid for regular work-days and holiday celebrations, respectively, differing in the degree of obligation to be reciprocated. On the other hand, he claimed that motivations for such acts were both the desire for social approbation and prestige and a basic urgency for survival. This later point is characterised by clearly being "an intra-class (horizontal) phenomenon at the lower end of the social scale" (Erasmus 1965, p. 193).

In addition, the author found that the exchange labour process contained expressions of close personal contact and empathetic interactions. An outstanding characteristic was the unspecialised nature of the work, which followed a pattern of direct redistribution of resources, totally different from the cash economy. This latter facilitated delayed reciprocity, demanded specialised work and mechanised technology and often lots of hired labour, at the same time as it promoted conspicuous consumption, impersonal work processes and individualistic patterns like those quite common in urban life.

Dealing with the relationship between rainy season uncertainty and migration; Turner (1973) found among the Chontales Indians from Oaxaca, Mexico, that in a drought year, those who were prevented from migrating subsisted thanks to the generosity of kin and friends. In a rather vague note, Turner attributed the cause of their solidarity to both a shared cognition of the world and the tight kinship which is always able to act in benefit of relatives. Amongst such people who are harshly constrained by the ecological milieu, Turner identified a uniformly extended psychological trait: their lack of competitive ferocity markedly guiding them towards a preference for cooperation. Time and again people chose to come to a banal arrangement rather than enter into a dispute, even though the rewards could be tempting. On the other hand, as a pre-condition of cooperative acts, it was indispensable that there existed an egalitarian atmosphere; i.e. that everyone was equally affected by the diminishing of assets or the prevailing misfortune. Certainly cooperation could imply a set of ideals as much as concrete relationships, but in many Indian groups it signals preferably a monetary donation for the maintenance of public services (Cohen 1999) like a moral tax falling upon wealthy families, for instance merchants. Further, it is taken by the beneficiaries as an actor's opportunity to redistribute earned income in determined neighbourhoods which are, at the same time, the site of their home and their local market. Sometimes, such a kind of taxation, was contributed preferably as labour-force, but might be exchanged as cash-based to hire a worker in substitution and hence a job is created as an

additional benefit, e.g. as commonly offered in Indian communities of the South Sierra from Peru (Figueroa 1984) and among the Zapotec Indians from Oaxaca, Mexico (Cohen 1999).

This ubiquitous communitarian duty has existed for centuries throughout the world, with its regional peculiarities and different ethnic names: in the case of Mesoamerica, the traditional modes of cooperation take the names of *cuatequitl, tequio, mano-vuelta, servicio, gozona;* in South America, *minga, mingaco, convite* or *ayni*, for instance (Redfield 1930 [1974]; Cohen 1999; Hernández-Montes and Heiras-Rodríguez 2004; Erasmus 1965), and are almost always entered into voluntarily, except for the moral pressure exerted by people. However, some authors argue that modes of cooperation e.g. *cargo* systems (treated in depth in Chapters II, IV and VII) can prove coercive and entail an abusive imposition to mask unpaid labour in benefit of the State or Church (Harris 1964).

As an additional aspect, some authors explain the cooperative spirit among dwellers in Indian communities, as a response to the high degree of uncertainty present in peasant life and report examples of such e.g. quality of seeds and seed growth, soil fatigue, pertinence and quantity of rainfall, market prices for inputs or produce (if either), changes in official politics for land tenure, taxes, or bureaucracy in the case of cashcrops, among others (Cancian 1972). At every level of the process, from the technical demands of cultivation through to the complexities of economic management, cooperative labour among many peasant groups represents a useful tool for mitigating against the ravages of uncertainty inherent in peasant life; an uncertainty that produces complications even for the most efficient at maximising their resources, such as the Zinacantecos Indians from Chiapas, Mexico (Cancian 1972; 1992). To cite Cohen

(1999, pp. 20), "farming is barely a tenuous suggestion to the earth-mother and rain-father".

Systematic cooperative behaviour, common to both forager tribes and other egalitarian organizations heavily dependent on limited information and the vagaries of nature frequently proves insurance for survival. It could be stated, in general, that wherever uncertainty, risk and change are part of the socio-ecological scenery, cooperative patterns are more frequently embedded in the populations' behavioural repertoire (Cancian 1972; Cohen 1999). Apparently, in the very complicated peasants' subsistence insurance equation, the system of social exchanges by means of redistribution is a crucial term (Scott 1979). Certainly, one of the first principles of the 'moral economy of the subsistence ethic' practiced by Southeast Asian and Amerindian peasants, as reported by Scott, is the support to close relatives, distant relatives and non-relative friends, although, interestingly, he does not attribute reciprocity action as being altruistically motivated in itself, but rather related to basic necessity strategies; i.e. that the "normal" risks of agriculture may be overcome only by the concerted action of extended households, neighbours and villagers acting as shock absorbers in cases of economic crises.

It is important to clarify now that most of the Kgoyomes' cooperative practices that will be recorded in subsequent chapters are not merely the continuation of historic practices because of inertia, but rather have a real economic validity for the groups' well-being in the present day. Thanks to collective participation, public facilities such as schools, roads, churches, ditches and channels etc. are maintained up to the present day, a fact reported in the specialist literature and witnessed by this author himself. This helping and collaboration with certain tasks in real life means for example, a reduction for women in the time otherwise taken up on routine household chores; a reduction in the financial burden of cultivating common land parcels, and a maximisation of efficiency.

As an aside, it is worth noting that peasants do not only cooperate with their families or with their local community, but also with the macro-economy of their respective countries. For example, this is the case with Mexican peasants who migrate and we can look at the statistics so as to weigh up the huge importance of their contribution directly to their households and to the Mexican economy in the present day. Every year about 485,000 Mexicans travel to the Northern countries in search of a job; to date, the residents in USA of close Mexican origin amount to over 20 million. According to the Banco Nacional (the government treasury bank of Mexico), at the end of 2005 the amount of remittances reached U.S.D. \$20,000 million, the second main source of State revenue and 2.5% of GDP, equivalent to the total Direct Foreigner Investments (Milenio Diario 07/09/2005). Between 1984 and 2004 the percentage of rural Mexican families receiving remittances from relatives as their main or only source of economic support ranged from 41% up to 55 % (Chávez Gutiérrez 2006). 52.7% of migrants working and sending remittances to their households in Mexico were employed in the agricultural sector of the United States of America during the early years of the 1980s (Bustamante 1984). Finally, if a calculation is done based on the figures put forward by Marcelli and Cornelius (2001), it could be asserted that, in spite of rapid urbanisation of the Mexican population, at least 37 % of Mexican migrants working in the USA and sending remittances home in most recent years were natives of the peasant sector (Marcelli and Cornelius 2001). About a third of Mexican peasants are Indians.

1.3 AN OUTLINE OF THE MEXICAN INDIANS' ECONOMIC SYSTEM

As said above, virtually all Indians are peasants; but not all peasants are Indians in Mexico. At present, the peasant majority are *mestizos* and a neat distinction must be stated to avoid confusion. Indians are normally rooted within an ethnic community which is both their natural habitat and, at the same time, their only social articulation². By contrast, the rest of peasants, about 25 million Mexican *mestizos*, form part of the compound society of the Mexican non-Indian population. Their agricultural produce is transferred to wider society, i.e. they are the socio-economic structure which feeds society; and are subject to the demands of the market determined by those holding power in society. (Wolf 1966; and 2001). On the other hand, the Indians' and the *mestizos*' modes of production, broadly speaking (although a source of a still intense current debate), are socio-economically different, according to the arguments put forward next.

While most *mestizo* peasants are structurally integrated into the capitalist mode of production as cash crop sellers, and many of them have private land tenure, even as small-holders, Indians, for their part, are marginal cultivators scraping a living on the basis of a subsistence self-consumption regime, many of them working on communitarian land or what remains of them.

These are two distinct modes of production co-existing with some others; the technically highly-developed industrial farmers, for instance; all of them encompassed within the general capitalist framework. Below, one of the most appropriate ways to deal with the economic distinctions is broken down.

² -frequently, ethnicity is their only identity or the only important one they acknowledge; for instance, Zinacantec Indians declared to Cancian, they were first Zinacantec, then Indians and lastly Mexicans (Cancian 1992). It is the same case of the Totonacas, as reported in the ethnographic chapter of this work.

First; contributions by Marx and the sociological 'conflict tradition' school (Collins 1994) pinpoint that peasants have constituted, for centuries, a mass inability to act as a unified group in search of common goals (Engels 2001 [1894]). Marx depicted the typical French peasantry's situation in his time and earlier just as "a small holding, a peasant and his family; alongside them another small holding, another peasant and another family" (Marx 1963 [1852] p. 124]). Peasants just stood unconnected from the "wealth of social relationships" so that "the identity of their interests begets no community" with no conscious unity, just being a "simple addition of homologous magnitudes, much as potatoes in a sack form a sack of potatoes" (Marx 1963 [1852] p. 124). It follows therefore, that cooperation is not a substantial trait of peasant populations as such. But the Indian peasants are a special case which should be studied from a particular viewpoint.

Although Marx did not devote much direct attention to analysing pre-capitalist modes of production (Layton 1997), he made an historical overview starting from the basic stage of primitive communalism. His method may be a more appropriate approach for disentangling the Amerindian situation. When analysing the characteristics of the Asiatic mode of production, Marx describes the conditions of a communitarian society; the land is owned by the community, the division of labour is based on natural categories such as sex and age and the criterion for exchange consists chiefly in reciprocity (Marx 1964).

The different observations which have been collected here in this study indicate that the mode of production of modern Mexican Indians is an historical hybrid which brings together various characteristics of different modes. To put it briefly; they live out their lives in a framework of traditionally communal property; at the same time however, they are involved in a form of organizing communal labour which owes its economic and cultural structures more to a European colonial regime (forcibly embedded), and have then assimilated adaptations due to the constraints of capitalism which is the principal determinant of their way of life, so that capitalist proxies are the beneficiary of any surplus created by the peasant producers. Thus, some traits of ancient communalism (Marx 1964), aspects of the Asiatic system (for general features see: Layton 1997; Currie 1984; Marx 1964), traces of the feudal system; (Wagley 1964) and capitalist characteristics are combined in their specific circumstances.

Peasants and their characteristic individualism, on the one hand, and Indians and their essential communalism, on the other, form the contradiction in terms inherent in the label of 'communalist peasants' which Indians embody, a notion that appears to be an oxymoron. Poorly cooperative patterns restricted to the family-range more logically corresponds to a peasant population living under feudal conditions; meanwhile strong cooperation patterns correspond to a communal regime (Lucas 1985).

Yet, if Marxist structural categories are applied to the Amerindians' specific mode of production (and its close variations), such contradiction becomes dispelled; i.e. peasantry and communality clearly are complementary premises in the particular development of the Indian population, judging by these following inherent economic traits:

- 1) Ethnic egalitarianism based on the communal land property-type or a mixed regime made of communal and petty landownership
- 2) An even distribution of the right of possession of land and other resources
- 3) An egalitarian division of labour organised by natural traits such as sex and age,
- 4) Family self-sustenance complimented by widely extended inter-familial labour

- 5) Lineages and non-kin groups acting together in practical tasks of cultivation and communal maintenance (including churches and other collective spaces)
- 6) Distributive exchange as a principle of social levelling

These social conditions of life, which determine high levels of reciprocity and labour exchange, promote concrete forms of communitarian consciousness; i.e., to interpret Marx (1977 [1859]; Engels 1975), in Indian social life, communalism and peasantry meet the material conditions of existence which are likely to generate strong patterns of cooperation; therefore far from proving contradictory, they form a congruent link, and this is an idea that will be returned to, especially in Chapters VII and VIII.

Certainly, capitalist development keeps on moving forward, reducing the ethnic frontier in as much as the rural and traditional gives way to the industrial and Western way of life. The neo-liberal onslaught is changing traditional communal property, communal tenure ever diminishing as private tenure expands; a concrete example is the *ejidos* (plots of land belonging to the state given in possession to farmers for their own private benefit and, to a lesser extent, that of the community, and with no legal right to be sold on) were put into a process of privatisation by the 1992 Mexican law change (Gómez 1998-1999; Toledo 1999). Accordingly, the effects of this law can be noted in the distortion of the intra-communitarian lifestyle, and can already be perceived through some changes. These include the intensification of migration as aforementioned, and the substitution of mutual aid by wage labour; that is to say, in general, a partial shift from the reciprocity and redistribution economy to the market as a principle of exchange (Erasmus 1965; Schusky 1989).

1.4 EXAMINING THE CHARACTER OF MEXICAN PEASANTS: A PSYCHO-SOCIOLOGICAL ANTECEDENT

The *mestizos* are biologically Indian and European or rather a mixture in varying degrees of the racial groups which form the Mexican nation; their biological origins are not the most important premise (Wagley 1964), but rather the cultural identity and behaviours they adopt. The *mestizos* operate as part of the wider population to which they pertain; that is, a generally open community split by social classes and economic levels. For their part, the Indians exclusively operate within their generally closed communities where egalitarianism prevails. In parallel with the economic differentiation, their cultural backgrounds also diverge.

The *mestizo* peasants exhibit a poor group spirit; the Indians, conversely, exhibit a very strong one. The former prefer to amass private goods; the latter are constantly making provision for the community, and yet they have their own compensations. For example, an individual living under the communal regime "is related to himself as a proprietor, as master of the conditions of his reality" (Marx, 1964, p. 1). Such a claim seems a stimulating starting point for an exposition of the make-up of a people's character, but it was made not by a psychologist, but by Marx himself.

Another peasant community inhabited by many Indians and ethnically downgraded descendants of them structured under a *ejido* regime in the state of Morelos, already visited by Redfield and Lewis, was the universe for a different survey during the 1960s carried out by Fromm and Maccoby (1973 [1992]); it is probably the most well-known study of its kind in Mexico. From a cultural psychoanalytic approach, they pursued an

ambitious diagnostic of the community's social character by applying almost 900 socioeconomic questionnaires, the Rorschach and Thematic Apperception or TAT tests, as well as analytical interviews, in a kind of natural laboratory, with the aim of recommending a program to remedy their public problems.

In these authors' understanding, the essential nucleus of the structure of the most common character in any group is the result of the basic experiences and mode of life shared by its population (Fromm 1942); furthermore, social, economic and cultural traits constantly experienced by a population lead them towards cultural change often followed by adaptations in a process analogous to Darwinian natural selection. In such a milieu, the advantageous character is likely to thrive in their social environment, especially in periods of social change, and the selected social characters then function as a strong mechanism to mould human energy into individual_versions in accordance with that culture's predominant values and its differentiated rewards; this process was called 'social selection' by Fromm and Maccoby (1970; Maccoby 1982). In the words of the co-author, the social character is "a character matrix, a syndrome of character traits which has developed as an adaptation to the economic, social, and cultural conditions common to that group." (Maccoby 1984, p. 71).

By way of patterns in behavioural strategies, two basic alternative character orientations predictably emerge, namely "productive" or "non-productive"; the former is rather the ideal for human development, the latter is a general class encompassing three main tendencies: "receptive", "exploitative" and "hoarding" (Maccoby 2002). According to the authors' empirical findings, the villagers personified combinations of these orientations and types, the most prevalent being the "non-productive-receptive" character; the next most common the "productive-hoarding", and the least frequent the

"non-productive-exploitative". The direct antecedents of Fromm's 'receptive', 'hoarding' and 'exploitative' types are Freud's 'erotic', 'obsessive' (formerly anal) and 'narcissist' types respectively (Freud 1965 [1933]; Leak and Christopher 1982).

In Fromm's theoretical framework, the traits incorporated in the "non-productivereceptive" character and, especially in the "productive-hoarding" character, can be associated in a positive sense with the solidarity, brotherliness and generosity, typical of the productive orientation profile. Conversely, they can be associated in a negative sense with individualism and antagonism of "non-productive-exploitative" individuals; at any rate, the goal would be the productive-cooperative type (Fromm and Maccoby 1973 [1992], p. 271). Certain parallels seem obvious with the typology of selfish free-riders or cheaters, the selfish gene and altruist donors in modern Darwinist literature.

Finally, when examining the causes of the resounding failure that, in his view, modern society has suffered in his "Great Promise of an Unlimited Progress" (Fromm 1976; p. 7), Fromm identifies two sources; first, the economic contradictions inherent in the industrialism stage and, second, two broad psychological premises, i.e., the mystified concept of happiness in terms of maximum pleasure as the goal of life and, also, the egotism, selfishness and avariciousness promoted by the system.

As an aside, it is very interesting to note that Fromm and Maccoby's theses do bring to mind a surprising analogy with, on the one hand, the Freudian libido (a seminal theoretical construct that influences Freudian followers including the young Fromm himself) driving a person to seek maximum gratification and, on the other hand, the selfish gene, making use of an individual's body and mind as if they were impersonal machines designed for survival and reproduction (Dawkins 1976; 2004)..

Although cooperation per se is not much developed in their study, it does owe

plenty to Fromm's and Maccoby's notations, including their conceptualisation of it as a privileged means to convert the traditionally antagonistic and envious peasant character into a more cooperative one, and also as a set of mechanisms through which advantageous projects can be conceived and generated for the community's benefit. Once the potential of cooperative projects has been proven in the field, they might then become the key strategy for nurturing more ambitious and long-term goals of cultural change in order to leave behind intra-familial violence, alcoholism, poverty and other issues which have plagued Mexican peasantry over the centuries. In some way cooperation might be both a therapeutic mechanism as well as a healthy state for people (Fromm and Maccoby 1970).

To overcome a long history of underdevelopment among Mexican peasants, cooperation featured as one of the key solutions in Fromm's and Maccoby's conclusions, starting with a commitment to cooperation in the highest political circles. Longer lasting solutions could only be achieved if the authorities were to promote massive interventions which would count on the villagers themselves carrying out the programmes. As they said in their own words and in an unambiguously humanistic sense, "prediction and planning of social change in such a peasant society [initiates a] social selection process" (Fromm and Maccoby 1970; p. 226). In other words, their metaphor of the 'altruistic meme', - one that precedes that of selfish gene - was posed as a radical alternative in an era of what Fromm described as impersonalised "machine robotism." (Fromm 1970).

1.5 A CONCEPTUAL FRAMEWORK FOR THIS STUDY AND ITS DEPTH

Different characterisations of the peasant population as a whole have been made in

different disciplines concerned their inclination or otherwise to engage in integral cooperative relationships as a systematic behavioural pattern. While some authors uphold that they are so inclined, (Redfield 1965; Erasmus 1965 and 1977; Scott 1976; Layton 2000) some others express the contrary (Marx 1973; Fromm 1970; Lewis 1951; Wolf 1966), all of whom are reviewed in this work. The more plausible explanation for this dissension is perhaps the different perspective from which each author approaches the subject.

In effect, as evidence of its complexity, scholars such as Wolf (1966) and Erasmus (1965) had signalled the existence of about eight subcultures or subtypes of peasantry within the generic stratum. Further, such a complex phenomenon leads to ambivalent opinions because of the uncertain limits shared with other social segments and the great breadth of socio-ecological domains occupied by peasantry, exceeding indeed the limits of a social class. More than one perspective may be taken in the debate. In human history it is possible to find certain peasant populations behaving in a particular sort of pattern which can be characterised as cooperative, and others behaving in the opposite way; the difference must lie in their conditions of life, including the internal dynamics by which their sustenance is produced and their population is reproduced.

Amerindian peasantry as a general rule is conspicuously on the side of those which consistently behave cooperatively, as stated by the authors reviewed throughout this chapter. Therefore, to proceed with the subject delimitation of this study, a differentiation between peasantry and ethnicity, sometimes erroneously taken as the same, has been indispensable. More specifically, a distinction is made between Indian peasants and non-Indians, their origins and socio-economic articulation in the systems' structure, among other traits, being taken into account. Apparently, Indian peasants have

evolved as highly cooperative peoples, but not so the *mestizos*: this assumption will be verified - at least as far as the first part of this statement is concerned - and with as much detail as possible about the implications.

At this point it is necessary to return to the argument made in the very first paragraph of this work and to recall the multiple aspects of the subject, in order to propose a conceptual approach which can encompass the field of my interest. The nature of cooperation has been shown to be a complex phenomenon which interacts with many others, themselves complicated and extensive. A cooperative event has been found by researchers to be either: an objective action or a behavioural mechanism in different modalities, carried out on multiple levels of the peasantry's societal dimension as a strategy for accomplishing disparate functions; as a belief or value behind a pro-social attitude and as a link structuring individuals into a group; as an intra- or inter-group experience creating a shared affection for the social climate; as an item of content in the cultural knowledge which forms part of the ancestral inheritance of a people, and so much more.

Logically, each cooperative act is related to the degree of behavioural intensity and the density of the social fabric which differs from community to community, and in accordance with the multiplicity of interrelationships, i.e. two people accrue a greater wealth of socio-cultural experience than one, twenty more than two, and so forth.

On all levels, whether as a mechanism in the pursuit of an ultimate function or even as an artefact in the quest for short-term results, and whether combining biological tendencies or cultural inclinations, in everyday transactions by Indians, cooperation invariably appears.

Next, by way of summary, the question of identifying the different objectives of

cooperation and the functions it underpins is answered by listing them by degrees of progressive complication regarding the amount of individuals implicated and the organisation required. In brackets, as appropriate, each one of the chief roles it fulfils as per Tinbergen's *four questions* is noted (Krebs and Davies 1981 [1993]; (Barret et al 2004) not excluding the possibility of others:

1) As an objective behaviour, cooperation in land cultivation is fundamental for the best provisioning of the household as well as for meeting other basic group needs, such as the defence of a community's territory (cooperation is needed; survival or functional value).

2) It is a regular procedure for defining codes of ethnic conduct and orienting the selected actions of individuals in the group's milieu according to any prescribed behaviour, inculcating conventions of morality and commonality (cooperation is exemplary; ontogenetic value).

3) As a vehicle to negotiate status and reputation through a lifetime based on deeds. From an egalitarian basis, typical of Amerindians, a merit-based hierarchical structure is built to facilitate monitoring individuals' actions. Suitable for political control and the registering of accumulated merit, including rites of passage, cooperation becomes a source for acquiring prestige (cooperation is prestigious; ontogenetic value).

4) From one generation to the next, cooperation facilitates massive flow of solidarity which becomes the collective pattern through which to channel economic support with a redistributive aim, and for transmitting community values to the youth (cooperation is adaptive; all the *four questions* are fulfilled).

5) Cooperation is an institution through which the degree of members' commitment towards the community is measured. Hence it facilitates short-term and long-term

relationships between kin and acquaintances, by means of alliances to consolidate a communitarian climate and to develop a sense of social harmony; and in addition for enjoying the companionship of the group and for softening conflicts and competition (cooperation is assertive; historical value).

6) Cooperation is indispensable in making up the ethnic identity and the replication of a group's social niche, as much for intra-group union as for inter-group distinction. Particularly in the case of the Indian population with respect to the *mestizo* population, it helps protect cultural ideas and values and filters foreign meme invasion; helps to resist economic exploitation and threats to the community's resources (cooperation is integrative; survival and historical values).

1.6 Aims of the study and layout of results

Within this general framework, the data collected in the field will be configured to encompass the cooperative phenomenon such as shown by a rural, agricultural, highlander, peasant, Indian population from Mexico: the Totonacas of Huehuetla. The cooperative phenomenon will be examined on three successive levels or layers, in data chapters which will analyse data from the field and describe and explain the processes at the following levels:

- a) In the household, including the personal and the pair-bonding context
- b) Within the extended family and between households
- c) Within the community at large.

Each of these levels, supported by the data, attempts to provide a perspective from an element of the Totonacas' pro-social life. Next, the population's life-history will be presented, including relevant aspects of the pre-reproductive period, cooperation

influencing preferences in the mate choice, early parenting, a middle reproductive period, and investments in both the household and the community. Then, by way of a final synthesis of all these, the overall level will be specifically treated in the Discussion and Conclusions chapter.

Standing as a gross initial premise, on the one hand, is the statement of some Marxist, psychoanalyst and cultural anthropologists, already referred to in this work, who consider peasantry as a social category made up of individuals whose typical behavioural patterns are dominated by highly individualist goals and distrustful attitudes which make them unable to sustain long-lasting and robust cooperative relationships.

On the other hand, stands the alternative assertion, made both by some authors from the discipline of cultural anthropology, as well as Latin-American *indigenistas³*, who make a particular distinction with regard to the Indian peasantry, which is characterised by reciprocal behaviour patterns, mutual aid and many other communitarian demeanours.

In summary, the study of a specific kind of peasant, an ethnic group representative of Amerindians and their cooperative behaviour as the focal point, with the theoretical tools of Darwinist theory, is put forward; whether the behaviour of the Totonacas from Huehuetla corresponds to an individualist or a pro-social pattern, a poorly or a strongly cooperative pattern, will be subjected to testing.

³ scholars studying and supporting the historical cause of Indigenous peoples

CHAPTER II ETHNOGRAPHY OF THE TOTONACAS OF HUEHUETLA

This chapter provides an introductory ethnographic review of the Totonaca Indians as a whole, with special emphasis on the historical culture and socio-economic background of the Totonacas of Huehuetla, also called Kgoyomes. It presents the findings of my research within that particular community and the aim is to provide a clear account of from whom the data was gathered and the context within which the Totonacas of today live. This account is based on both a synthesis of the extant general literature on the Totonaca people, including some local and national government statistics, and also information gleaned by myself from key informants through formal interviews and permanent participation in the daily life of the community. The data collected through formal questionnaires amongst the community and its statistical analysis is dealt with in the later chapters.

2.1 THE AMERINDIANS OF MEXICO

One in eight Mexicans is an Amerindian (or just *Indian*, the most common appellative); more precisely, 12.6 % of the total modern Mexican population belong to one of 62 Indian ethnicities that still survive today. Their natural demographic growth rate in the few last decades has been bigger than the non-Indian population: 1.42 per cent against 1.25 per cent in the year 2000 (*CONAPO* 2005). Within five years Indian populations will increase by an additional million people amounting altogether to 14.2 million people.

The typical milieu for the Indian population is poverty: 55.1 % dwell in predominantly Indian communities classified as rural (those with less than 2,500

inhabitants), of which 96.6 % suffer 'high' or 'very high' social exclusion according to official criteria (CONAPO 2005). By way of example, their child mortality rate is 60% greater than among the non-Indian population, and life expectancy is two years lower (73.7 years of age) than for the national population (75.6) (CONAPO 2005).

These Amerindian ethnicities are mainly concentrated in five of Mexico's south western states, e.g. Puebla has an Indian population reaching 1.2 million or 22 % of the total population of the state. The Totonaca population is among the eight most demographically important at the present time, and are mainly located in the states of Puebla and Veracruz. According to the National Census of Mexico (INEGI 2000), the current national Totonaca population amounts to 240,034 persons over five years old. The Totonaco language is one of 62 indigenous languages in Mexico and is spoken by 4% of Indians within the national territory.

2.1.1 A FIRST IMPRESSION OF THE TOTONACAS

The first Western historical text alluding to Totonacas was a letter by Hernán Cortés in 1519, written from his head-quarters at Veracruz in the southern extreme of Totonaca territory, to King Carlos V in which he describes some of the Indians' physical traits, including pierced ears and noses, the fact that they inserted rounded stones like mirrors or pieces of gold into their lower lips, and their colourful clothes. Other conqueror-chroniclers described them as "…indigenous of strange appearance… wearing blue stones into their perforated thick lips, (a) disc(s) of gold in the ear, and exotic embroidered clothes (Benítez & Pacheco 1986 -35). Almost five centuries later, many misconceptions continue to abound about them, even amongst ordinary Mexicans– despite the size and spread of their population.

2.1.2 TOTONACAS, TACHIHUINES, "THOSE WHO FLY" AND KGOYOMES

Some of the earliest chroniclers track the community's name back to "Totonac", one of their earliest gods (Masferrer 2004). According to other authors, *Totonaca* is the plural term that means "man from hot land" or "the dwellers from the land in the hot water" (León-Portilla & Shorris 2004). Nevertheless, all my own Totonaca informants were satisfied with the more conventional etymological explanation whereby *Totonaca* means "the owners of three hearts", coming from *akg'tutu* = three, and *nacu* = heart or honeycomb (Patiño 1907), a term that alludes to the three greatest ceremonial centres of their cultural territory: El Tajín, Zempoala (both in the lowlands of Veracruz State's coasts) and Yohualichan (in the highlands from the Sierra Norte in Puebla State).

Totonacas or *Tachihuines* ("those who own the true word", another of their names) are considered the heirs of the mother cultures of the Olmecs, Toltecs and Mayas (Ochoa 1990); the influences of these cultures are present everywhere in the architecture, sculpture, pottery and other aspects of knowledge in contemporary Totonaca civilization. In particular, the Totonaca language is considered highly related to those of these earlier cultures; it is also related to the contemporary Macro-Mayense linguistic group (Kaufman 1994; Asher & Simpson 1994; Wonderly 1942; Jiménez 1942) to the Tepehua people's (co-residents in modern day Puebla and Veracruz States); and in the second degree to the Mije and Zoque languages (from modern Tabasco and Chiapas States). All of these form part of the Penutian subfamily of the general Amerindian language family, as stated by Greenberg's classification (cited by Cavalli-Sforza et al 1996).

It has been stated that the Totonacas have always been profoundly religious and deeply attached to their farmlands, a typically peaceful society whose history

scarcely registered any violent explosions or belligerent episodes (Krickeberg 1956). They built their urban centres as open spaces without defensive devices; instead of fighting, they systematically opted for alliances and armistices as a means to thrive. In the pre-Hispanic time, the Totonacas hardly ever attempted to resist the Aztec yoke; on the contrary, for decades they opted to render huge tributes in kind such as liquid amber, clothes, precious feathers and cereals (Garma-Navarro 1987). Likewise, they presented only a fragile resistance to the Spanish invasion and, even though they consented to act as the first hosts on American soil to the conquerors (Urrutia and Libura 2005) and to guide them in their march on México-Tenochtitlan, the Aztec capital city, the Totonaca role in the assault was not active (Garma-Navarro *et al* 1992) but rather one designed only to avoid a Spanish retaliation. When they were involved in battles, it was invariably related to the defence of family, land property or the liberty to worship in their traditional manner.

At the level of their personal life, their habitual good temper is spoiled only by excessive alcohol consumption, a scourge on male culture strategically inculcated by European colonisers and later by exploitative *Mestizos*. The Totonacas traditionally have a reputation for being unable to lie and for not being good at deception. They are and have been regarded over the centuries as a peaceful and good-humoured people who laugh a great deal. Unique in the world is their creation of "smiling faces", sculptures of very cheerful human faces made from baked clay for ceremonial uses which represent both the enjoyment of life and the acceptance of death as part of the inevitability of existence. And yet in Mexico today, one of the most pejorative expressions used to offend someone in vulgar language is to call them a "naco (a)", a degraded version of the word "Totonaca".

"Those who fly" is another name they give themselves (Chenaut 1995) because of the world famous "Flyers Dance" performed by a posse of men which involves descending whilst spinning from the top of a 20 meter wooden pole. This ceremony is a token of their religious worship of *Tajin*, the god of lightning and thunder, associated with the heavy seasonal rains characteristic of the *Totonacapan*, their homeland (see photograph in appendix E).

One more particular appellative is "Kgoyome (s)", the name that Totonaca people from the municipality of Huehuetla give themselves because it is the old name in the Totonaca language of their chief town: Kgoyom.

2.2 RELIGION AND SOCIAL STRATIFICATION

Historically Totonaca society was theocratic, polytheist and markedly stratified in social castes (Palerm 1952). In spite of many uncertainties, some researchers agree that, at the apex of the social pyramid, monarchs and high priests ruled the people in an authoritarian manner, as is common in societies operating on an 'Asiatic Mode of Production' (see for a general characterization of this, Marx 1964; Currie 1984; Layton 1997). Below them were other groups of chiefs, who functioned as administrators of worship, commercial and civil services. The bulk of the people formed the common class dedicated to agriculture and provision of a labour force.

Their main gods are related to natural entities and formed a trilogy: Kinpuchinakán, the god of the sun; Kinpatskatzikán, the goddess of both the sky and maize-land; and their child, a saviour who revealed to them the use of fire and is credited with other heroic deeds (Krickeberg 1956 [2003]). According to Palerm (1952 and 1990), the third of these is a form of surrogate worship that derived from

the people's ancient folk wisdom. My own observations revealed that much of the associations with this last member of the trilogy are now attributed to the name of San Salvador. In the Northern Totonacapan, *Tajin*, the god of lightning and thunder was an additional powerful god (Ichon 1973).

On the basis of this trilogy and taking advantage of the similarity between their ethnic religion and Christianity, the evangelizers initiated a clever substitution superimposing the Western gods and saints onto the Indian credo, giving rise to a syncretistic version of Catholicism (see Schmelz & Crumrine 1996) that is vigorously professed to the present day.

2.3 THE TOTONACAPAN

This particular region had been inhabited mainly by the Olmeca, Huasteco, Tolteca, Chichimeca, Totonaca, Tepehua and Nahua peoples (Franco y González-Salas 1993), either sequentially or simultaneously, attracted there by the unsurpassed farming conditions that result from plentiful water, fertile land and an absence of freezing weather. Due to the peaceful attitudes of most of these peoples, co-residence was frequent and cultural exchanges plentiful. When the Spanish arrived, they recorded 72 trilingual, 82 bilingual and 16 monolingual towns in the Sierra of Puebla area (García-Payón 1958 & 1990). In effect, the Totonacapan has been a melting-pot wherein diverse ethnicities and ecological conditions were the ingredients for modern Totonaca culture.

Geographically, the Totonacapan is a region comprising two large ecological areas: the *Sierra* (mountain chains) composed of highlands and their associated slopes and, on the other hand, the coastal plains. The original extent of the region, in

its widest scope, was located alongside the Veracruz State coastal plain in the basin of the Gulf of Mexico, having as historical frontiers the Rio Cazones to the North, the Río Papaloapan to the South (both in the current area of Veracruz State), the Sierra Madre Oriental from Puebla State to the West and the Gulf of Mexico shore to the East (Kelly 1953, Garma-Navarro *et al* 1992).

In these two large areas, five natural sub-areas (Palerm 1990) can be distinguished: (1) a dry-hot flat savannah-dominated coastal region, forming an arid wedge between Veracruz's tropical rainforests; (2) an arid-cold strip of arid and semi-arid desert highland located at some distance from the Sierra's rains); (3) a rainy-cold region on the Sierra's heights; (4) a rainy-temperate strip with medium-height mountains, lying between the coast and the Sierra; (5) a humid-hot zone, with tropical rainforests, for the most part mountainous. Huehuetla, the municipality, is located in a highland zone contained within these two last climatic sub-areas.

2.4 LAND TENANCY AND ECONOMIC EXPLOITATION BY PRESENT-DAY TOTONACAS

This vast ancestral Indian territory gave way to the regime of small farm tenancies now predominant throughout the Totonacapan. The ancient Indian communal lands were severely reduced but a minimal part remained under the communities' control or was granted to individuals under the *ejido* regime whereby the cultivator could take possession of the land but without a legal right of transfer, as the Mexican state was the ultimate landowner. Other huge tracts of these ancestral lands have been consumed by large privately owned estates which are in effect illegal latifundia. In addition a few federal ecological reserves are also located here. Following the Mexican Revolution, the 1930's Agrarian National Parceling restituted a good amount of land to Indians under the terms of common or *ejido* regimes, (see below for an explanation of its meaning) albeit less than half of that sequestered before 1826. A new reform to the Agrarian Law in 1992 has brought the *ejido* regime to an end and put every plot of land into the land market (Toledo 1999). As a result, a minimal part of land in the Totonacapan is in the hands of Indians, and the majority is privately owned by *Mestizo* people.

Inside the Totonacapan's geographical limits, there were 181,000 Totonacas living in 1990 which was not even a third of the region's total population (Toledo et al 1994). Unless their historic importance is the point of interest, it is true to say that the Totonacapan is not the Totonacas' land anymore. In the words of one commentary, "49.1 % of the peasant-Indians who form part of the economically active population own not even one centimeter of land" (Patiño-Tovar & Castillo-Palma 2001; p. 422); this statement is particularly applicable to the Kgoyomes. Even if the exact figure may be in need of revision, it does indeed reflect the fact that, for around half the younger Totonaca population, they are facing a future where lands have become fragmented to the point where they can no longer support them. The other half may be considered fortunate as owners of rather small plots, but with an average size of only 0.5 hectares, it takes only one or two generations of partition between inheriting offspring for these plots to also become economically unviable, thus inevitably promoting migration. To top it all, many common lands are located on raised ground, in difficult terrain, and on steep slopes of cliffs along river canyons, or impassable ravines.

Most of these Kgoyomes who do own plots have around 0.5 hectares which are not formally regularised under the private property regime, and were more or less

evenly parcelled out from those communal lands that had remained untouched by the rulers of the colonial era and which were acknowledged by present-day national authorities. Indians almost never used to register their properties officially, a situation that has often been the cause of not infrequent disputes between neighbouring owners, as well as with the despoiling *Mestizos*. As a result, during the mid-1990's property legalisation was introduced by a national Government program with the aim of regularizing the Indians' position, but which as a consequence further ate into the common lands.

2.5 NATURAL REGIMES AND USES OF NATURAL RESOURCES

The Totonaca are a peasant society characterized by its "agrarian mode of natural resource use" (Gadgil and Guha 1995a and 1995b); as such, it meets the defining traits for such a society listed by Toledo (Toledo et al 2003; 1999 and 1994), namely:

(1) Predominant use of solar energy, mediated by use of firewood and agricultural by-products rather than fossil fuels.

(2) Small-scale crop production; therefore, they are usually petit-proprietors.

(3) High self-sufficiency, since peasant families (the production units) produce and consume most of their own goods.

(4) The family or the community is the usual workforce; salaried jobs are the least frequent and temporary when they occur.

(5) Multiple use strategy: complementary activities are performed by the families; multi-cultivation is the rule, diverse crops coexist on the same plot, based on either maize (*milpa*) or coffee (*kakapen*) plantations, but not both together because of their affinity to sun and shade, respectively. If available, different species

are farmed in altitude-specific plots; green horticulture is attended mainly by women, complementing the main plot where the chief staples are grown by men; complementary activities, including gathering forest products, poultry keeping, pork raising and apiculture, support the Totonaca smallholding.

(6) Greatest ecological productivity: the Totonaca peasant model consisting of a small property with an average area of 0.5 hectares and no access to either funding or alternative energetic and technological inputs tends to produce greater ecologic-energetic efficiency rates than the agro-industrial model (Pimentel and Pimentel 1979, Netting 1993). In fact, in spite of their very rustic techniques, traditional cultivation systems all around the world produce up to 20 % of the food supply (Altieri 1995).

(7) Lower workforce productivity: between 5 and 9 times less than the industrial model which has available fossil energy, investment funds and modern technology.

(8) The peasant mode of use unites objective knowledge with subjective beliefs obtained by empirical practice that has been passed down the generations, often for centuries and even millennia; unwritten, they must be transmitted by oral and intergenerational means, as a collective ability permanently shared with other local and regional producers.

(9) A sort of cosmovision, especially amongst the Indian populations, such as the Totonacas. In the words of Toledo (Toledo et al 2003): "...the peasant appropriation/production process is based on a nature's immaterialist vision inherited through tradition from a pre-modern and pre-industrial civilization, in which nature is a sacred living entity with which humans negotiate during the production."

Merchant (1987) recommended looking at human history from an agroecological perspective. Intra- and inter-group power relationships are decisive in the transformations undergone by societies, but that is not the whole matter; it is essential to take account of the basic relationship with nature. The particular history of a given society necessarily reflects its way of perceiving the natural environment and therefore its mode of using natural resources.

According to the nomenclature proposed by Escobar (1999), Totonaca culture historically corresponds not to the dominant industrial/capitalist nature regime that everywhere surrounds them, but to a socialized/domestic nature regime whose collective perception of the environment is characterized by both the bio-physic milieu of socialization and an integrated conception of nature-society.

On the other hand, in accordance with Gadgill and Guha's (1995b) classification of modes of natural resources use, the Totonaca correspond to agrarian societies which include an integrated agro-ecological model with multi-cultivational supremacy. The Totonacas have created six different micro-agro-systems (similar to Larson and Sarukhán's "landscape units", 2006) in order to facilitate their economic production:

1) The *milpa* (indeed, this is the Náhuatl term widespread throughout Mexico, not only in the Totonacapan): centered on maize, but more than a maize field, it is a complex bio-system and the organiser axis of Totonaca economic-social-cultural life (Pérez-Ruiz and Thacker-Moll 1994). Surrounding the family house, the rain-watered and sun-exposed field of maize usually produces the Amerindian triad of staple foods famous for being nutritionally well balanced (Cavalli-Sforza et al 1996): maize, beans and squash (a group of rather different cucurbitaceous items as gourds, pumpkins, courgettes and *chayotes*) complemented with chilli, sweet potatoes,

tomato, *quelites*, and other tender, green-leave plants, onion, coriander etc., and dozens of various medical and ornamental plants. It is also useful as a natural barrier to protect the household from the natural elements and also conceived as a restricted space in which to manage services and wastes. The *milpa* field amounted to 40.2 % of the cultivated area during the agricultural cycle 2000-2001 in Huehuetla (INEGI 2002).

2) Commercial farming: this kind of agriculture was imposed by the national government around the end of the nineteenth century; the Indians were ordered to grow first sugarcane and then cotton (Masferrer-Kan 2004). After the collapse of the sugarcane and cotton markets during the middle of the twentieth century, official help was focused on the production of coffee, pepper, citrus and other species to supply regional markets (Garma-Navarro *et al* 1992).

The Totonaca concept of the coffee plantation deserves special mention: the *kakapen* is ecologically constructed on similar principles as the *milpa* but is set in shade rather than sun. It centers on coffee but is also complemented with fruit and wild vegetables, and ends up being a powerful nature reservation for native plants and animals. Nowadays the *kakapen* represents a cultivated area larger than the *milpa*. These crops, including vanilla, brought some temporary prosperity for the people, whether landlords, farmers or day labourers, but commercial speculation and the bankruptcy of official programs have driven many producers to revert to their traditional crops or even to leave the land fallow.

3) Farming monocultures: backed up by commercial enterprise, large areas were developed to grow just one of these temporarily successful crop species; the government often assisted farmers with chemical fertilizers, funds and technical

supervision. However the outcome was negative for the speculators; except for maize crops, all the other crops continue in a state of economic crisis.

4) Wild and cultivated forests: whilst wild jungle and forests underwent a severe reduction of up to one half in the period from 1960 to 1990 (Mexico has lost in total 90 % of its original tropical forests; Toledo 2005), the cultivated forest had a minuscule growth. Nowadays, wild forest and jungle remain restricted to scattered patches not larger than a few hectares in communal or federal reservations, also mostly situated around abrupt cliffs, river bed environs and other unapproachable places. As limited as they are, they are notwithstanding of prime importance as reservoirs of species, resources for foraging on wild forest products and stocks of kindling and firewood, amongst other things.

5) Farming plots, domestic gardens and farming backyard systems: in which more than a hundred species of vegetables are farmed for food, medicine, fuel, and construction and ornamental purposes. It is also space in which to raise poultry and perhaps even a pig. Within this concept, we could include the multi-cultured coffee plantations during the agricultural cycle 2000-2001 in Huehuetla municipality when this crop accounted for 59.8 % of the cultivated land surface (INEGI 2002).

6) Cattle-raising areas: these are monopolized mainly by *Mestizos*, the Indians accounting for no more than 1 % of those engaged in this business. However, it is disastrous in its ecological impact: in thirty years, cattle-raising increased 119 % in the municipality of Huehuetla (Ellison 2001), devastating more than a quarter of its forest surface. In fact, cattle-raising has been the primary cause of deforestation and an engine for the dispossession of the Indian ethnos, which since the 1857 liberalist reform have lost about 90 % of their communal lands (Toledo 2005).

As with the rest of the Indian ethnos, the Totonacas have undergone a serious diminishing of their population and standards of living, at its most dramatic in the early colonial epoch when, by the sword, imported contagious illness, exploitative work loads or a ban on growing some of their traditional crops etc., their population was radically reduced to about 20% of the pre-Spanish size (Pérez-Ruiz and Thacker-Moll 1994). In the last few decades, its population has shown a net recovery (Ortiz E., Benjamín, 1990), but population size is still not yet equal to that before the sixteenth century.

2.6 THE PLACE WITH TWO NAMES: HUEHUETLA IN NÁHUA; KGOYOM IN TOTONACO

Huehuetla (a Nahua name) province is set in the tropical region of Mexico facing the Mexican Gulf, located in the North-East of Puebla State in the middle of the eastern side of the Sierra Norte of Puebla, between the parallels 20° 01' 48" and 20° 09' 12" latitude North, and the meridians 97° 35' 00" and 97° 40' 24" longitude West (Meza et al, 1990) beside the Veracruz state boundary (see the attached map in Appendix B). Huehuetla municipality pertains to the highlands of the Totonacapan, its altitude ranging between 300 and 1200 meters above sea level, with an average altitude of 650 meters (suitable for *robusta* and *arabica* coffee varieties) (Cordoba 1968).

Huehuetla town (also the main village where the Mayor and the Town council reside) started as a pre-Hispanic settlement founded by Náhuatl and Totonaca groups. Some people believe this was the old Totonaca town whose name was Kgoyom, "place of parrots" in *Totonaco* (the Totonaca language), and the reason why the aborigines are called "Kgoyomes".

2.6.1 Environmental setting

Covered by dense vegetation proper of both the remaining original sub-perennial tropical forests and coffee plantations, it has an abundance of tropical species, including precious woods such as white and red cedar, mahogany varieties, fruit trees, rare plant specimens, virgin jungle patches and a large array of endemic species where many wild animals dwell.

Some authors such as Ellison (2004) define Huehuetla's coffee plantations as a "cultivated-wild ecosystem" which has replaced the original flora, but contributes in a similar extent to forest canopy conservation. Usually, a coffee plantation is a fruit tree multi-cultivation intermingling wild, semi-wild and cultivated species such as orange, banana, pepper, and even vanilla. More than 200 plant species were catalogued by the Totonaca high school students during a botanical exercise in 2003, including grasses, shrubs, climbing plants, trees, fungus and so forth, as part of the "*kakapen*".

It is, as with the *milpa*, a complex biosystem whose many functions include being a native species' bank, a refuge zone for wild species - animals included –, a fruit orchard, at the same time one as it produces the aromatic berry. Finally, coffee plantations are also important because its agricultural cycle is conveniently complementary to maize, as much of their products are for people's diet.

As stated before, coffee and maize are extensively farmed in Huehuetla municipality. In the cycle 2000-2001, coffee and maize crops accounted for 59.8 % and 40.2 % respectively of the cultivated area (INEGI 2002). In passing it may be added that it is no exaggeration to say coffee and maize have both created the environment, in social and botanical terms and, at the same time, are themselves the creation of a communitarian society. The pre-Hispanic myth which explains human

beings as creations made from maize dough by the gods did not come about by accident.

The municipality's total surface area encompasses 5,996 hectares of uneven terrain with hard slopes and stony mountains. The weather is seasonal, but not extreme: hot in spring and summer with 36° C maximum, warm in autumn and moderately cold in winter (by nights about 8° C as a minimum). It rains all year round, with torrential daily rains from June to October in the evenings, and then a constant drizzle coming from the Gulf of Mexico from November to February; the driest and hottest weather occurs between March and May. The annual rainfall amounts to around 3,000-4,000 mm. (Soto & Garcia 1989; Cordoba 1968).

Given its topography, Huehuetla had been for centuries one of the 'refuge regions' (Aguirre-Beltrán 1967) for migrating Indigenous groups, which from pre-Hispanic times have had a marked preference for farming more than one plot at different heights in order to diversify their agricultural calendar, sowing a variety of crops so as to prevent either total loss in the case of climatic changes (Garma Navarro et al, 1992) or specific crop plagues. It also offers a means of producing a surplus against future emergencies or social commitments.

During the first decades after the conquest, a popularised version of Catholicism spread by missionaries successfully infiltrated the Indians' belief system. God and Christian saints were superimposed on the pre-Hispanic pantheon, creating a syncretic liturgy that has survived to the present day. So, the faith dedicated to the old gods and goddesses was channelled toward those more or less comparable Catholic saints, and their quotidian worship was duly taken up by the parishioners. It resulted in a helpful mechanism for mitigating the Indians' discontent, and ensuring control over the multitude. Clergy even offered laymen an opportunity of religious

service by means of the "sistema de cargos" (literally: "system of posts or duties"), a sort of hierarchical lay service program where one could rise through the ranks on display and achievement of merit. This came to be not only an ideological complement to political domination, but also a very effective channel by which to organise the community around the virtues of unselfishness, collectivism and cooperation.

In the course of time, an array of moral values and behavioural principles was condensed into an axiological canon known as "El Costumbre" (the custom), which is followed by traditional Totonacas in such a loyal way that it has become a cultural identity marker. In form, it is a very concrete set of rules of thumb, a vehicle for conformity wherein ethnicity, community, traditional attachments, inclusion of the diverse service vocations, natural conservation etc. have real meaning.

2.7 CENTRE AND PERIPHERY: AN INTER-ETHNIC CONFLICT OF INTERESTS

A municipality is the smallest administrative unit representative of the national state with full powers to govern on its own. Civil power and personal authority reside in the head town where the mayor, six town councillors, the police chief, a civil judge, an Indian judge, and all of their staff are located; such is the case of Huehuetla. Political power has almost permanently been in the hands of *mestizos*, therefore the *mestizo* population has concentrated in the main town under the mayor's protection and the centres of power; the Kgoyomes, conversely, have tended to spread throughout the municipal territory and to establish little villages called "communities", 12 in total, with a few hundred inhabitants in each, some of them looking rather like "rancherías" (hamlets), politically subordinate to the main town (Ichon 1973). Surrounding the communities in a much dispersed fashion, and placed in the middle of their plots of land, the peasants' huts complete the population spread.

For their part, the Indians have opted to be as far as possible from the reach of the richer classes. So, the assignment of territory traces a clear racial and economic division: the centre for the *Mestizos*, the periphery for the Kgoyomes. All along the countryside, this pattern is dominant: the upper class, the *Mestizos*, are the centre dwellers; owners of the large ranchos, the only ones able to sustain an animal husbandry business. Proprietors of larger 'fincas' (country estates), they can afford to farm extensive crops; owners of the wealthy commerce, trade companies and private houses equipped with modern facilities; in short, they are capable of reproducing this status and, finally, crown their work justifying themselves as being "civilised people".

Anyhow, the classic description (Aguirre-Beltrán 1992) is useful to explain this situation: Huehuetla, the main town, is the core, a cross-cultural site where predominantly Indians and *Mestizos* interact; the 12 hamlets or communities are the hinterland which constitutes, at the same time, the refuge region, wherein the Kgoyomes are entrenched to preserve their traditional values and accustomed patterns of behaviour, reluctant to engage in transformation to modern habits.

The Mexican Indians live on the margin of national society isolated from any real opportunity to improve their historic destitution. They are the poor, the vast majority of the population. As stated before, when they have a plot, this is not larger than 0.5 hectares on average. But about half of the Kgoyomes are landless "have-nots" and need to work as day-labourers for the *Mestizos* at an average of MP\$40 per day (about £2) without a contract, social benefits or guarantees of the payment itself.

In summary, the territory assignment pattern is another source of differentiation in the conflict of interests between those closest to power and resources, i.e. the centre-dwelling *Mestizos*, and the Indian periphery dwellers, marginalised from the means of empowerment and excluded from gaining access to sources of wealth.

2.8 ECONOMIC ACTIVITIES

Huehuetla's subsistence is to a large extent composed of a traditional economy whereby the Indian population maintains a deep level of intra-communitarian contact; however, it has, in addition, an increasing market economy with the Kgoyomes joining in cross-cultural trade with both the *Mestizos* from Huehuetla and outside merchants. For the Totonacas, money is a regular currency, although bartering and just giving products away is commonplace; labour exchange (*mano-vuelta*) and the giving of gifts without an expectation of a direct return (*apoyo*) can be observed daily; these are some of the habitual redistributive and reciprocal mechanisms (Perafán 2000).

As far as consumption is concerned, the communitarian spirit tends to even out levels of expenditure and consumption among Totonacas, thereby avoiding exaggerated accumulation. On the other hand, their ancestral belief that the land/Earth is a living being that belongs to herself —or better said, that owns people— prevents them from monopolising her or doing business on her just for *lucrum*. Finally, the people's historic memory of slavery and the current levels of exploitation experienced in their cross-cultural relations help them to establish a quite egalitarian relationship with their ethnic fellows.

Totonacas from Huehuetla, the Kgoyomes, are predominantly farmers in an absolutely traditional fashion. In this municipality, in the year 2000, 80% of people lived exclusively from coffee and maize production (INI 2004; Síntesis, regional newspaper, 15/10/2002; Alvarado Mendez 2006). Almost twenty years after the bankruptcy of the private and government coffee companies, the coffee berry price, when sold by the producer, was \$3 per kilo (Mexican pesos, \$20.5 per £1). Therefore, 70 % of the maize and coffee harvested goes to self-consumption (Cordoba 1968; Secretaria de Salud 2002).

In Huehuetla, 2,990 hectares are dedicated to maize production and 2,485 hectares to coffee, altogether representing 75% of farmland (INI 2004). The national census in 2000, as refined by some Government departments (INI 2004; CONAPO 2005), provides us with a summary of the socio-economic conditions in Huehuetla municipality: number of working people with a job = 4,254; of these, 2,094 (49.2 %) are without a formal salary or money income and 1,302 (30.6 %) earn less than the minimum official salary (roughly 40 Mexican Pesos daily).

As far as maize cultivation is concerned, at least once a year each of the crop species is sown at the *milpa* using the *lishatl*, a simple pointed digging stick made of wood, as the basic tool (Kelly 1952). The extreme unevenness of the terrain have prevented the Kgoyomes of introducing the plough and yoke to their farming procedures; tractors and other modern techniques and machines are equally impractical or beyond the economic reach of most people, so that as additional tools they only have the machete and the hoe.

Maize is grown following the techniques of their ancestors' which include slashing and burning wild patches, four-year breaks to the soil, and rotation of types of maize from a local pool out of 16 varieties. Farming is mainly organic, almost exclusively for family subsistence, or for local consumption. When there are any surpluses, these are invested in ritual or festive events, such as enabling the male head of the household to gain a post in the *sistema de cargos* —something that is economically expensive but socially relevant for Totonacas.

Older farmers remember that decades ago they used to get two good harvests a year, enough to have a surplus for trading or storing, whereas nowadays they only get one (typically from June to December). Should they strive to farm a second maize crop, they know the yield is likely to be two bad harvests in the year. Older people also recounted to this researcher the days when religious feasts were lavish and the celebration of *cargos* very splendid.

Providentially, the *milpa* affords a balanced supply of food, but to achieve this the whole family is needed to cooperate in production, especially for the six main stages, namely: the first weeding; sowing of seeds; the second weeding; piling soil around the stems; folding the dry maize canes; and finally, harvesting the maize cobs. The family, acting as the unit of production, shares the tasks, with women and children performing those that require neither male strength nor sharp tools.

Although lacking the commercial importance which it had in the past, the other extended crop is coffee. Before the mid-1980s, when the crisis in price nearly resulted in its abandonment, coffee cultivation was addressed to the external market in order to provide a cash crop, through speculator middlemen who took the lion's share of the market price: in spite of them, the coffee business was better for the Indians then than it is now, when the crop is mainly for home consumption. It is a good job that, except for the planting in the first year, the coffee fields do not require much attention other than picking the coffee berries and weeding once or twice a year. If a family owns more than one farm field, the rule is they have one of each modality: a *milpa* and a *kakapen*. Should the family lack farmland, men attempt to rent a plot for a fixed term to cultivate their *milpa*, paying in cash. Maize is the prime mainstay of the Totonaca diet, representing 80% of the food ingested (Cordoba 1968). Cooked in varied ways as *tortillas, tamales, atole, elote* etc. using flour from the 16 different maize species (of the 49 extant in the region) farmed in Huehuetla (Bellon 2002), *Tortillas* alone represent one kilo per person in average daily ingestion, equivalent to at least 2,250 calories (Blanco-Metzler et al 2000).

A number of species are farmed for their nutritional value, such as bananas, pineapples, citrus fruits and avocados, or for their commercial potential, such as pepper, peanuts, sesame etc. These are almost always integrated into the milpa and coffee fields in a mixed coppice. Beans, sugarcanes, peas and other species exist as monoculture crops, though they are rather exceptional. Poultry, pig husbandry, apiculture and women's selling of home-cooked foods are all useful additions to the farming profile and valuable supplements to the household economy. Cattle-rearing is rare among Huehuetla Totonacas, and other activities that were habitual in the past, such as hunting, fishing, or making pottery, are rather unusual now. However, in recent decades there are a couple of important areas of growth in their economy: firstly, migration to nearby cities, either permanently or temporarily, as domestic servants, workers or day labourers sending cash remittances to the household during their first years; and secondly, government assistance programs (Lozada-Vázquez 2002) to support children's schooling, or to recompense losses due to climatic uncertainty, which are delivered along politically partisan lines, causing very uneven impacts and dislocating customary community life, with consequences not yet properly measured.

2.9 SOCIAL ORGANIZATION

Far from the stereotype of Mexican Indians as indolent and apathetic, Huehuetla Totonacas take an intense interest in social life processes like political elections, religion and traditional rituals, social labour etc., as these occur in their communities. A very large number has set up an ethnic organisation, the *Organización Independiente Totonaca*, supported by up to 5,000 participants during some tough battles to win power in the municipal government, to advance their struggle for autonomous organisation and for civil and human rights, and to reverse the suffocating political control that lies in the hands of the *Mestizo* minority who monopolise access to material resources: by way of example, this researcher calculated that 5 families hold 57.9 % of all the land. Currently, they have concentrated on very emotive issues for recovering their ethnic identity, such as education and systems of government aimed at unifying the Totonaca nation independently from the local *mestizos*, but in the context of the Mexican polity (O. I. T. 1999; Sanchez Espinoza 1999).

Since public administration was snatched from their hands centuries ago and they have been excluded from any direct exercise of power because of the master's fear of revolt, Totonacas (in Huehuetla and everywhere) had limited themselves to building the religious "sistema de cargos" (system of posts) mentioned before. This became the customary channel through which to rise in social ranking, by carrying out two kinds of altruistic work - *servicio* (social service) and *apoyo* (supporting) - and in contrast, one kind of cooperative work - *mano-vuelta* (mutual aid) which is a kind of contract between individuals who each formally acknowledge the effort given as forming part of a reciprocal exchange. These cooperative / communitarian behaviours are discussed in more detail below.

Some authors (Kelly 1953; Masferrer-Kan 2004) stated that, in times past, political and religious organization were closely overlapped and the *sistema de cargos* functioned for both kinds of business, except that on the civil front, officialdom never permitted an Indian to climb beyond being a postman, policeman or even a staff aide.

In spite of this adverse situation, Totonacas from Huehuetla consider themselves as totally Mexican: ten out of ten formally interviewed individually in the communities could not conceive of splitting their Totonaca identity from their Mexican identity. Even more, they asserted their unconditional respect for and promotion of the legal institutions of the country.

2.10 NOTEWORTHY COOPERATIVE BEHAVIOURS

The constant and varied forms of communitarian and familial work practised by Totonacas, including reciprocity or wealth redistribution carried out under voluntary or obligatory modalities of cooperation (Zolla & Zolla- Márquez 2004), deserve special mention. Given their difficult and constrained socio-ecological condition, cooperation becomes a necessary survival strategy. By way of example, in the last seven years, the Huehuetla municipality has been flooded twice by wayward seasonal hurricanes, the roads destroyed and groups of people isolated inside their communities and left forsaken. Not one casualty has been registered thanks to the fact that the affected people were willing to share their food stocks. Of course, the fact that these aiding behaviours are prescribed by *"el costumbre"* is some kind of guarantee that they will happen, since the whole community takes part in

surveillance to ensure that everyone bears a share of the cost. The following behaviours should be mentioned:

a) Servicio ("service") is the moral obligation to do a number of days' of public service work for free; this may include maintenance of public services, repairing public paths, roads, streets and buildings, cleaning churches, attending religious services, taking catechism instruction, teaching in community schools and the creation of new facilities. Thanks to this sort of cooperation, a large Totonaca "army" was able to accomplish a number of heavy-duty civic enterprises that included laying electricity and fresh water networks, building the local hospital, and paving streets in the main town and surrounding communities within the space of just six years (1993-1998). Basically, *servicio* is a labour system organised by ethnic leaders and those who enjoy social prestige, and it mainly involves males aged 16 years and over. Failing to take part has a harmful effect on the person's reputation and expectations of future reciprocation within the community; so, as far as it could be observed, almost everyone fulfils most of the *servicio* tasks that they are asked to do, being aware that, in the long term, it is the community's members that are the beneficiaries (see appendix C).

b) *Apoyo* (literally, support) is the most clear gesture of fraternal solidarity addressed towards people in need that openly make a request to the community for help such as food, labour, money, special assistance, training or care etc., either for themselves or for their relatives. Sometimes helpers are anonymous or discreet, but sometimes a great show is made of the occasion. Sometimes there is a big donor, and other times everybody provides a small share and the collective action meets the bulk of the need when put together. But whatever the case, the contributions are at the donors' expense, with no obligation on the beneficiary's part to repay the favour.

Contributions are always made in a voluntary way, although there is probably at play an extended deep-rooted belief to do with the tutelary concept of the relationship between man and the environment (Ellison 2001): almighty beings, like the "Masters" of the harvest or rains, own and provide every natural resource, whether it be a plant species, a natural element or health and wisdom; therefore, the possessor is just a temporary holder of these benefits, and duty-bound to give the assets away under penalty of punishment.

c) *Mano-vuelta* ("hand repayment") is a frequent sort of cooperation among neighbours, distant and in-law relatives, friends or business associates; it is especially useful for tackling tasks that are heavy, time-consuming or need to be completed in a hurry. The task is discussed beforehand and agreed in advance by strict consensus: helpers are formally enrolled by name, and dates, means, tools, time, sites etc., are agreed and scheduled. Once initiated with the lead member satisfied, the job becomes compulsory and the tally is completed when the last contributor plays his part. Meals are provided by the beneficiary during the work. Each participant can then expect the beneficiary to return a similar favour. It is more frequent among men, although, not exclusive to them, and usually involves work traditionally specific to each sex. The number of enrolled people ranges from two to six in order to make its management more feasible, but older men state that in the past it was more popular and the number of individuals involved in a given activity sometimes exceeded 20 people (see appendix D).

2.11 NORMS OF SOCIAL CONTROL

Indians, in general, have assimilated foreign ideologies to different extents: in some cases synthesising it into a new one; in others superimposing a few of the new

elements in a syncretistic mixture; in some even discarding their own cultures without any real replacement so as to create a cultural void. Whichever the case, their development was continually frustrated and their cultural baggage destroyed. The Indian Cosmovision was satanised, gods and laws uprooted, science and arts forbidden, and values and principles left destitute, giving rise to the Indians' mental dependency and social subordination whose ravages are still in force. "Impassive" and "stoic" are some of the recurrent epithets used to describe the Amerindians' stance, particularly that of the Totonacas' when facing the dura lex and the proscriptions of national society. In total helplessness, the only fulcrum of survival for a ruined people has been their communitarian spirit; therefore, being a group member and taking extreme care of intra-group relationships became a matter of life and death. Working inside the limits marked off by the masters, and making the best of their cultural heritage, in the course of time a set of commands condensed that, on the one hand, safeguarded common memories as an ethnic identity signal and, on the other hand, acted like a lubricant to social interaction that eventually became adapted as "el costumbre".

At present, thanks to their organised pressure in the past, the municipality relies on an ethnic court wherein legal problems involving Indigenous individuals are dealt with in the Totonaca language based on, in the first instance, *el costumbre's* prescriptions as interpreted by a member of an acknowledged Council of Elders acting as a judge. They expect that those who prey on and cheat them will suffer the official sentence as well as the community's reproach.

The impression this people have produced on a dozen colleagues doing field work in various areas since my first arrival to the site —all sympathetic but at the same time forewarned of the danger of anthropological romanticism (see Lee

1984)— is that of being before a people with an acute respect for their own kind, with the deep sense of spiritual reverence of a God-fearing people, that helps to create an environment which fosters the moulding of attitudes in order to live in harmony inside their social circles. Furthermore, there is an understanding that their preferences for peaceful solutions to problems, even if the consequences are not advantageous, have helped see them through difficult times. Almost always they follow the folk proverb that recommends "coming to a bad agreement instead of winning a good lawsuit".

Viewed from a different cultural perspective, their prudence and long-lasting passive resistance might be taken as an exasperating naivety and absence of will. On the contrary, such intimate attachment to "*el costumbre*", and their reliance on a sense of justice wherein law and morality are contained, seems more like a different strategy based on an indirect, collectivist and progressive coordination, wherein rewards and punishments are social issues to be administered by the community, as well as personal reactions to misbehaviours or fine acts.

In this same tone, it might sound bizarre to hear them saying they are happy and satisfied with their way of life, as they do in fact say, in spite of the extreme poverty, social exclusion and racial discrimination suffered both from society at large and from the *mestizos* locally. On almost every occasion they are cheated, being systematically resigned to pay the costs in the short-term by not taking direct action provided that they gain some kind of reparation in the future. They really believe, apart from justice in the next world, in the inexorable progress of a balance principle to every circumstance. Beyond a superstitious belief in ultimate destiny, their belief is based on the feeling that a social atmosphere is woven like a net, with collective

acts of indirect reciprocity (Alexander 1987) producing multiple effects on each person.

2.12 KINSHIP

Among the Totonacas from the highlands, the Huehuetecos included, relationship is cognately traced and filiations are bilateral (Harris, 1993) with patri-locality, virilocality and neo-locality being predominant (Masferrer-Kan 2004). The kinship links are assiduous and strong, suggesting that the Indigenous community is built on both a biological basis and a territorial one, with affinity as an extra ingredient. Since the smallest biological unit is the nuclear family, the homestead or family plot is the minimum territorial unit (Zolla & Zolla-Márquez 2004). The Nahuas from Cuetzalan, neighbours and, in many cases, the formers' co-residents, have a metaphor to describe their kinship understanding as "ego looks at him/herself as if s/he were a spider standing in the centre of its own kinship web, the web also being occupied by spiders like ego, each looking at both the bystanders on the inside and also the outsiders" (Arispe 1973: 138). This is much how the Totonacas' view kinship: for them, society is more akin to a domestic group formed by relatives and allies as a corporate front acting cooperatively and sharing all the important resources like land and work. Usually incomes are managed in just one budget, just as there is normally only one hearth per home; those who want to cook and eat on their own must live below a different roof.

At the centre of this lies the nuclear family, the functional unit in whose bosom is organised not only the division of labour, but also material and affective interdependence and the exchange of sympathy, loyalty, obligations and rights. Often, the nuclear family takes part in the rituals, beliefs and religious practices, propelling one

member into the *cargo system* (see below) to act on behalf of all. Basauri (1990) has noted that in the Totonaca language there are specific words to designate each of the sibship members by sex and birth-order. From my own experience, I knew about four different words to designate the eldest son and the eldest daughter, the youngest son and the youngest daughter.

Frequently, some other relatives cohabit in the household for large periods giving rise to many extended families, especially in the communities: in some cases, a cluster made by more than one nuclear family; in others, a nuclear family enlarged with in-laws and their children, ritual relatives (such as *compadres*), a godchild, or just a familial friend.

In the past a combination of patrilocality and virilocality was dictated by *el costumbre;* the sons, their wives and offspring stayed in the family household in the expectation of eventually inheriting the site, usually building extra rooms as necessary onto the old house but sharing the roof and the kitchen hearth. Nowadays, it is a bit different: in gross terms, two-thirds of newly-wed couples go to live with the groom's parents, but typically a new house is built separate from the original one, wherein the new family lives independently. However, one third of newly-weds live separately from the parental homestead right from the very beginning, and the number of cases of uxorilocal and neolocal residence has been increasing steadily with time. My own enquiries suggested that this was the result of migration or the increasing scarcity of land on which families could live together.

Inside the family, authority depends on context. Certainly, as is usual in a patriarchal system, a man is usually head of the household, but every wife in a household makes all kinds of decisions related to daily life, the household economy and the children's destiny, some times barely consulting with her husband. However,

when it comes to who should inherit the family plot —perhaps one of the most critical decisions anyone makes in his/her lifetime— the decision is ultimately made by the father, albeit in the light of the opinions expressed by the mother and the older children, in that order.

Since kinship is always cognately traced and exogamic bilateralism is frequent, there is little evidence for the presence of either lineages or clans (Arizpe 1990); instead, kinship more often reflects the extended or in-law family and neighbourhood links.

A wide set of circumstances make monogamy the predominant mating arrangement: these include the fact that they are restricted to their small community territory and the fact that their deeply rooted way of life is inculcated through traditional education, part of which is Totonaca Catholicism with its strong emphasis on monogamy (Masferrer-Kan 2004). Moreover, given their characteristic subsistence economy, the opportunity to generate sufficient economic surplus to pay for extra partners is limited. These factors tend to militate in favour of early marriage —around age 20 for women and 22 for men, on average— a very close and complementary style of marriage and a lifelong coupling (many of which can last for as long as 50 years).

2.13 KNOWLEDGE, RITUALS AND BELIEFS FIVE CENTURIES AGO AND TODAY

Totonacas were at the vanguard of Mesoamerican knowledge 1,200 years ago; vestiges of this, in their current systems of beliefs, values and knowledge, still underpin their Cosmovision (López-Austin 1990). Theirs was an agricultural understanding, wherein the environment is fundamental and unified, not split between nature and culture, wilderness and cultivated; to their holistic view, the

difference between individual and society seemed irrelevant. All of this was contained in a system of traditions and customs that had the moral force of law. Rather than detail every aspect of their cultural and physical universe, I list the following as the most important:

a) 'El Costumbre': Every behaviour norm and every moral precept for individual and collective life is integrated into a system that they call 'El Costumbre' (from the Spanish, "la costumbre", literally meaning "the custom"). More than just a set of ritual traditions (González-Torres 1991), more than a mere formula for executing usages and customs in the correct manner (Masferre-Kan 2004), El Costumbre is in large measure a corpus of norms and, as such, it has the character of authentic Indigenous law (Zolla & Zolla-Márquez 2004). But, it is also a summary of empirical rules of thumb that preserve the ancestral wisdom about what ought to be done at every moment so as to meet with the widest popular consensus, precisely because it had been so practised with little variation since time immemorial.

b) Traditional medicine: inherited as communitarian wisdom, traditional medicine is practised by the adults in the heart of the household where healing is effected by the use of herbal remedies and souls are cleansed so as to purify them from evil spirits. Midwives (both male and female) are another kind of semi-professional, but empirical, practitioner of traditional medicine. A few conventional doctors (mostly those with rural practices) combine the two former aspects with conventional medical practice and present themselves as alternative practitioners belonging to an allopathic branch of medicine. Finally, a few individuals discreetly practise shamanism as a bulwark against psychosomatic magically-caused illnesses such as fright, evil eye, and the evil influences of ghosts (Kelly 1953). The sweatlodge (*temazcal*) was once very common as a form of healing (particularly for

women who have just given birth and for the complaints of old age), but has now almost disappeared; sweatlodges can still sometimes be found beside family houses, but they are invariably untouched.

c) Ethno-agriculture: Contrary to the popular view, Kgoyomes use slash and burn techniques only very cautiously to prepare the soil for sowing because of their deep respect for "Mother Earth" (Sánchez-Espinoza 1999). Chemical fertilizers are out of their budgetary reach so instead they opt for less aggressive, traditional forms of ethno-agriculture —a kind of agro-religious output containing a strong ecological content. The ground is prepared with organic fertilizers and *lombricomposta* (a mixture of ground vegetable matter and earthworms) and after an appropriate ritual for the use of the land, seeds are sown using either family labour or friends recruited through *mano-vuelta* (see above). Usually, the *milpa* system is employed whereby different species are inter-sown in the field and/or rotated by seasons, a practice that often gives the ground a breathing space each year in which to recover its productivity. A thanks-giving ritual to the crops' patron, the town's patron and Mother Earth is performed annually and still attracts large crowds. Even so, the older men state that, in the old days, rituals used to be practised much more fervently.

d) Totonaca Catholicism: the result of a syncretic mixture between local indigenous cosmovision and popular Spanish Catholicism to create an intricate hybrid. Every aspect of nature in their original cosmovision became identified with a Catholic figure. *Kinpuchinakán*, the universe-creator in Totonaca mythology and identified with the sun, became synonymous with God the Father and given substance in the Blessed Sacrament. *Kinpaskatsikán*, the Mother Goddess identified with the Earth/land/soil, became synonymous with Santa María de Guadalupe. Similarly, Saint Salvador, patron saint of Huehuetla town and of good-harvests,

became identified with the traditional Lord of forests and rain, who was also at the same time taken to be Jesus Christ.

The most important feasts in the year are the Catholic saints' name days, in particular the Virgin of Guadalupe, Saint Salvador and All Souls' Day. These feast days are associated with traditional ritual dances such as the famous *Volador*, *Negritos, San Migueles, Quetzales, Moros* and *Cristianos*, and *Huehues*, often involving very large crowds gathered in their honour. The greater part of the expenses and organization for these feasts are paid by the *mayordomos* in association with their extended families as part of the *sistema de cargos*, although the musicians, dancers, organisers of fireworks and other performers taking part in the rituals do it for several days long for free.

e) The *sistema de cargos* (literally "system of posts") is the structure wherein the men hold various posts in a hierarchy dedicated explicitly to the organisation of the religious rituals of communitarian life, as well as to some of the more political aspects. Some authors have noted that, during the period since Mexico gained independence from Spain (i.e., since 1857), the *cargos* ' political content has been suppressed by the government and its remit confined exclusively to the religious sphere (Masferrer-Kan 2004).

The *cargos* entail a hierarchical schedule of altruistic community service, wherein the highest accrue greater authority and reputation (Cancian 1965 and 1996). In Huehuetla, service starts at about the age of 16, when the first step consists in being a *topil*, then a *fiscal*, later a *fiscal mayor* and finally a *mayordomo*. The first two are compulsory and, once fulfilled for a year each, qualify a person to be a member of the Council of Elders, if they so wish. However, since these *cargos* are highly onerous (both in terms of time and expense) and are unpaid, they have been

the Indians' exclusive focus of interests. In practice, a role division has taken place: the *Mestizos* go only for the very well paid political posts and are never involved in *servicio* duties for free; the more onerous and less rewarding posts are left to the Totonacas.

As a *topil*, the youth helps the people in charge of the church (the priest, the verger, the *mayordomo* or the *fiscal*) to clean the church, run daily errands, ring the bells and serve at mass etc.; the *fiscal*'s job consists in being the priest's assistant, organising all the church tasks. Each *mayordomo* is a host for one year of the main saints' festivities: that means paying the costs for the annual feasts, including decorating the church for the masses, providing offerings of wax-candles and ornate wooden crosses, money to pay the folk musicians, and food for the traditional dancers, the people in the *cargos*' hierarchy and the authorities, as well as neighbours and guests in general —sometimes amounting to hundreds of participants.

Arizpe (1990) reported that in a neighbouring Náhuatl town with a bigger population than Huehuetla, there were 19 different *mayordomos* appointed in 1973, and those responsible for the most important saints' feasts each spent the equivalent of USD \$1,770. In Huehuetla town in 2003, six *mayordomos* each paid about USD \$1,500 in cash for the expenses associated with their offices during the year, and that did not include everything provided in kind from their own and their relatives' stocks (possibly as much again in real monetary terms). *El costumbre* does not expect women to participate in the *cargos*, although, during the last few decades, *El costumbre* has increasingly become a female role in Huehuetla, where they serve as teachers in catechism class, as assistants at the mass, as readers of psalms in ceremonies and as assistants for the *fiscales*' and *mayordomos*' tasks. Nonetheless, to my knowledge, a woman has never held a *cargo* in her own right in Huehuetla.

f) Craftsmanship: Totonacas do not make major pieces of art anymore; however, they engage in various forms of utilitarian craftsmanship in almost every household. These include weaving cotton textiles for women's distinctive everyday garments which signal ethnicity and marital status; very beautiful embroidery; very elementary pottery for kitchen utensils; wax-shaping for ritual purposes and religious motifs as part of the votive offerings in church; some basketry, woodworking and the weaving of the small dry pods of vanilla, symbolic of this region.

g) Music: ritual music played with cane flutes and small drums to accompany traditional dances based on pre-Hispanic patterns for religious feast day celebrations. Also nowadays, *Son Huasteco*, a form of *Mestiza* music performed with string instruments adapted from European shapes, rhythmically vibrant with humorous lyrics, is becoming ethnically representative

h) Speech and legends: A feature of the Totonacas is that they primarily travel on foot, and are much given to stopping and chatting with passers-by. Indeed, Totonaco is and has always been an oral language, having only recently been transcribed into written form using the Latin alphabet, and was broadcast for the first time only about 20 years ago. Therefore poems, stories and legends were always transmitted by word of mouth and there is still great enthusiasm for doing do, for example, during just my relatively short stay with the community, I was told stories about the creation of the universe, the birth of the vanilla pod, the nature of thunder, the origin of Tajín, their ancestors' migration from a lost island in the Atlantic Ocean, and the gift of fire.

CHAPTER III METHODS

3.1 THE SAMPLE

The scope of this survey is the indigenous people of reproductive age from the municipality of Huehuetla in Puebla State of Mexico: the Kgoyomes, as they call themselves, pertaining to the Totonaca ethnos. The operational criteria for inclusion of a subject in the sample were (from a-f): (a) the subject lives in any of the 13 communities, i.e., the inland villages or hamlets of the municipality or in Huehuetla the centre, (b) the individual speaks Totonaco as his/her mother tongue, (c) he/she identifies him/herself as Totonaca, (d) he/she is older than 16 years of age.

Two more criteria were deemed necessary in order to classify the subjects in any of the three sub-samples: (e) reproductive status, i.e., having children (at least one child alive of any age); otherwise, he/she was taken to be non-reproductive. From this last non-reproductive group, two sub-samples were then formed: only nonreproductive people, made up by, on the one hand, some sterile and pre-reproductive couples, including newly-weds, and on the other hand, many young people from 16-19 or just over and, for this reason, living in the household as economicallydependent on their parents. Additionally, a non-reproductive group who were single and in possession of property or goods which eventually would be bequeathed to an heir was selected; this was because their profile made it reasonable to ask specific questions about the manner for giving away assets when the more logical answer of choosing their children as inheritors was precluded. As a supplementary consideration aimed at organising the preliminary field work and becoming more familiar with the local backgrounds, about twelve people in charge of an ethnic leadership were asked to be my key informants just for the ethnographic sections. In summary, the whole sample is composed of three sub-samples: reproductive, nonreproductive and non-reproductive able to bequeath. The data were gathered by means of a spoken interview, the answers to each question were written down on a paper questionnaire, including general details, reproductive life-histories and cooperative behaviours of a random sample of 821 individuals aged 16 years upwards. Details of demographic and social backgrounds, to contextualise people's situations, are summarized in Tables 3.1 and 3.2.

3.2 GATHERING PROCEDURE

The survey was carried out between February 2003 and January 2004 in 13 different locations —the head town and the hinterland communities— imitating the procedure of an official census, which is one of the survey events with which the people are familiar, trying as much as possible to stratify representation according to population density; namely, in the larger communities (such as Vicente Guerrero, Cinco de Mayo or Centre Huehuetla) there were proportionally more interviewees. We included men and women, young people and adults, single and married, reproductive and non-reproductive. I was assisted by about 90 boys and girls aged between 15 and 22 years old, who were students of the ethnic high-school Centro de Estudios Superiores Indígenas Kgoyom (CESIK; Centre of Higher Indigenous Studies Kgoyom). All of them were bilingual in Spanish and Totonaco, this latter as their mother tongue, except a couple of them, who were Náhuatl-speakers. The students helped not only as translators and as guides, but also with the form of the questionnaire wording, mapping the sweep of the collection areas, access paths and other logistical items for the organization of the data collection. Because Indian people are kind but shy, the students were the "guarantors" in order to get people's cooperation.

	Α	B	С			
	Full sample	Reproductive	Non-reproductive sub-sample (32.1 %)			
		sub-sample				
		(67.9 %)				
	Subjects aged 16 to 87			Able to bequeath		
	mean: 39.71			(subjects possessing		
	mode: 17			assets to bequeath)		
N *	821	514	180	109		
Males	380	214	108	52		
	(46.3%)		(60%)	(47.7)		
Females	441	300	72	57		
	(53.7%)		(40%)	(52.3)		
Coupled	530	486	11	20		
	(65 %)	(94.55%)	(6.1%)	(18.4%)		
Non-coupled	261	7	166	86		
	(32%)	(1.36%)	(92.2%)	(78.9%)		
Widowed	19	Widowed and	Widowed: 1	Widowed and		
	(2.3%)	separated:	(0.6%)	separated: 3		
		19		(2.7%)		
Separated	5	(3.69%)	·	-		
	(0.6%)					
Undefined	6	2	2			
marital status	(0.7%)	(0.39%)	(1.1%)			
With		262	· · · · · · · · · · · · · · · · · · ·			
grandchildren						

Table 3.1 Demographic and bio-social characteristics of sampled individuals

* A number of 18 subjects gave only partial information not enough to make a clear profile of them. Their answers were not included when a discriminative analysis was done

On Saturdays, when the students were on leisure days, a collective journey by about 20 interviewers coordinated by me and guided by the most seasoned guides in the local paths and population locations was made to the area, taking in every house and farming plot to locate men and women, respectively, asking them to take part as informants. Also, every pedestrian we came across at random on the roads and paths of the area was asked to answer our questions. Numbers of subjects were found by knocking on the doors of some small villages, bumped into on the streets and found in shops, public spaces, ethnic assemblies or large-scale gatherings.

Table 3.2 Distribution of frequencies and percentages of the sampledindividuals by sex, age decades and marital status

Age	Men			Women					
	Single	Married	Widowed	Separated	Single	Married	Widowed	Separated	%
16-19	58	1			38	1			12.6
20-29	50	22			38	35		1	18.8
30-39	18	37			12	74	3	1	18.7
40-49	10	47		1	14	81	3		20.1
50-59	5	55			8	56	3		16.3
60-69	4	45		1	1	22	2		9.7
70-79		12		1		1	6	2	2.8
80-89		2		1			1	4	1

As the other main procedure, after school during the week, this researcher, accompanied by a couple of students, a male and a female, used to visit their relatives, neighbours and acquaintances' houses to apply a questionnaire to them.

3.2.1 THE QUESTIONNAIRE

All the 816 individuals were interviewed by means of a questionnaire written in Spanish, but translated into Totonaco by a student assistant at the interview. The whole questionnaire in its final version, after being piloted two times consists of five parts (see Appendix A for the original Spanish version and an English summary):

(A) General details: 44 questions

(B) Items to reproductive people: 60 questions

(C) Items to non-reproductive people: 52 questions

(F) Items to ethnic authorities about the people's customs: 8 questions

(H) Items to unpaired people in possession of property: 26 questions

There were 190 questions in all comprising 800 categories.

The first part of the interview requests general details of everybody. The second part was dispensed according to the characteristics of the interviewee, either reproductive or non-reproductive and individuals with the capacity to bequeath.

Part A encompasses the following issues by way of a methodological control measure: residence, language, sex, age, civil status, and reproductive history; and then job, household composition, helping behaviour history of the respondent and some of his/her migrated relatives, their own education and training backgrounds, and that of his/her siblings, among others.

Part B, given just to reproductive individuals, is focused on reproductive lifehistory and helping behaviours: from marriage age, chore duties, offspring's traits (children's and grandchildren's if any), women's nurturance habits such as breastfeeding, still-births, some parental traits, and cooperation experiences.

Part C, given just to non-reproductive individuals, is focused on issues such as reasons for being single, wedding plans, 'helping at the nest' behaviour, opinions

about sexual relations, own and opposite sex preferences, attitude towards parenthood and goals in lifetime.

Part H was constructed only at the end of the fieldwork time, addressed to single non-reproductive individuals. It probes issues such as economic status, giving support behaviours in cash or kind, differential altruist behaviours according to sex, age, reproductivity or relatedness of the recipients; memories of personal gifts, and, also, his/her preferences as a donor. Only 115 individuals were given this questionnaire.

Since part F was included to interview key subjects to contextualise the survey work and to standardise the concepts in the questions, it consists of wide-ranging questions referring to customs, beliefs and usual attitudes of the Kgoyomes.

As a consequence, since part A was invariably included as the first one, the actual combinations of the questionnaire when applied were: A+B, A+C, A+F and A+H. Although parts D and E were also composed, they were not used. Table 3.1 reflects the numbers of subjects to which the questionnaire in its different sections was applied. The questionnaire, in any of the modalities, took about one hour to be completed, and the procedure to get an informant was: firstly to ask for his/her informed acceptance, informing him/her that it was a kind of voluntary survey similar to a census —since Totonacas have taken part in such practices in the past—and that we had the permission of the Council of the Elders and the chiefs of their ethnic organization (the O.I.T.) The answers given in Totonaco were filled-in in Spanish by the interviewers and, following completion, the participants were thanked and informed that the way their help would be returned was by the researcher offering unpaid teaching service at CESIK, their ethnic preparatory school (high-school level).

Answers to the questionnaire were given in a spontaneous form and the content was recorded simultaneously and word-for-word from the first hundred interviewees. Afterwards these were incorporated as answer options on a multiple choice form. Once the first hundred interviews were completed, the questionnaire was improved by adding overlooked questions and optional answers taken from the more typical replies. This procedure was repeated at the time to amount to 500. Consequentially, most of the questions came in a multiple-choice style.

The fieldwork was scheduled in two cycles:

(1) A training period which lasted from October 2002 to February 2003. The purpose was both to deliver training for my guide-translators and myself, to gather the first hundred interviews by means of a pilot test, and to check the questionnaire.

(2) The main part, from March 2004 to January 2004. During the week, a small mixed team composed by different male and female guide-translators (about two or four students and I) visited the people in their house or plot at isolated huts to apply the questionnaire as it was described in the last section. Once a month, according to the guide-translators' spare-time availability, the larger hamlets were scanned by a large mixed group (between 20-40 male and female students and I at the same time).

3.3 SUB-SAMPLES AND FREQUENCIES FLUCTUATIONS

The questions in part A were directed to the whole sample in general and therefore the number of subjects rose up to 816; other questions were specifically directed to the non-reproductive sub-sample (parts C and H) so that the count of answers drastically diminished.

The vast majority of the Kgoyomes over 20 years old are married and have children; so searching out interviewees at random necessarily meant to collect a

greater sub-sample of reproductive people to whom were applied parts A and B of the instrument. Subjects under 20 years were only included if they were older than 16, and they are not quite numerous in their neighbourhood; from there the numbers of 552 reproductive subjects and less than the half for those non-reproductive, within the results. Obviously, in some sub-samples a certain number of questions did not apply and that was one of the reasons for the frequencies to vary.

On top of that, a long history of exploitation and mistreatment from foreigners and local *Mestizos* against the Indians in general have made them somewhat distrustful who, at the least signal of an intrusive question, turn to silence as a logical defensive mechanism. In addition, the intention of many questions became bothersome to certain groups of age, gender or occupation; for instance, women were more sensitive to questions dealing with sexual behaviours; some men were susceptible to questions about their incomes and some women to questions about their children's illness or stillbirths. Being honest, definitively, some questions were inherently irritating in their socio-cultural context. That is why in our records there were a huge number of "don't know/no answer" missed values that may explain together with the demographical reason from above the dramatic fluctuations of our numbers.

3.4 DATA ANALYSES

Data were tested on several analyses using SPSS versions 11, 14 and 15 for Windows; particularly, for normality the Kolmogorov-Smirnov test was used (Field 2005; Kinnear and Gray 1997; Ferrán Aranaz 2001 and 2002). When data were not normally distributed, non-parametric tests were used as is specified in every test. The significance of the tests was set at no less than a value of p < 0.05.

3.5 RESEARCHER'S STANDPOINT

As a final comment, it should be mentioned that as a *Mestizo*, I have a share in the three components which comprise the national population of Mexico: the Indian, the European and the *Mestizo*; I have personal experience of what each represents and the differences between them, which does help to avoid to a large extent an eventual ethnocentric deviation originating in my personal background. As a researcher, I consider myself trained and skilled enough so as to be alert to the acknowledgement of universal patterns, and the cultural ethnic specificities behind the studied phenomena, and seek to the utmost degree never to impose my personal ethnocentric mental habits (Harris 1993).

CHAPTER IV RELEVANT ASPECTS OF THE KGOYOMES' LIFE-HISTORY AND FAMILY ECOLOGY

4.1 SOCIO-DEMOGRAPHIC CONTEXT

According to the 2000 National Census, there were 16,130 inhabitants in Huehuetla and its environs, distributed in the following pattern: (1) a considerable proportion dwelt in scattered isolated houses or in small hamlets in the middle of coffee plantations or forests; (2) a second significant proportion lived in eleven semi-rural settlements not larger than a few hundred people each (these are Cinco de Mayo, Xonalpu, Francisco I. Madero, Lipuntahuaca, Vicente Guerrero, Leakgaman, Chilocoyo del Carmen, Chilocoyo Guadalupe, Putlunichuchut, Putaxcat, Kuwikchuchut); (3) about 3,100 people, the great majority of whom are mestizos, lived in two larger towns: the municipal capital, Huehuetla, itself with 1,615 inhabitants, and San Juan Ozelonacaxtla (Enciclopedia de los Municipios de México 1999; Maldonado Goti, 2002). In all, the municipal population density amounted to 269.01 inhabitants per square kilometre.

Table 4.1 shows the linguistic (and ethnic) make-up of the Huehuetla municipality. The population comprises 96% ethnic Indians, of which 95% are Totonacas. Of these, nearly half speak only Totonaco. Since Spanish is the national language of both education and the political process, many of the Totonaca are clearly excluded from many of the processes of national citizenship.

Thousands of Kgoyomes have organised an ethnic association created to fight elections for local government office, to promote aspects of their ancestral lifestyle (organic cultivation or herbal medicine, for example) and, in the long term, to reconstitute the Totonaca nation in an effort coordinated with Totonaca groups from neighbouring municipalities. In this context, it is interesting to note that Huehuetla's

Council of Elders —one of the vestiges of the ethnic authorities they used to have long ago, reinforced today by the religious structure for the system of *cargos* (see Chapter 2)— is acting to guide these social processes by means of persuasion. Even though it has no formal empowerment to do so, it nonetheless has considerable community moral support.

Huehuetla is 100% a rural municipality. On the official scaling for marginalisation, each of the Huehuetla communities has an index of 1.815, which is considered a 'very high degree of marginalization'. Of the 217 municipalities in the Puebla State, it is the 11th most marginalized: 8 out of every 10 of its residents live in extreme poverty (Serrano-Carreto 2002).

Ethnicity:		Mestizos			
	Totonac	as:	Nahuas:	Other:	
	15,382 (95.36 °		157 (0.97 %)	10 (0.06 %)	581 (3.6 %)
Spoken	Monolingual	Bilingual		<u> </u>	
languages:	Only Totonaco	Totonaco & Spanish	Náhuatl		Only Spanish
	40.3 %	59.7 %			
		3.6 %			

Table 4.1 Linguistic composition of Huehuetla municipality *

* Source is the author's own database

In the municipality 2,173 women aged between 15 to 49 years of age were interviewed for the 2000 National Census: between them, they had 8,677 children (an average of 4.0 each). The birth rate is 23.1%; but on the other hand, child mortality is 31.2 per 1000 (Enciclopedia de los Municipios de Mexico: Puebla. 2001;

Serrano-Carreto 2002). So, there is little evidence for a demographic transition in this municipality.

It has been estimated that at least 6 out of 10 people in the rural municipalities of Puebla State, Huehuetla included, are undernourished. Yet despite this, 97.7 % of people do not have a rightful claim to national health services.

From a sample of 8,999 Indian people aged 15 years and older, 4,127 individuals i.e. almost half the survey (45.86%), had never had any formal education at all and more than a third at 3,060 individuals (34 %) had started but not completed primary education. Only 1,395 (15.5 %) had completed primary education with the remainder (4.64%) continuing into secondary education.

The native type of private housing is a rectangular building, made with a stone floor and walls of clay, light vertical poles of bamboo resting on a forked-stick frame, with a thatched or hard cardboard laminate roof (Kelly 1953). Internally, the space is divided into two parts, one for sleeping and the other as a kitchen-dining area, where the hearth is set. The time when the Totonaca undertook elaborate masonry has, of course, long since gone, and in most of the households where a traditional sweatlodge still remains, it has fallen into disrepair.

Of the 2,862 traditional-style dwellings of this type in the Huehuetla municipality, 2,246 (78.5%) had a dirt floor, although an intense campaign is currently in progress to pave the floors with cement. Only 827 (28.9%) of the houses have plumbing and water; 86.2 % lack drains, only 1,690 (59%) have some sort of toilet, and 1,836 (64.2%) have electricity. No less than 26.8% of houses lack either plumbing water, drains or electricity. In the great majority of cases (2,687 of houses, or 93.9 %), cooking is with wood.

4.1.1 THE OMNIPRESENT MESTIZOS

There are two main external factors determining the Kgoyomes' living conditions: the natural environment and the presence of the *Mestizos*. The first one is mainly to do with the intensely humid atmosphere and the fertile but stony and steep slopes of the Highlands of Huehuetla municipality, referred to already in Chapter II; the second is the omnipresent mixed-race population (Stephens 1989) surrounding the Indian communities and even inside their hamlets, who make up the majority of the wider national population of Mexico as well as of Latin America as a whole.

Starting with the massive landing of the Spanish conquerors in 1519, a wide scale process of mixing blood and cultures had taken place. As time went on, male Europeans' insemination of female Indians produced a new racial type that became predominant (Wagley & Harris 1965; Marino Flores 1967) reaching up to 85% of the current population of Mexico (see Chapter II). As a gross description it could be said that Mestizoization began with the superimposition of components including economic structures, technology, social systems and genetic repertoire transmitted from Europe to the soil and original populations of America, impinging on almost all the existing societies and their resources. Extermination, discrimination; in a word, predation, were the conditions established by the Europeans over the natives, but once their mixed-race descendants had prospered demographically, from the sixteenth century onwards, then the same process was led by both over the Indians up to the present day. In these terms, the actions of the mestizos and the resulting processes of mestizoisation (Manrique 1969), can be said to have become, in sociobiological terms, the main adaptive pressure at work on the Indigenous population. This is the case in Huehuetla: even though, according to the National Census, Mestizos do not even amount to a thousand people out of a population of more than

sixteen thousand (see Table 4.1 above), they represent the force which ultimately predetermines collective life-history for the Kgoyomes, an influence obviously far beyond their mere numbers.

4.2 ASPECTS OF THE KGOYOMES' LIFE-HISTORY

By tradition, all men are farmers and all women are housekeepers. Although everyone can have certain additional occupations and other activities beyond these traditional roles, it is often hard to find out about these. Most of what I learned about these aspects of Totonaca life came from different sources everywhere, guided interviews, formal conversations with my informants and assistants, and also casual comments. Here, then, is a set of typical life-histories.

In the opinion of my informants, almost everyone is a virgin until they begin cohabitation (with or without a formal wedding ceremony – this may come later, if at all, after the birth of a child, or even just before death). After beginning "married" or partnered life —referred to as "stealing the bride"— at age 22.9 and 20.2 years for men and women respectively (according to my own calculations from the church files), the couple will stay in the groom's house, following a patrilocal system, for an indefinite time. The husband will expect to be the heir of a half-hectare plot, but the wife can expect to devote the rest of her life to being a housewife, unless her own mother happened to inherit land in her own right (in which case, she may expect eventually to be a beneficiary).

The Indian process of courtship has often been seen as a process of sale and purchase contracted by the groom's and bride's families. During my field work, there was the opportunity to clarify the nature of the bridal gifts and what they mean in

their correct context: all my interviewees agreed that food, beverage and other things given to the bride's parents is just an "*ofrenda*" (literally, "offering") intended to allow relatives and other guests to be invited to the subsequent feast, and to signify both families' pleasure in the occasion. There is always the possibility that these gifts represent a sort of *potlatch* (see Sahlins 1988 [1972] for further description of the concept) in which families display their wealth by sharing with the community, but an interpretation in terms of a redistribution of surpluses and a display of solvency would fit better with other aspects of the Totonacas' customary lifestyle.

As an adult, most Totonacas expect to marry and have children. Until 25 years ago, they might expect to have six or more children; nowadays, they will typically have four children. At every opportunity, he/she will create a dense social network for their children by inviting relatives, friends and neighbours to be his/her children's godparents (*compadres*). In this way, both parents practice an ancient custom that establishes a network of mutual aid for demanding tasks like building a house, and harvesting or clearing the crop. He/she will be totally attached to ancestral customs, and aim to rise in the community hierarchy by becoming a Catholic catechist and then a priest's helper and so on, until eight or more years later, he/she will try to be elected by merit to become a church lay mayor. The success with which a man achieves these markers of civic engagement, combined with his ability to be a good provider of maize, grain, coffee and beans, provides a guarantee of his civic dependability.

A woman's principal duties are growing vegetables in the barnyard, raising fowl and a couple of pigs, making *tortillas* three times a day and taking care of children. She will typically not engage in national or state politics, but only in municipal

politics. This, and talking to others met on the pathways, will be the only break from a monotonous routine of work and responsibility.

With luck, a Totonaca may succeed in going to another locality from the one into which he/she was born, but, most of the time, he/she will never see the sea, even though it is a mere 80 kilometers away from his/her house. He/she will be very interested in the spiritual world, and in rites, traditions and ethnic customs. He/she will be preoccupied with the next life, as well as in acquiring ancestral oral knowledge about, for instance, traditional medicine. But only male Totonacas will strive to lead a moral life in order to be admitted to the Council of Elders, the greatest ethnic authority, which held absolute power until about a hundred years ago. That would be *the grand finale*, a dream come true before departing at the end of one's life to join the protecting divinities in the next world, the creators of the natural world to which everyone belongs. The Council is inaccessible for a woman, although as her husband or sons rise through the ranks, she is often able to establish her authority in the community as their equal alongside them.

According to my key interviewees, every Kgoyome feels them self to be absolutely a Totonaca, absolutely a Mexican, absolutely a *Poblano* (born in Puebla State) and absolutely a Kgoyome or *Huehueteco* (born in Huehuetla). The only other characteristic they feel as deeply about is being an Indian. A clear, but not overwhelming, majority think that none of these is any more important than the others, but all are equal; however, a minority of one in three people did state that being a Totonaca is the most important.

Despite the view sometimes ascribed to them by outsiders, once they have overcome a period of doubt in their teenage years they are not ashamed of being Totonaca Indians, and over and over again claim to be proud of their ethnic identity.

It is only a relatively small minority which aspires to join the *Mestizo* community that does not feel this way. Even so, most do not attribute the disaster that has kept them trapped them for generations as their own responsibility, but rather on external forces and antagonist agents in their collective history; consequently, perhaps, most do not see a radical change in their circumstances as being on the horizon in their normal life; in their own words they are just aspiring to their right to a collective subsistence, free from interference by external agents and with whom engagement, where necessary, should be in terms of universal reciprocity (Scott 1976). Anyhow, they almost always appeal to their own inner social strength in search of a remedy for their situation, rather than relying on solutions from elsewhere.

In general, the Totonacas are ambivalent towards national society, feeling more that they are under siege; for this reason perhaps, a small number seek to abandon the community by joining the *Mestizos*, in some cases without necessarily physically moving out of their ethnic communities. According to a very general interpretation of the demographic statistics, the number of people abandoning the traditional communities is steadily increasing. Indeed, one in ten of our interviewed Kgoyomes asserted that those who take the decision of converting to a *Mestizo*-like lifestyle are different from the rest, even though they are tolerated and well-treated, as is customary among the Totonacas.

As a people, they apparently have given up many of their traditional assets, but preserve others that they consider as real cultural identity markers. These include: speaking in the Totonaco language, dressing in their traditional clothes, being respectful and well-mannered, honouring *el costumbre*, reproducing their rites and traditions, eating their traditional diet based on maize, maintaining their rural knowledge and reaffirming their feelings of ethnic belonging.

Surprisingly, despite being aware of their accentuated poverty ("from extreme to medium poverty" in technical Western terms), they are happy with what they have materially: of the ones in my sample, 50% claimed that they lived just fine and still had a bit left over for special occasions, 29% claimed they did not lack for anything, even though they had no surpluses to fall back on; just 14% claimed to be needy and only 7% said they lacked the most basic necessities for everyday survival.

They listed as sources of their happiness: living in close contact with nature, fresh air, trees, wild animals and flowers, having good weather, a healthy environment and, in particular, an unpolluted atmosphere.

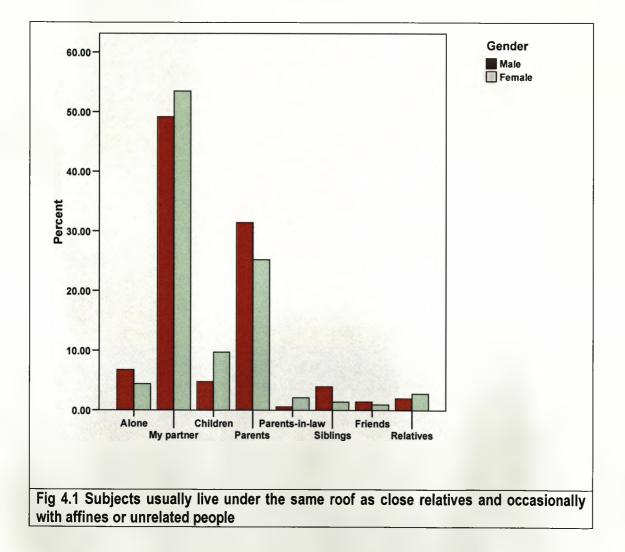
As norms of behaviour, 75% of these interviewees frequently resorted to *el costumbre* although only 25% were absolutely attached to it. They said that they would appeal to the *Mestizo* authorities to solve a difficult problem on roughly half of occasions when a difficulty beset them. Notwithstanding, one in four would take their problems only to the official Indian judge, and one in four would present their problems to the community as a whole or to the priest. One in three relied on civil justice (*Mestizos'*), one in three relied on formal communitarian justice, and one in three relied on indirect, informal communitarian justice (e.g. reciprocation among neighbours and relatives or the withdrawal of it) who may include the basic elements of altruistic punishment (see Fehr and Henrich 2003).

4.2.1 FAMILY RESIDENCE PATTERNS

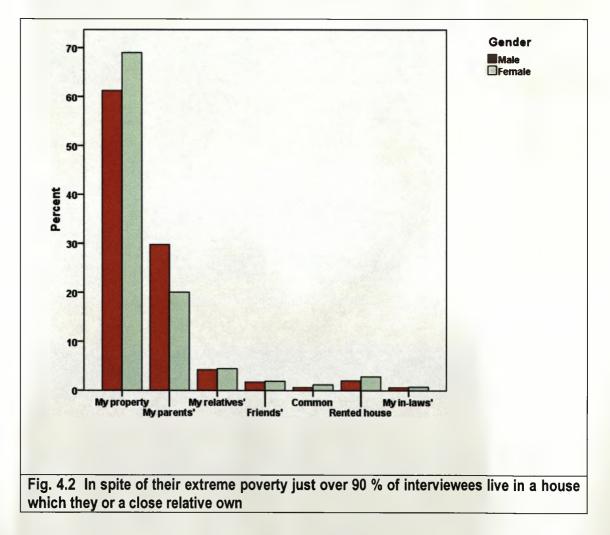
Among the general details asked of the subjects were those concerning their patterns of residence in order to probe families' coexistence patterns and helping behaviours resulting from everyday interactions. Firstly, it was asked which family members the informant lived with.

From a sample of 180 single and non-reproductive people, 80.7% lived with parents. From the sample of 514 married and reproductive people, 71.6% lived with their spouse and children. The combined sample is shown in Fig. 4.1.

Parents, parents-in-law, brothers and close relatives were mentioned as other coresidents in the reproductive informants' answers; siblings and close relatives were the most common co-residents in the case of the non-reproductive. In summary, members of the immediate and sometimes extended family were the most common co-residents among Totonacas.



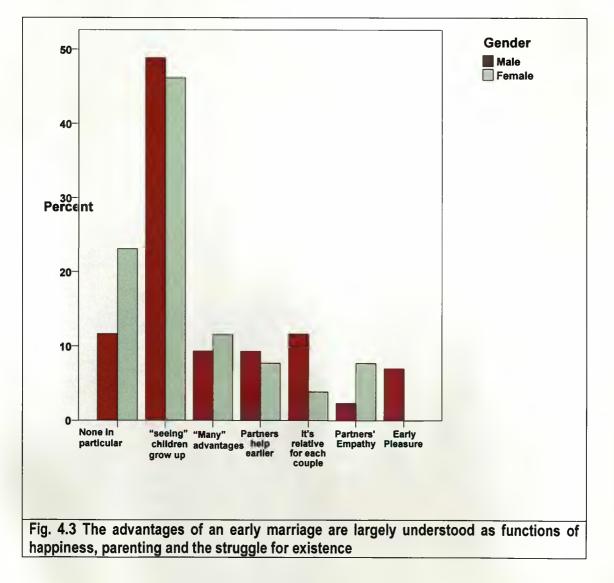
In some cases, helper relatives are not physically present in the 'sleeping house', but in different ways they sponsor the well-being of their kin. Frequently formergeneration individuals either set a portion of the plot aside for housing an offspring or house him/her along with his/her spouse in the same family house. In many cases, assets become permanently transferred as an advanced inheritance. Figure 4.2 summarises the proprietors of the homesteads inhabited by our informants. Although the majority owns the house where they live, given the fragmentation and transfer to their private possession of parts of the ancient communitarian land, the people are extremely poor. Most of the women who stated that they lived in their own house actually meant the family homestead which was built by their fathers or husbands.



Only men aged about 20 years of age begin to differentiate their parents' house from the house they have in mind to build in the event that they do not inherit their parents' house. Interviewees who stated that they lived in a church house were usually those doing a period of service for the church. The rest of the categories are very similar for men and women.

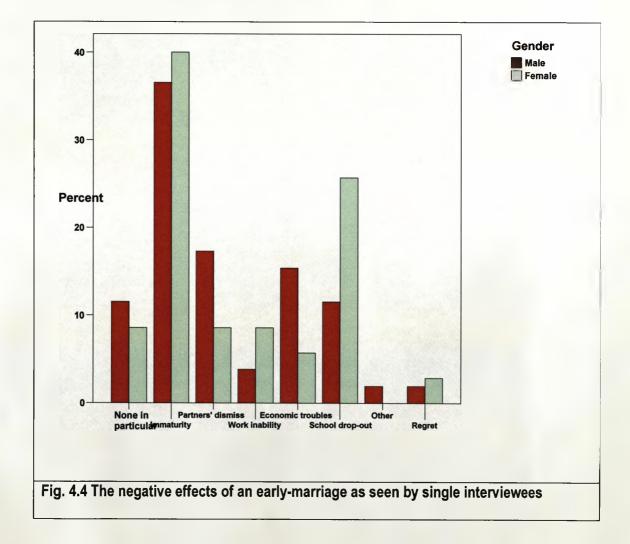
4.2.2 MARRIAGE, DELAYED MATRIMONY OR SINGLEDOM: STRATEGIES TO SUCCEED

Despite being non-reproductive and single, most men and women had the same view about early marriage and parenting. Indeed, they consider being a parent at an early age a precondition for engaging in communal economic activities with offspring in the medium term. When the subjects were asked about the advantages (Fig. 4.3) and disadvantages (Fig. 4.4) of an early marriage, these were their answers:



It is interesting that the most commonly used phrase literally translates as "to see children growing up". Probably, in the Totonaco language, it is a sort of adage denoting, on one hand, companionship and caring for them, but on the other hand it also seems to have a longer-term implication of recruiting work mates. In other words, this is a trade-off strategy based on an early investment.

Nonetheless, 24.6% of the female respondents envisaged early marriage as being disadvantageous and only men placed value on the access to sexual experience and other pleasures through early marriage.



Most of the people who see advantages also see disadvantages to early marriage (Fig. 4.4): lack of maturity (and its inherent consequences for relationship stability and the

completion of education) looms large in the minds of the modern Totonacas. Indeed, males and females have the same opinions, noting immaturity as the highest cost paid by early marriage. Of particular interest, however, is the fact that women were twice as likely as men to list the need to drop out of school as a disadvantage (especially due to pregnancy). Men seem more aware of the risks of economic troubles and family failure as probable scenarios. On average, 10.3% of these respondents see no significant disadvantages.

4.2.3 THE COMMANDS OF *EL COSTUMBRE* AS FITNESS STRATEGY

As we will see in later chapters, relatives live and work together, forming a cohesive economic unit in which everyone, regardless of sex or age, is involved in household or farm work. This is reflected in the fact that the majority of interviewees of both sexes considered that unmarried individuals ought to live in the family's house; if single daughters eventually aspire to work outside of the family domain, they need their parents' permission as a necessary premise. Table 4.2 summarises the cross-sexual samples' opinions regarding unmarried females working outside the family domain and, also, their social and sexual way of life, but the numbers fluctuate for each question depending on the willingness to engage on such delicate matters. It is interesting to note that, despite the fact that they are not so old, these subjects interpret *el costumbre's* prescriptions in quite a traditional manner.

The difference of opinion regarding single men and women having sex is wellknown, although this extended only to sexual relations; having children when unmarried is mainly disapproved of in both sexes. Nonetheless, it is worth noting that, despite the prohibitions of *el costumbre*, most issues attract a fair amount of approval.

Non-reproductive individuals' opinion about	In favour	Against
single women's behaviour: (n=83)	%	%
They must have parents' permission to work	80	20
outside of the homestead		
They must live in their parents' home	92.4	7.6
They must have parents' permission to go out	79.8	20.2
with friends of same or opposite sex		
They must have parents' permission to have a	74.8	25.2
boyfriend		
An older single woman having sexual relations	29.4	67.9
A single woman having children	30.3	68.9

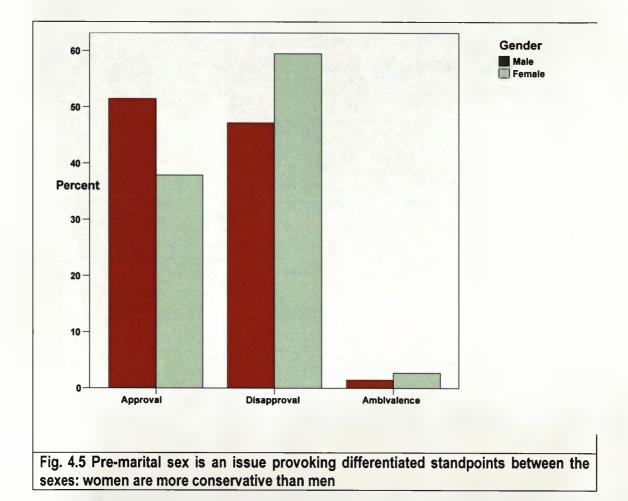
Table 4.2 Behavioural norms appropriate for single men and women

Non-reproductive individuals' opinion about bachelors' behavior (n=79)	In favour %	Against %
They must live in their parents' home	67.2	32.8
A single man having sexual relations	46.7	53.3
A single man having children	32.2	67.8

By way of contrast, some single mothers were shown generous and respectful attitudes by some senior people and members of the community, even though on other occasions individuals might be subjected to severe moral censure because of extra- or pre-marital sexual activity. Even if paradoxical, both views seem to be quite representative of the common view.

In respect of *el costumbre's* moral prescriptions about the behaviour of single women (even older spinsters), our interviewers observed in their conversations with the informants that men seemed to show more severe attitudes than women on more issues, while women were more permissive on questions like working, dwelling and living away from home; however, when the questions were in relation to women having sex and children, men were more permissive. There was not as clear a prescription from *el costumbre* about males' access to sexual relations as there was for women, and the differences of opinions are very evenly split among the males (Fig. 4.5), while females were more inclined to insist on pre-marital abstinence.

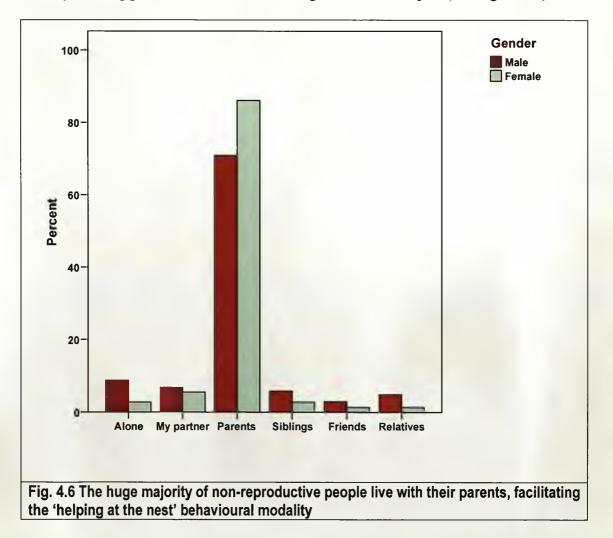
It is important to stress that control over single people's behaviour is in the hands of their parents, partially in the case of single men, but more completely in the case of single women, especially in relation to taking a decision about living in the parents' house or having to ask them permission to engage in a salaried job.



In spite of the *Mestizos*' cultural influence, the high degree of compliance with *El* costumbre's validity in these matters is remarkable. Dwelling together, restricting social, sexual/reproductive acts and leaving the economic decisions in the hands of the traditional guardians (parents and members of the older generation, in general) might create the basis for the family to be a helpful economic unit which strives to safeguard the fitness of its members.

4.2.4 THE ECONOMIC STATUS OF NON-REPRODUCTIVE PEOPLE

This sample includes 106 Totonaco speakers and 3 Náhuatl, 109 in total, different individuals from those included in reproductive and non-reproductive samples analysed in the two previous sections. 52 were men and 57 women aged from 17 to 78, (mean 35.98, median 31.5, and mode 28 years old). 86 were single and 23 were either married or part of a couple. Their only required characteristic for inclusion in this sample was being non-reproductive. Among these, only 12.8% were living with his/her partner, while 12.9% were living with close relatives other than parents, 18.4% were living alone or with friends, and the majority, 56.0 %, were living with their parents and other close relatives in their parents' home, making up an extended family, sharing portions of both the dwelling and the labour plot (see Figure 4.6).

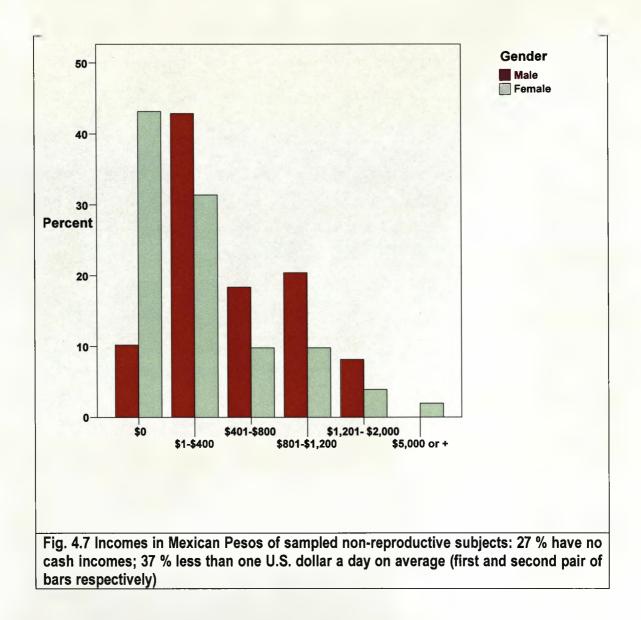


Of the interviewees, 35.2% were owners of the house in which they lived. As is the custom, the land where their house is situated had been inherited from their parents and the house itself was constructed by the young man with the help of his father and relatives. 50.9% of the interviewees, of both sexes, live in their parents' house, and the remaining 11.2 % live in a rented or borrowed house.

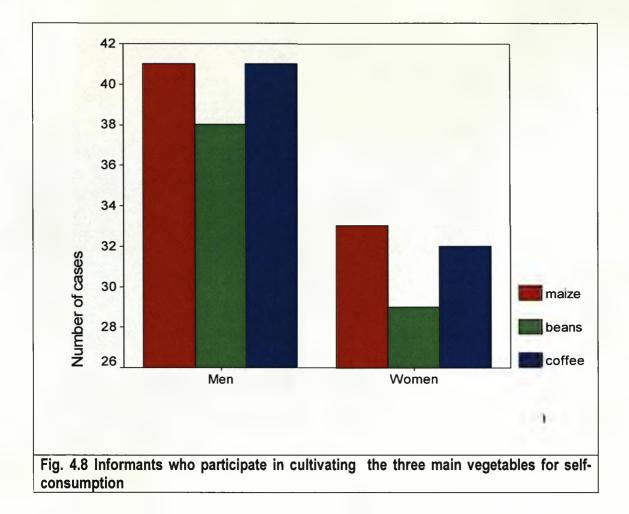
Except for 6.7% fully dedicated to study, the rest were involved in some job, including the traditional ones of farming and housekeeping. In spite of this, 27% did not have any monetary income.

It would be useful to note in passing an apparently contradictory situation: women participate in trade activities as much as or even more than men, in spite of their lack of money. Since Totonacas mainly survive thanks to the produce cultivated for self-consumption (maize by men, vegetables or poultry by women, for instance), these goods offer the possibility of engaging in exchange relationships in order to widen their diet, to assist relatives and neighbours materially or to engage in the wider cash economy. Figure 4.7 shows household incomes in Mexican Pesos as declared by the interviewees (MP 20.5 = £1).

The difference between men and women is evident, with 43.1% of women being in the first rank of no money income and 31.4 % in the second income category of MP \$1-\$400 monthly. Men, for their part, are mainly (42.9%) concentrated in the second income category; the rest are spread along the other four categories. Two per cent of women being in the highest income category are rather exceptional.



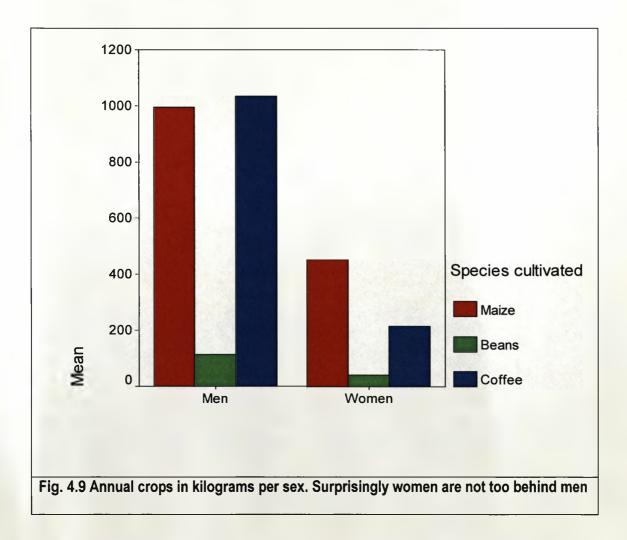
Informants were asked to calculate with the interviewers' help how large their crops were in kilograms. There was a contrast between the sexes in the production and possession of the three main vegetable species planted: maize, beans and coffee. Figure 4.8 shows a count of each sex participating in their cultivation and Table 4.3 shows the amount in kilograms of this crops produced by each sex.



The estimated mean amount of annual production of all three crops is given in Figure 4.9, broken down by sex. Men take the largest share in production, which they hand to female relatives who add their own ingredients and then process into seasoned dishes (*tamales* and other snacks, for instance) for both the household's livelihood and, in some cases, to trade with others.

Table 4.3 Monetary incomes and yearly production of the three basic crops
compared by sex

Incomes (N=100)	Men	Women	Women's production
			as percentages of men's
Money (MP\$ per year)	8,718.36	5,976.48	68.6
Maize (Kg per year)	977	450	46.0
Beans (Kg per year)	115.64	42.24	36.5
Coffee (Kg per year)	1,016	214.69	21.1



4.2.5 COURTSHIP, MARRIAGE AND REPRODUCTION

For Totonacas, the more intense their communitarian participation, the more complete is their personal life, and constantly interfacing with these two behavioural ambits are their familial interactions: the family is the procreative, economic and social unit. Specifically amongst the Totonacas of the Sierra, family links are more personally felt because their members, on average, are less numerous than those of the Coastal populations; as a consequence, household tasks are basically performed by the nuclear family, as a norm. Extended families are very frequent, as it will be shown later, but only as outcomes of the vital growth cycles of the former.

The Kgoyomes are typically monogamous and dedicated to only one spouse for life. To initiate a steady relationship is one of the most transcendental acts in a Kgoyome's lifetime. A case in point is the very low number of people who have had multiple relationships: just 16 informants (2.94% of this sample which as stated previously has a modal age of 28) claimed to have had children from an individual other than their current partner. Of these multiple-maters, 62.5% were males and 37.5% females. The number of children with the previous partner ranged from 1 to 6 (with an average of 1.99).

Despite the Kgoyomes' proverbial reluctance for discussing intimate issues, we did include a number of personal questions in the survey about dating, engagement, flirtation, copulation etc., both previous to marriage and afterwards. The following sections present some of the results.

4.2.6 SEXUAL RELATIONS AMONG NON-REPRODUCTIVE KGOYOMES

Even though sex and procreation in general are seen as a natural phenomenon, human sexual relations, particularly those prior to marriage, are often dealt with

under an extremely discreet veil, even between couples and among their cohort. Notwithstanding, the translator-guides were able to gather a fair sample on this topic, thanks to the good rapport they had with those they interviewed. The following is based on a sample of 162 unmarried participants of both sexes, aged 16 to 75 years (mean age 22.89 and a modal age of 17 years). Of these, 68.5% claimed not to have had a boy/girlfriend, 66.66% of which were male and 33.33% females.

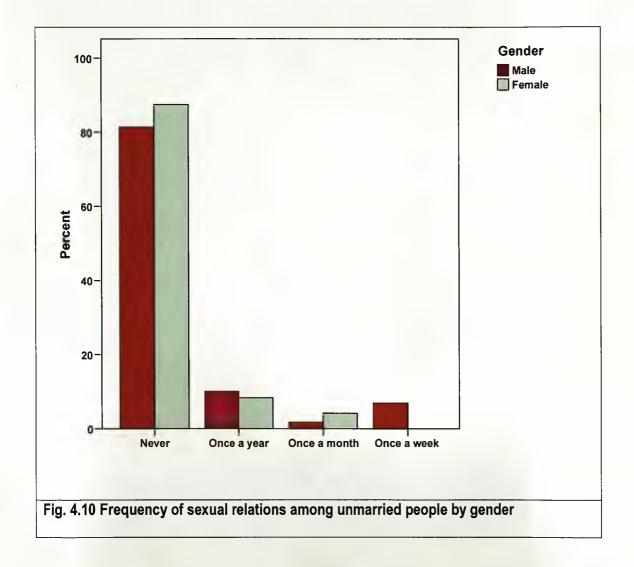
87.8% of those currently in a relationship affirmed that they were dating just one companion; the remaining 12.2% affirmed that they were dating more than one companion. 60% of these multi-bonded individuals were males.

As noted, sex is not taken lightly by the Totonaca: among unmarried people, 84.2% of a sub-sample of 95 individuals with a mean age of 22.8 years (range 16 to 75 years old) stated that they had never had sexual relations. Of the sexually active individuals, 80% were males, 20%, females. Figure 4.8 shows the frequency (or rather infrequency) of sexual activity divided by sex.

Unmarried people were of the opinion that the best age for women to marry is between 9 and 35 years old, with a mean age of 21.39 and a mode of 20 years (n = 113); and for men, between 10 and 35, with a mean age of 22.94 years old (n= 118) and separate modes at 20 and 25. After the age of 35, a single woman was considered by 72.9% of the interviewees to be a lifelong spinster. In contrast, men over 35 years of age were considered by 59.8% of the sub-sample to be, at worst, unconventional bachelors.

Our non-reproductive people's sample (n= 134) supports the sexual conflict view of "reluctant females" and "ardent males" (Krebs and Davies, 1993). Irrespective of the informants' sex, 65.7% stated that women are much more careful than men when choosing a partner and focus their attention on looking for a better

quality boyfriend or husband. 61.7% asserted that women are less willing to have sex or indulge in "love business" than men; while, on the contrary, 79.5% of our informants claimed that men are much more insistent on having sex than are women, and usually look for more than one partner with whom to have sex (as a result of which, men have sex more frequently than women).



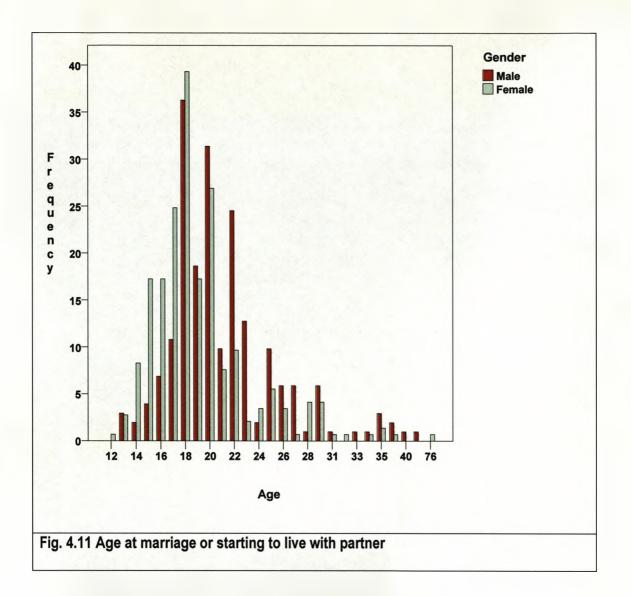
4.3 REPRODUCTIVE ECOLOGY AND PATTERNS OF FAMILY BEHAVIOUR

4.3.1 KGOYOME WOMEN'S FORMULA FOR FITNESS: MONOGAMOUS BUT ITEROPAROUS (OR ONE MAN, BUT MANY CHILDREN)

For the vast majority of Kgoyomes, the first copulation is experienced as a commitment to share sex, affection, companionship, parenting work and so on, for their whole lifetime. It is also the starting point for a steady mating achieved by one of varied mechanisms, in order of frequency: eloping to live apart from the parents; marrying by civil ceremony; receiving an ethnic blessing; marrying by religious ceremony (including the most splendid and expensive party in a Totonaca woman's lifetime) or all these together. The less difficult the procedure, the more often it is practiced. In the first case (i.e. running away together), the parents commonly call off the search after the couple have successfully spent one night together and come to terms with the *fait accompli* in order to get the couple to resume their household duties.

In the ethnographic chapter (Chapter II), it was reported that the average age for a religious wedding, based on data obtained by us in the Huehuetla church archives, is 22.87 years old for men, 20.02 for women (n = 614 couples married between 1958 and 2002).

In our questionnaires, the living-together stage was initiated at an average age of 21.25 years for men, and 19.16 years for women (Fig. 4.11). The differences between the ages at marriage and initially living together reflects the time required for formal marriage preparations once a couple has started to live together; the accustomed arrangements take roughly 16 months.



A feature worth mentioning is the partners' age difference of 2.09 years on average, with the men being older than the women. Having married at a mean age of 19.16 years of age, the women in our sample had their first child within a short time at a mean age of 21.21 years old, from which a mean waiting interval of 2.05 years can be inferred. Details about the female informants' children are given in Table 4.4 (n = 290).

As for the sex ratio within the offspring sequence, it is the same proportions as that observed among our female interviewees' sibship, at least up to the fifth rank. The first and subsequent odd ranks (i.e. 1, 3 and 7) contain a male majority; the even ranks (i.e. 2 and 4) contain a female majority; the only exception to this alternating pattern is a female majority in the ranks closest to the mean number of offspring (i.e. rank 5).

Only 7.7% of our reproductive female informants had only one child (n = 300 for this sample); the rest (92.3 %) had between 2 and 12 children, with a mean of 4.5 offspring (and a modal value of 5). Nonetheless, since 50.7% of the respondents are below the age of 45 and are still fertile. Therefore I re-analysed the data with a subsample (n = 148) comprising only subjects aged over 45 years in order to assess the true level of semelparity (having just one child in their lifetime), and this turned out to be 4.1%.

Children by birth-order $n = 300$	Sex proportions (%)	Infant mortality (%)	Children's Mean age (in years)	Healthy children (%)	Age differences
Eldest 290 (cases)	ੈ: 55.9 ⊊: 44.1	8.6	21.43	96.5	-
Second 271	්: 48.9 ♀: 51.1	7.5	19.62	96.9	1.81
Third 236	්: 57.2 ♀: 42.8	5.2	18.38	96.6	1.24
Fourth 192	්: 49 ♀: 51	4.7	15.92	96.4	2.46
Fifth 139	්: 46.8 ♀: 53.2	4.4	15.71	96.6	0.21
Sixth 48	්: 50 ♀: 50	8.5	13.7	95.1	2.01
Seventh 35	්: 54.3 ♀: 45.7	5.9	16.38**	87.1	-
Eighth* 20	්: 70 ♀: 30	5.3	16.91**	94.4	-

Table 4.4 Reproductive characteristics of female respondents.

* There were 8 cases of ninth and 1 case of tenth children, too few to provide reliable estimates of traits

** These figures are probably due to the presence of a few much older seventh and eighth children with older siblings who had died, thus raising the average age in this category, and can be considered outliers

Although the frequency distribution of the number of children is a decreasing curve, there is one point in Table 4.4 where the number of children born decreases conspicuously, namely between the fifth and sixth rank. Although some of the women in our total sample may still go on to have more children (since 152 were aged under 45) the dramatic nature of this sudden drop does suggest a threshold effect where parents who have had five children often avoid having a sixth child, a fact which would also be backed up by the 2000 Census figures, as previously stated.

A dramatic positive difference may be noted regarding past and current rates of infant mortality when comparing infant mortality rates and number of siblings in Table 4.9, with our informants' number and survival of offspring (Table 4.4), even though survival rates are still too low compared to both the extended Mexican population and international standards. Irrespective of quantities however, there are similar patterns insomuch as highest mortality occurs in both the eldest child (first born) and among the later-born ones in the rank. Of those who survive, most stay in good health.

As for the unhealthy children, their most frequent illnesses, as reported by mothers, were as follows; about a third of cases suffered respiratory tract problems, another third stomach infections and the remainder related to conditions pertaining to their vernacular conception of illness such as "*mal de aire*" ("evil wind illness"), "*susto*" ("fright"), "*empacho*" ("metabolic conditions").

In our sample of reproductive females, only a handful produced their first child after age 30 (one case each at 32, 33, 36, 38 and 40 years old, and two women who had their first child at 37). So, the bulk of their first pregnancies occurred between 14 to 31 years of age, with a mean age of 21.2 and the SD 4.3 (see Figure 4.10 for frequencies). As for the interbirth period, it is possible to infer from the age differences among the six oldest children that it is rather brief: about 1.55 years.

If a woman has an average of 4.5 children, then with a childbirth interval of 1.55 years, this denotes a trend to concentrate the gestations in a 7-year period, typically from 21.2 to 28.2 years of age, with the rest of the women's reproductive lifetime devoted to the children's nurture and survival, working and household tasks included.

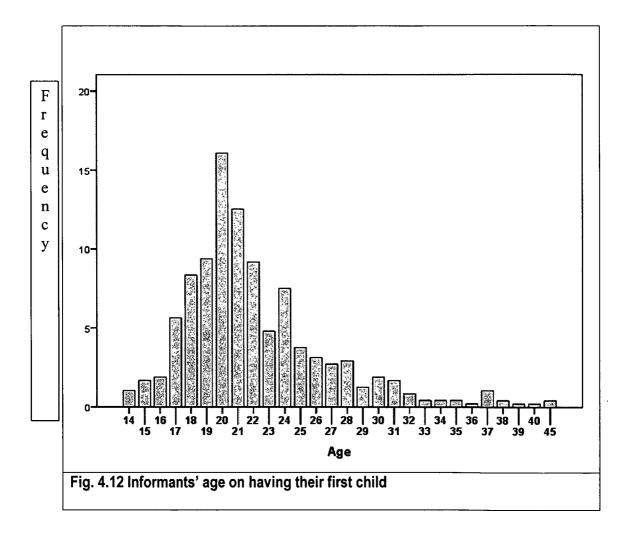


Figure 4.13 plots the females' answers about how long they breast-fed their first-born children, emphasising the fact that breast-feeding typically ranged from one to two years in duration. It was not uncommon to find cases of children being suckled after the age of three years and even up to nine years old, opportunistically sharing the breast with a younger sibling, tolerated rather as a way to make them feel their mother's affection. These cases were considered outliers, since these bouts were quite irregular (barely few seconds with no regularity) and of dubious nutritional effect. Those rare mothers who did not breast-fed explained that their breast had had either "no good" milk or not enough to sustain a baby.

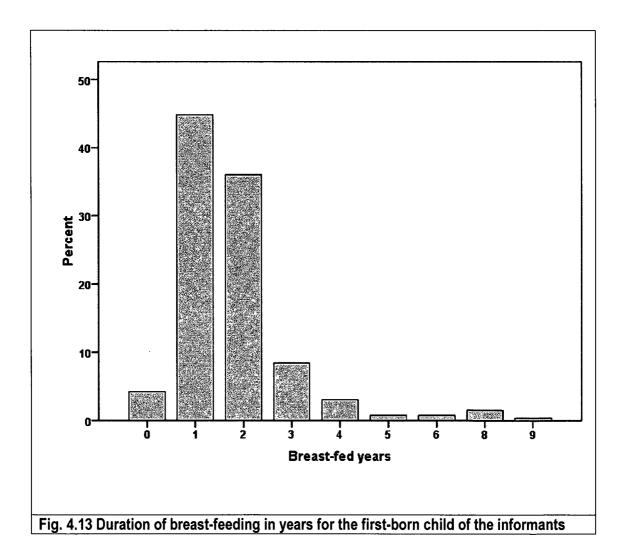
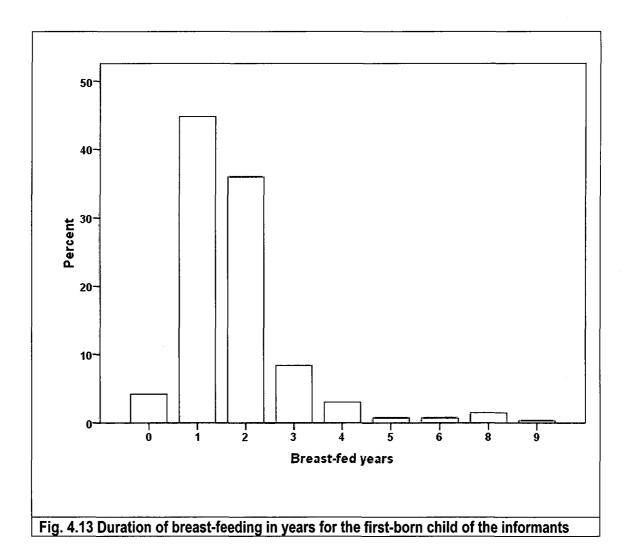


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Finally, our informants did not express any explicit differentiation on their part between children based on birth order or sex, and what few differences there were between children can probably be attributed to the women's developing expertise with each successive birth. It is interesting to note, however, the coincidence between the birth-order ranks in which female children were predominant (Tables 4.4 and 4.9) and the greater breast-feeding duration rates (Table 4.5), with its slight suggestion that female babies might indeed receive greater investment.

4.3.3 THE PATTERN OF INFANT MORTALITY

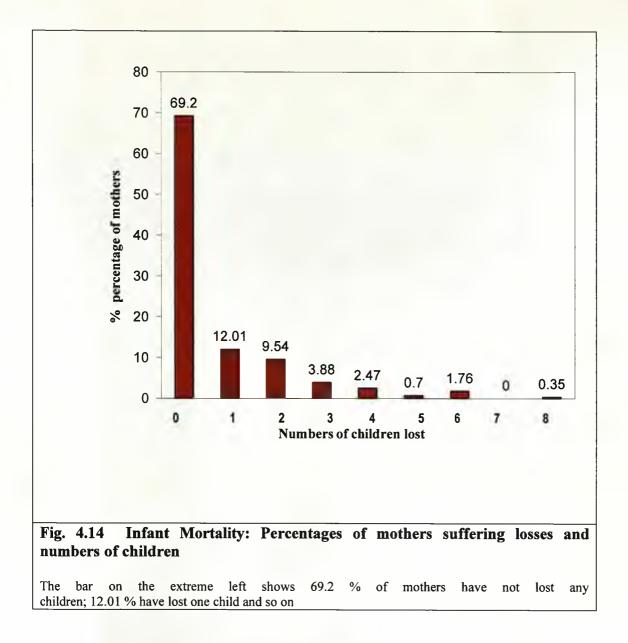
Just as a starting point it would be useful to give an account of child mortality among the Mexican population as a whole: this is currently 31/25 (male/female) per 1,000 live births according to the World Health Organization (Mathers et al 2005), although it will be higher than this among the ethnic Indians due to their poor sanitary conditions. The ecological constraints and the extreme poverty determine an unhygienic situation that is especially harmful to vulnerable people, children particularly. Some of the main troubles causing the high rate of illness in this community were highlighted in chapters II and III. Such is the risky context in which couples invest their meagre resources in their offspring that infant mortality is a frequent factor among most of the households.

As it is a painful subject to discuss their dead infants, some contradictory answers were given to our team; even so, enough safe data were obtained to outline some aspects of infant mortality in the period ranging from birth up to the age of about 10 years.

A total of 262 reproductive females gave us their consent to tell us at least something of their motherhood history to differing degrees: 67, representing 25.6% of the total, had lost at least one child; 195, or 74.4%, had not lost any. Casualties ranged from 1 to 8 for individual mothers (Fig. 4.14), and the number of dead children amounted to 191 in all. Among these, there were 94 males and 97 females; so, the dead children's sex ratio is 50.79% males: 49.21% females. Therefore, within the Totonacas, the national trend (see above) in which male infants, proverbially less resistant than females, suffer a greater mortality is fulfilled but to very much lesser degree. Overall, these figures indicate that 86.59% of children survived and 13.41% died. Thus, infant mortality amongst the Kgoyomes is 4.79 times greater than that of the national population.

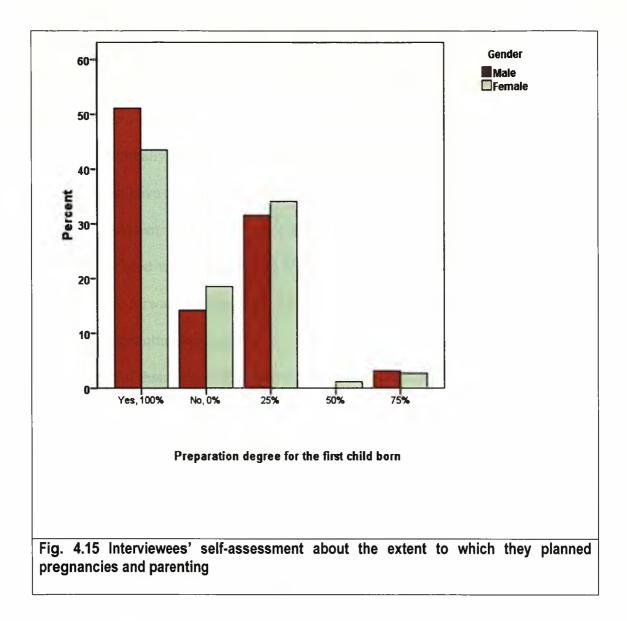
However, the reliability of these data is uncertain, because, unexpectedly, in the next two questions on the questionnaire which asked about the number and sex of their dead children, 21 additional women admitted having lost children.

The opinions of several local midwives on the causes of childhood deaths are summarised here, as a final comment. In their experience, a third of early child deaths correspond to stillbirths and problematic deliveries that resulted in the newborn dying in the first few days after the birth; another third is due to malformations or incurable hereditary illnesses which cause death in the first year; the last third correspond to infants dying during the infant period as a result of infectious diseases.



4.3.4 PREGNANCY AND CIRCUMSTANCES OF NURTURING

The deep and daily closeness that Totonaca parents sustain with their relatives, particularly with their offspring, has already been noted. Since Totonacas are affectionate and tolerant people, it is worth asking to what extent they planned their families. Some of our questions were aimed at probing their planning about having a child. Figure 4.15 shows a quantitative self-assessment by men and women of the extent to which pregnancies were planned.



In their opinion one hundred per cent planning means a couple must have got as much income as possible by working harder and minimised expenditures by being austere. In addition, they must have arranged with their extended families to become the target for all sorts of cooperative help. In practice, it means men taking decisions as much as one year ahead with respect to the best plant species to farm in their plot(s) and taking on at least one additional plot to assure an extra harvest five or six months later.

Commonly, women grow medicinal and edible plants and vegetables, raise fowl and fatten pigs in the back-garden for both the market and self-consumption. Often, men work as day-labourers on other people's property for which they are paid in money. Furthermore, they must decline every invitation to uphold a *cargo* in the social-religious system and call off the honour of being the host in all kinds of traditional parties. Normally, by the time 6 months has gone by and the pregnancy is in progress, they must have stored maize, coffee and beans in plenty to improve their prospects; any subsequent harvests of the year can then be used to offset any remaining debt associated with child-birth or other needs. Figure 4.15 suggests that men are slightly more forward looking than women, as might be expected since they are in charge of the agricultural calendar.

Thus, in the case of their first child's arrival, the kind of preparation listed above is achieved by 50.3 % of the individuals. On the other hand, the people who self-assessed their preparation degree as deficient (0% to 25%) amounted to 49.7 % of individuals.

The interviewers next asked respondents to compare whether their degree of planning for second and subsequent children was improved with respect to the first one; 85.5 % of the sample (n = 441) self-assessed it as much better and the remaining 14.5% opted for the negative.

The next questions asked them to extend their self-assessment to other specific arrangements, namely: whether they were able to both save enough money for the delivery and puerperium period expenses, as well as the time dedicated to taking care of every child. Table 4.6 displays the informants' answers.

Two different patterns are manifest in the table. First, the column corresponding to "saved money" undergoes a noticeable improvement from the first to the third child being achieved by up to 78.2% of parents, then gradually declines down to 65.7 % for the 8th child. So the experience gained by the parents about saving money does

much to improve the circumstances of arrival for children who range from third to sixth in the birth-order. Second, the amount of time dedicated to the care-taking of offspring steadily improves in every step from the first to the seventh child, achieving very high levels with later-born children.

These two patterns would be related to the 'helping at the nest' behaviours performed by the older children who, by helping with the household tasks, permit their parents some spare time to be dedicated to the youngest ones' care; but, on the other hand, the financial costs increase with every new mouth to feed from a restricted resource supply, and this limits the amount of money that can be saved.

	People who saved money exclusively for birth expenses (%)	People with enough time dedicated to taking care of their children (%)
First child $(N = 410)$	66.5	99.3
2 nd	74.3	93.1
(N = 389) 3^{rd} (N = 321)	78.2	94.2
(N = 321) 4^{th} (N = 268)	76.9	95.2
(N = 268) 5 th (N = 192)	75	96.9
6 th	75.9	97.7
(N = 87) 7^{th} (N = 58)	72.4	98.2
(N = 58) 8^{th} (N = 35)	65.7	97.2

Table 4.6 Percentages of the sample affirming there was an improvement inpreparation for their subsequent offspring.

In general, Totonaca traditions seem to be grounded in adaptive procedures to solve vital challenges. It is the female habit to give birth in her own home assisted by a midwife, avoiding both the costs of hospitals (from both the economic and geographical viewpoint) and staying in a strange milieu where strangers make impersonal decisions about what happens to you. (In fact, the first medical hospital

built in Huehuetla only dates from 1999) Table 4.7 shows the massive adherence to the at-home birth habit, just as it was done centuries ago.

Birth	Born at home assisted by a midwife	Born in hospital assisted by a
modalities by	(%)	medical doctor (%)
Birth-order		
1^{st} child (N = 261)	80.5	19.5
2^{nd} (N = 243)	84.4	15.6
3 rd (N = 212)	85.8	14.2
4^{th} (N = 164)	89	11
5^{th} (N = 121)	90.9	9.1
6^{th} (N = 71)	88.7	11.3
7^{th} (N = 43)	93	7
8^{th} (N = 22)	100	0

Table 4.7 Women giving birth to their first child registered the highest percentages for hospital deliveries, although most women give birth at home.

Women giving birth to their first child registered the highest levels of hospital births, which decline gradually in subsequent births and vanish altogether by the eighth child. There was no relation between youth and giving birth in hospital; in fact, lots of teenage women gave birth at home and several cases of women in their thirties went to the hospital, according to my records. Rather, experience and labour risk were implicated as possible factors; availability of money was, of course, also a determinant.

4.3.5 SOME TRAITS OF THE OLDER GENERATION'S FAMILY ECOLOGY

The informants were asked about some traits of their parents, namely, birth-order, sibship size, ages if currently alive or age at dying and, lastly, age at marrying. Given that Totonacas are very inclined to a patrilocal dwelling custom, their family interactions are preferentially on the father's side; hence, the "don't know" answer was about 15% more frequent for questions referring to the mother's side.

As a first result, the data contradicted an old and deeply rooted assumption that Indian families, in general, have a large number of offspring, say, from six children upwards; this turned out not to be true among the Highland Totonaca. Figure 4.16 displays the interviewees' fathers' sibship size distribution irrespective of sex: the mean was in fact 4.71 and the mode 4.

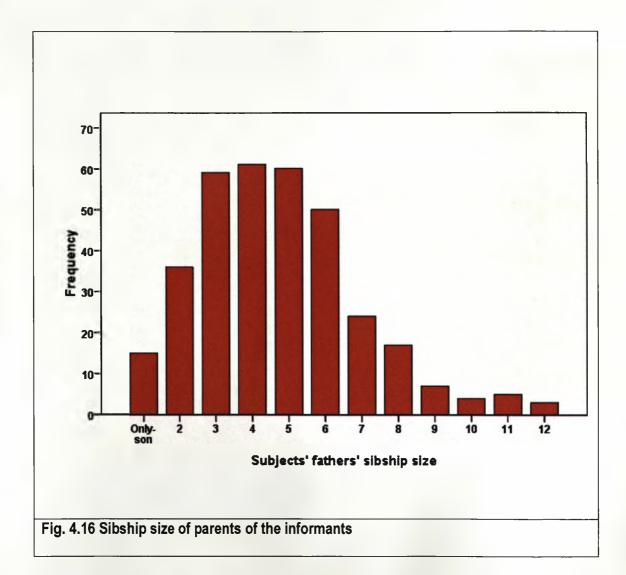
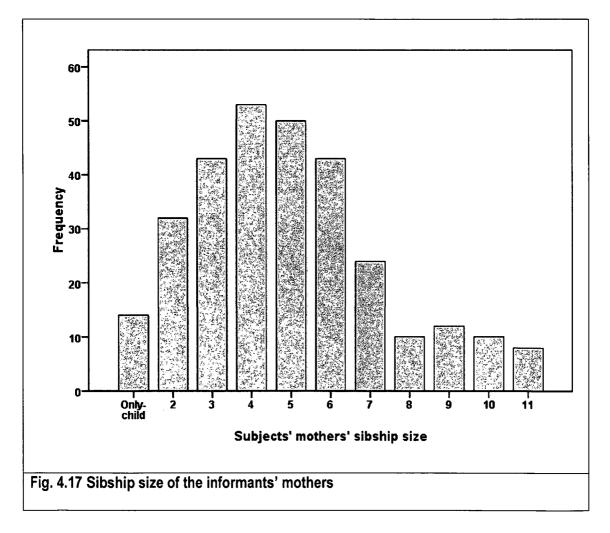


Figure 4.17 shows the equivalent values for the interviewees' mothers' sibship. This is also normally distributed, with a mean of 4.92 and a modal value of 4. In fact the patterns are similar for all three generations (informant's offspring / their own

sibships / their parents' sibships) wherein the mean number is between 4 and 5 and the mode is 4..

Finally, some information is available about the survival of interviewees' parents as clues about their likely availability and helpfulness as grandparents. Unsurprisingly, females outlived the males, with 37.8% of the informants' fathers still alive compared to 46.4% of the mothers (n = 471). Even so, it seems that less than half the children could expect to have a grandparent still alive for much more than the first half of their childhood. Nonetheless, it is interesting to note that some individuals, including males, were extremely long-lived: 9 men were over 90 years old (one claimed to be 110 years old!) whereas only 3 women were said to be over 90 (of whom one was 96).



4.3.6 REPRODUCTIVE DEMOGRAPHY

Some figures about reproductive behaviours among the Totonacas of Huehuetla have been published in the National Population Census of Mexico (Censo Nacional de Población 2000) and other government digests. Although scarce, this particular information on the Huehuetla Totonacas (Consejo Nacional de la Poblacion 2000; CONAPO 2005) is useful to contextualise the data originated in this work and Table 4.8 provides a summary.

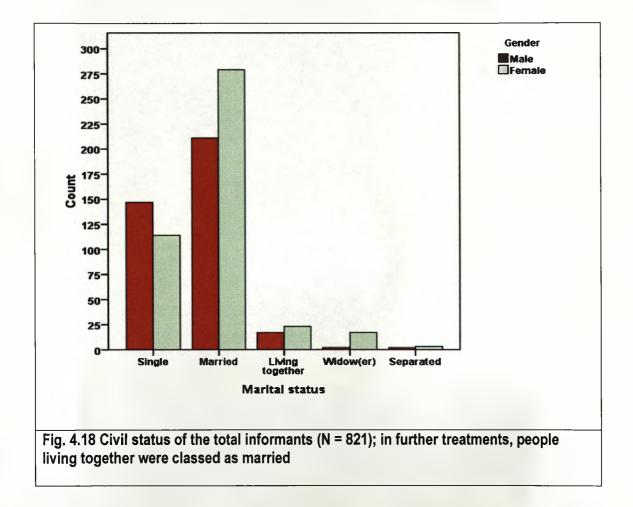
 Table 4.8 Some official demographic data related to general reproductive processes among Totonacas of Huehuetla

Population of Huehuetla				Total: 16,130
Indigenous language speakers		Males: 7,705	Females: 7,735	Total: 15,440
Number of indigenous households				2,862
Age range	Unspecified individuals: 94	0 -14 years: 5,762	15 – 64 years: 8,717	65 years plus:
		• • • • •	-,	867
Marital status of male and female individuals over 12	Single:	Coupled/Marrie d:	Widowed or separated:	Unspecified:
years old	3,996	6,010	747	74
				Total: 10,827
Birth Rates	Women 15 – 49 years:	Born-Alive Children (BAC):	Women's BAC average:	
	2,173	8,677	4	

From these census figures, some very general statements follow: i.e. 95.72% of Huehuetla's population are Indigenous, the sex ratio is practically 1:1 (exactly 0.998 to 1.002) and a probable average of dwellers per house is 5.4. These are useful elements to bear in mind.

In terms of my own research, my sample is formed by 821 informants, whose civil status and sex is summarised in Figure 4.18. Among them, 554 are coupled (i.e. living with a partner) or have been so in some stage of their lives, 261 have always

been single and 6 did not specify their status. 514 are reproductive, the number of successfully reared children ranging from 1 to 13 and a mean of 4.59 children according to the reproductive women's direct information. It is noticeable that the sample contains many more widowed women than widowed men, and more single men and married women than their counterparts. Certain patterns of shorter lifespan and migration that involve old men, young single women and married men are likely to have been responsible for this.



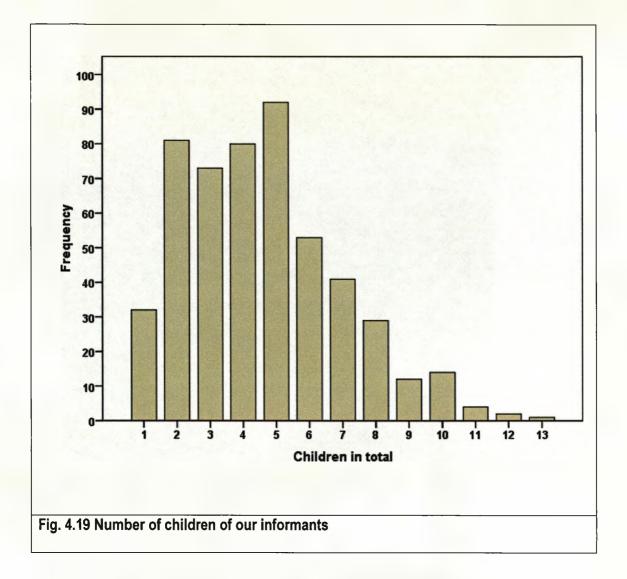
Most of the couples shown in the graph as "living together" are reproductive partners and a difference in any domain with respect to those married by civil and religious ceremonies was not observed; therefore, hereafter both categories will be treated as the same. So, those single parents, married/living-together individuals, widowed and separated persons, in total 514 people who have children, are the main subjects of this section dedicated to reproductive phenomena regardless of their marital status.

4.3.7 DESCRIPTIVE PROFILE OF THE REPRODUCTIVE TOTONACAS

The bulk of reproductive interviewees, of both sexes, have had an average number of 4.41 (S. E. \pm 0.105) children by only one partner (Fig. 4.19). The offspring's sex ratio is exactly 1:1. Of informants of both sexes, 83.8% stated that, however many children they had, it was enough and they wished to have no more.

The offspring size distribution follows a normal curve steadily rising from one child up to five and then gradually decreasing until the last categories; however, the modal number of '2' (16.7 %) constitutes a secondary peak. This fact could either be explained by the parents' youth, i.e. that they had not yet had time to have more children, or the increasing desire among both younger and middle-aged couples to restrict family size to around 2.

Informants with two or one children who were willing to inform us about their preferences with respect to prospective family size (n = 31) and sex (n = 16) mainly agreed that an ideal number was two (mean expected children = 2.16), one son and one daughter. A moderate percentage of females (20.2%), however, showed a clear but non-significant inclination to wish for more than two children, with no indicative trend in favour of one sex (χ^2 = 4.148, df = 2, p = 0.126).



Nonetheless, the women's preferred number of children remained, in general, more stable across different marital statuses compared with men's: in different samples, female non-reproductive informants (n = 38) expressed a desire for an average of 2.47 children, while mothers of one or two children (n = 19) wished to have in total a mean of 2.42 children. By contrast, a sample from single males (n = 72) wish in the future to have on average 2.72 children, which was different from actual fathers of one or two children (n = 19) who wanted just 2.0 children, on average.

It is interesting to note what seems to be a difference between the children actually reared by both our post-reproductive female informants (mean = 5.36, N = 95, aged 47 - 66 years) and the oldest generation of informant females (mean = 5.07,

N = 15, aged 67 – 87 years) and the ideal number of children foreseen by our youngest informants (2.7 on average).

46.2% of the subjects, with a mean age of 46.9 years (S. D. 13.75, N = 482), stated that they also had a mean of 3.34 (S. E. \pm 0.203; range 1-30) grandchildren, with the ratio between the grandchildren's sexes being 50.51 (males): 49.49 (females).

4.3.8 PATTERNS OF SIBSHIP SIZE THROUGH TWO GENERATIONS

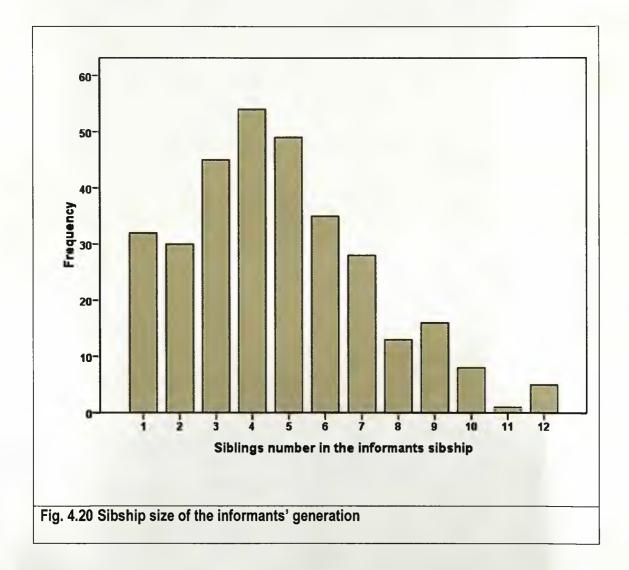
This section is concerned with reproductive traits, birth rates included, of the generation previous to that of our informants: i.e. their parents. The information was collected by requesting information on our informants' siblings, in order to have a point of contrast that will be compared in the next section with the generation of children of our interviewees.

Among all our informants, 11.2% affirmed that they had been only-children; the sibship size mode was 4 (16.9% of all informants), and not far from it, a sibship of five and three (14.5% and 14.3% respectively); the rest of the sample is distributed into the remaining categories as Table 4.9 shows. The sibships ranged from 1 to 13 (informants included) with a mean of 4.69 and a standard deviation of 2.64. I only scored those respondents' siblings that resulted from live births and survived to 10 years of age.

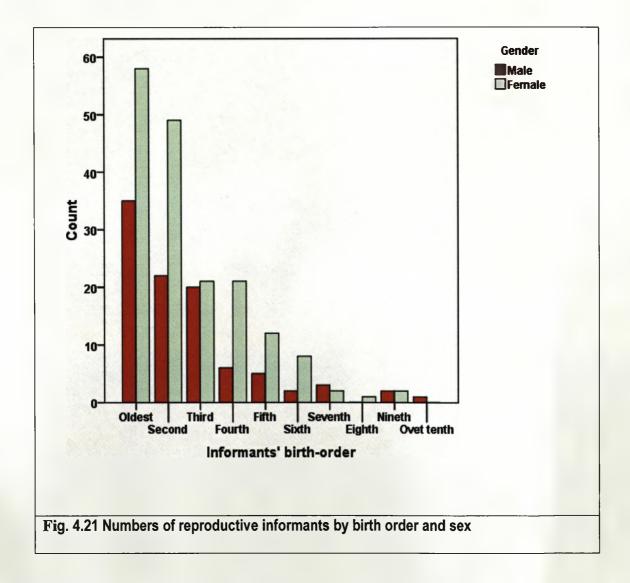
A change in the fertility pattern of the Kgoyome (Totonacas of Huehuetla) population is visible when the family size of both parents of our informants and our informants over 50 years of age is contrasted against the next generation's forecast (compare Figures 4.20 and 4.21), insofar as in the former having one or two children was not very frequent, with the preferred number being four, five and three, instead.

Indeed, an average of 4.69 children and a mode of 4 was typical for individuals over 50 years of age, and was totally in agreement with the old recommendation of *el costumbre*, "the more, the better".

These same figures transferred to a graph permit us to observe (Figure 4.20) that sibship size follows a normal-curve distribution except for a shallow hollow between one and three siblings. A sibship of two is the least common in the range from 1 to 5.



In the past, a family size as numerous as possible was the household head's longterm strategy so as to get many helpful farm-hands in order to thrive in a socioecologically constrained environment. But, given their usual practice of equitable bequeathing, as stated in the previous chapter, the increasing number of heirs leads to a geometrical process of homestead fragmentation and soil over-exploitation. Evidently, access to land, and farming resources in general, became progressively more difficult for every generation's livelihood. The lack of soil productivity, which resulted in the increasing presence of a day-labourer army, uncontrollable migration and deepening poverty as persistent consequences, have apparently influenced people from strictly following the traditional norm of procreation — or at least in moderating their adherence.



Therefore, both the unavailability of farmland and economic shortages have resulted in a challenge to *el costumbre* regarding traditional patterns of family size within just two generations, in demographic terms and also significantly in conceptual / cultural terms. For that reason, contraceptive herbs from the vast traditional pharmacopoeia were the main remedies used by Indian women, as we learned during our data collection.

The variation consisted in a reduction of the mean offspring number from 5.07 and 5.36 for women aged 47-66 and 67-87 respectively, as shown in the last section, to a mean of 4.49 according to our female sample, and even the 4.0 average of children in the Huehuetla Totonacas' official data (INEGI 2000; CONAPO 2005). In this context, the government's propaganda intensified about two decades ago in favour of procreating only two children and this has been a successful element in counteracting the effect of tradition.

The former data comparison allows us to observe the following trends in our sample:

 Sibship sizes almost coincide with a normal distribution There is an irregular occurrence of the sibship '2' in both samples: as either a "hollow" in the distribution of sibship sizes among our informants' generation or as a hump among their children's generation

4.3.9 BASIC CHARACTERISTICS OF OUR INFORMANTS' PROCREATION

A sample of reproductive interviewees was asked about some basic traits of each of their siblings, namely: sex, current survival (whether their siblings were alive at the survey time), either current age or age at death, age at starting to help their households, and schooling years, under the assumption that these circumstances

made up the familial ecological context of their social upbringing, important in their future behaviour. I only considered siblings that had survived past 10 years of age; namely, the infant mortality threshold.

The result was a file made up by 316 individuals who provided information on 1493 siblings in total, with an average sibship size of 4.72. Just for general reference, the informants' mean age was 46.99 and the modal birth-order rank was first. The sex ratio for both each birth order rank and for the total sample was close to 1:1, (Table 4.9).

Table 4.9 Description of informants' sibships by birth order, sex, survival, current age, age of starting to help at nest and years of schooling.

			Survival (to at least age 10) (%)			Age (in years)		Schooling years (equivalent to basic primary schooling)		
	ි (%)	♀ (%)	Yes	No	Mean	Started helping at	Mean	SD ±	Mode	
1 st	52.4	47.6	78.5	21.5	48.46	10.39	2.90	3.08	0	
n	3.	11		303		194	2	43		
2 nd	46.6	53.4	84.9	15.1	45.25	10.44	3.18	3.3	0	
n	2	77		272		195	1	84		
3 rd	51.2	48.8	83.9	16.1	41.21	9.24	4.13	3.16	6	
n	2	46		242		169	1	37		
4 th	45.1	54.9	83.9	16.1	37.89	9.24	3.75	3.26	0	
n	1	95		192 132 131		192 132		31		
5 th	46.7	53.3	87.3	12.7	35.9	9.86	3.99	3.43	0	
n	1	50		150		104	9	9		
6 th	42.3	57.7	88.2	11.8	33.64	9.0	3.86	3.18	6	
n	1	04		102		72	7	0		
7 th	54.1	45.9	81.0	19.0	33.33	8.0	3.95	3.09	6	
n	0	51		63		36	4	3		
8 th	43.6	56.4	80.0	20.0	32.78	10.0	5.04	3.68	6	
n		39		35		23	2	8		
9 th	50	50	92.0	8.0	31.94	9.75	3.21	3.74	0	
n	2	26		25		18	1	9		
10 th	50	50	75.0	25.0	29.0		4.50	3.86	0	
n		12		12		6	l d	8		
Total:	48.2	51.8	8	3.47	46.99	9.99		3.85		

(n = the number of respondents on that particular item)

In general, the sex ratio and other traits were fairly symmetrical within birth-order ranks. Nonetheless, males were in a slight majority among the eldest, third and seventh siblings in the sibship order; for their part, females were in the majority as the second, fourth, fifth, sixth and eighth siblings; the majority of females in the fifth rank is remarkable because it breaks what is otherwise a perfect alternation pattern.

4.3. 10 BIRTH-ORDER AND SEX IN RELATION TO SURVIVAL

It can be seen from the table that in the middle of the birth order ranks, i.e. the fourth, fifth and sixth, there is a concentration of female sibling majority. This majority sits neatly in the value range of the mean sibship size of reproductive individuals (4.72) and that of the whole sample including non-reproductive (4.69 siblings), indicating that the majority of Totonaca standard families (also those having child modal numbers of 4 or 5) typically have daughters as youngest siblings. It may be noted in passing: there was no suggestion during the field data collection that parents consistently preferred a specific sex of child as a cultural pattern.

With regards to the survival column in Table 4.11, it is evident that the highest values of mortality corresponded to the tenth-born sibling, with the first and eighth siblings next in order; however, the sample size is very small for later-born children.

In respect of the age of the eldest siblings, a proportionally higher mortality is inevitably a consequence of their greater age at the time of the survey. Nonetheless, the large differences between the values for the eldest's mortality and those of subsequent siblings suggest that some other factors differentially lead them to a greater mortality.

In general, the survival curve resembles a normal distribution ascending up to the sixth siblings and then descending to the later born, with exception of the ninth-born

which showed the most persistent survival rate among all the children. When differentiated by sex, male survival was commonly higher than female, as Table 4.10 shows. As stated earlier, this is at odds with the overall national trend.

Table 4.10 Higher rates of male survival is shown through the birth-order of those ranks with sufficient number of subjects (from 147 to 21)

Birth-order &	1 st	2 nd	3d	4 th	5 th	6 th	7 th
Survival							
Males (%)	78.7	83.2	80.2	84.7	88.7	94.1	81
Females (%)	76.2	83.2	84.6	83.2	86.2	84.8	81

Seemingly, female infant mortality in previous generations was higher, but since higher numbers of females were (and are) being born and exposed to the risks of the Indian lifestyle, which includes a totally natural (i.e. non-medicalised) pregnancy and traditional style of delivery, this may not be surprising. It may be noted that nowadays, even with marginal levels of medical and educational assistance, infant mortality is decreasing and life expectancy has noticeably increased, as indicated by the *Instituto Nacional Indigenista* (official web page 2005): life expectancy has increased for every Indian, but particularly for females for whom it is now 77.9 years, contrasting with 73.0 years for males.

Also notable is the concentration of three in four of the highest mortality values around the later-born children, i.e. the tenth, eighth and seventh, in that order. Since parents presumably accrue experience with each child, parenting skill should not be a factor explaining higher mortality for the younger children. However, the family's declining resources may be an explanation.

4.3.11 SCHOOLING YEARS AND AGE AT STARTING TO HELP BY BIRTH-ORDER

The age column in the same Table 4.11 shows values decreasing with the birth-order. However, some surprising results appeared regarding our subjects' schooling years: two from the three last places (the eighth and tenth siblings) achieved the highest schooling rates; by contrast, the first and second siblings spent least time at school. Thus, as far as formal education is concerned, my informants received an average of 3.85 years of schooling (see Table 4.9) - less than half the current national average. However in this community, exclusion from school impacted more negatively on the eldest and second siblings. They are chiefly the ones who bear the brunt of the lack of schooling with a mean of just 2.9 and 3.18 years respectively, the lowest in the sibship range; other poor ranks are those of the ninth (3.21 years) and fourth (3.75 years) siblings.

The age at which helping at the nest started for this sub-sample was rather early: 10.5 years on average, with a general mode of 10 years old; however, against any expectation created by the last paragraph, there was no relation between earlier age at starting to help in the household and birth-order. On the contrary, the eldest and second siblings had a mean age of 10.39 and 10.44, respectively, as helper debutantes, and it was rather the middle-born who were the earliest helpers from standard and large sibships (Table 5.4). This subject will be discussed in more detail in Chapter VI. As for the cause of the eldest and second siblings' abandonment of schooling, it must be sought in other aspects of their life-history.

A birth-interval of about one year between siblings, something not unusual among Indian populations, might account for the differences in consecutive siblings' age at starting to help, if parents made demands on both children at the same time. Table 5.4 suggests two such phases: on the one hand, a duo consisting of the second

and third siblings and, on the other hand, a trio formed by the fifth, sixth and seventh siblings. Given that, among the families of the Totonacas of Huehuetla, 78.1% of sibships are from three upwards (see Table 5.2 and Figure 5.3), the older siblings' companionship may be a potential factor encouraging early helping behaviours in later-born children.

Table 4.11 Reproductive subjects' mean age they started to help at their households

Birth order	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	N =
(Number of cases)	61	52	25	17	14	8	3	1	4	209
Mean age	10.39	10.44	9.24	9.24	9.86	9	8	10	9.75	9.99
Mode	10	10	8/10	10	11	7	-	10	-	Global: 10

There was a difference in age at starting to help with household chores between reproductive subjects (mean 9.90 years; N = 216) and non-reproductive subjects from another sub-sample (mean 10.79 years; N = 191) (Table 5.6). However, there was no difference due to sex: men did so at a mean age of 10.38 years, women at 10.42 years.

Table 4.12 Mean age (in years) at starting to help their households: the difference is not significant but appreciable in some of these sub-samples

	Men	Women
Reproductive	9.9	10.03
Non-reproductive	10.69	10.92
Only children	12.07	10.52
Non-only children	10.22	10.27

Our informants' birth-order distribution is shown in Figure 5.4.

In addition, being an only child seemed to be a decisive factor delaying helping behaviour in the case of males (but not females). Again, this subject and its implications will be discussed in more detail in Chapter VI using the entire sample group.

CHAPTER V. PERSONAL VALUES AND TRAIT PREFERENCES IN MATE CHOICE AS FACILITATORS FOR COOPERATION WITHIN THE HOUSEHOLD

The aim of this chapter is to analyse the personal characteristics and moral values reported by the interviewees which act as guiding principles for their social relationships, as well as the physical qualities and behavioural patterns that determine their preferences in their search and choice of a partner. Such characteristics not only have profound implications for their behaviours as individuals, but are also basic indicators that can signal or predict their capacity for involvement in cooperative processes at different group levels, including that of partnership.

Specifically it will attempt to analyse the questions: (1) whether and to what extent similarities exist between the genders with respect to their beliefs, attitudes and behavioural patterns, and whether these facilitate an affinity which can serve them in their enterprise as a couple; and (2) the value of this cross-sexual affinity for maximising their actions in cooperative processes. Furthermore, as an explorative exercise, different comments alluding to the Kgoyomes' behavioural patterns are contrasted with those of some foragers and urban Western groups recorded in the evolutionary literature, in a search for the best characterisation of the population's distinctive behaviours.

5.1 ARCHETYPAL ROLES BY SEX

Maize has for a very long time been the reliable staple which sustains the Totonaca Indian community; over 80% of caloric consumables are supplied by this plant and others associated with it in the *milpa* micro-environment; consequently, by far the

majority of household activities revolve around its cultivation. The relevance of maize is so great among them as to determine every household member's individual role, as much as hunting and gathering have done in other latitudes or times. Parallels can be drawn between being an industrious maize-grower and, for instance, with being a successful hunter in ancestral societies or a well-to-do person in westernised societies, as far as being a source of prestige and other benefits are concerned (Lee, 1984 [1979]).

There are only two main jobs in Totonaca society, farming and housekeeping, which since ancestral times have fallen into a traditional design according to gender. Although there are many other jobs, they remain subordinated to those two: indeed, even between these two, the fact that maize supplies the basic material for the household mean that it determines and limits everything else, including the housekeeping.

A real division of labour shaped around fixed roles conferred by gender is neatly practiced with the husbands engaged in the job of supplying maize as guarantee of the household's indispensable caloric income, and the wives processing the maize and foodstuffs, taking care of the children and attending to the domestic chores. At the same time, wives complement the family diet with vegetables gardened in the backyard, and these tasks together are what people mean by 'housekeeping', the other important job. Folk wisdom encapsulates it: men crop maize, women cook *tortillas* and everyone gets to eat – a sole economic process wherein the sexes realize complementary tasks for the household sustenance. Although the majority of Kgoyome females are usually subordinate to men's authority, their labour contribution is so important as to confer them with an authority and share in

decisions over the household's business, not only in the daily hustle and bustle, but with further-reaching implications.

Different from hunter-gatherer societies where women mostly do not participate in the prime activity of hunting, here women farm: 26.4% of female Kgoyomes reported farming as their main regular activity and an extra 5.9% state that farming forms part of their regular chores alongside other activities (for example, studying) whilst males do so in a proportion of 66.4% and an 7.4% respectively. Therefore, even if theirs is not an egalitarian society, the participation of women in the main economic activity (maize cultivation) as an auxiliary force, and even as the primary one in horticulture, saves them from being relegated to a more asymmetric position such as those registered in other traditional societies (see Friedl 1978, for a review of women's subordination). The implications of this fact can then be witnessed in the female Kgoyomes' entitlement, at least partially, to take ownership over the distribution of goods, even beyond the immediate household. For example, the decision by the household to extend significant resources or engage in significant cooperative acts with non-kin people is usually only definitive when there is consultation and agreement with the wife/mother. In the words of Friedl (1978, p. 5) "equality arises when both sexes work side by side in food production..." as in the case she cites of the forager Washo Indians of North America.

This premise is borne in mind when considering the very elaborate, laborious and time-consuming process necessary to prepare maize for ingestion. Kgoyome women invest a huge amount of time and effort into this process, as well as in cooking, comparable to the investment made by males in cultivation; thus, in this patriarchaltype economic structure, male pre-eminence is largely levelled out by the importance of women's labour and the multiplicity of the task undertaken by them in this final refining stage.

5.1.1 INTERVIEWEES' ACTIVITY OR TRADE

People's activities, however, and those of women in particular, are more complicated than they seem; frequently, this researcher saw women carrying extremely heavy bundles of kindling wood or water containers, which is supposedly a masculine job. Furthermore, growing vegetables in the house backyard is more frequently done by women and, from time to time, women do work on the farm plot (e.g. during harvesting), while it is not uncommon to see a man doing chores like washing clothes or cooking *tortillas* which are considered woman's work. Up to 19 activities were registered as regular for each gender (see Table 5.1) in the full questionnaire sample; however, in spite of *el costumbre* offering more limited professional crafts and occupations for women, thanks to the female versatility, the catalogue was equally diversified for both genders.

To detail the variety of occupations performed by people, it was necessary to ask for a secondary occupation during the interviews to get more complete information; for instance, some of the male informants, as well as being farmers, were traditional nurses or midwives, rather typically female occupations; by contrast, however, no female was a musician or catechism instructor. Table 5.1 also gives a more detailed breakdown of the different trades and occupations -- although it might be more appropriate to consider many more possible subtle variations and combinations.

Table 5.1 Broader catalogue of occupations performed by sex among the

Occupation	Men's fre	equency	Women's frequency		
	%		%		
Farming (not only maize)	215	65.3	57	16.9	
Carpentry	22	6.7	2	0.6	
Art or craftwork	5	1.5	9	2.7	
Cooking (not only tortillas)	5	1.5	13.8	40.9	
Embroidery and weaving	1	0.3	77	22.8	
Bakery	5	1.5	2	0.6	
Dress-making	2	0.6	25	7.4	
Ironing	1	0.3	3	0.9	
Building work	37	11.2	2	0.6	
Sawing	3	0.9	1	0.3	
Blacksmith	1	0.3			
Electrician	7	2.1	4	1.2	
Computing	7	2.1	1	0.3	
Nurse	2	0.6	3	0.9	
Sugar miller	6	1.8			
Catechism instructor	2	0.6			
Cattle/bee breeder	1	0.3	1	0.3	
Merchant	4	1.2	1	0.3	
Fisher	1	0.3		- <u></u>	
Midwife			1	0.3	
Hired housekeeper			4	1.2	
Driver			1	0.3	
Hairdresser			2	0.6	
Unemployed	2	0.6	3	0.9	
Total number of	19		20		
occupations					
Full sample (N = 816)	329	100	337	100	

sampled individuals from 16 years old upwards

(150 individuals of both sexes did not answer or answered as 'don't know' to this question)

Just as a simple example: according to my interviews, 88.6% of the Totonacas' children are born at home with a local woman or man acting as midwife; however such a widespread occupation is not mirrored in the interviewees' answers, because they do not declare it to be one until asked for a third or even a fourth activity. Most of the midwives are mature females repeatedly assisting at births for their neighbours, or their own daughters' and affines, but they do not consider it as an

occupation, rather just part of their daily knowledge and duties. Hence, most of the respondents did not even mention it during the interviews, unless specifically asked about secondary activities.

5.2 THE FAMILY AS THE STARTING POINT OF COOPERATION

As expected, family chores are closely concerned with economic activity, designed to be helpful within the family sphere, starting from childhood with simple duties that, as is logical, increase in number and complexity with age. School attendance is the only important factor which partially mitigates full dedication to family chores by youngsters, in part because it is encouraged by means of a scant government allowance paid in cash to mothers.

Table 5.2 indicates everyone over 16 years in the full sample is fully dedicated to four main activities: working in the family plot, housekeeping, studying, and looking after relatives; almost always, the activity load mentioned by subjects are combinations of these. Interestingly, in contrast to most Westernized societies, only an insignificant minority of respondents within the Kgoyome society considered themselves to be unemployed (usually when a non-ethnic job had come to an end).

Perhaps not surprisingly, housekeeping is the single most important activity for women, but it is interesting to note that women also work on the land as a second activity; men, for their part, are principally farmers and when young are more occupied than women in "studies", and so take only a very limited part in housekeeping. In contrast to the past, when schooling was quite a marginal activity for children, nowadays it has become more common, even entrusted to them as a duty.

Activity performed in the household	Men (Frequency)	%	Women (Frequency)	%
Work on the land	239	66.4	111	26.4
Housekeeping chores	13	3.6	221	52.6
Studies	61	16.9	35	8.3
Unemployment	2	0.6	1	0.2
Helping the family in several tasks	15	4.2	16	3.8
Doing a job and studies	4	1.1	1	0.2
Doing a job and housekeeping chores	7	1.9	22	5.2
Doing a job and helping the family	16	4.4	2	0.5
Studies and housekeeping chores	0	0	1	0.2
Studies and helping the family	1	0.3		0
Housekeeping chores and helping the family	2	0.6	10	2.4
Full sample (N = 780)	360	100	420	100

Table 5.2 Regular activities performed by respondents over 16 years of age

The activities that are considered relevant for a person in his/her lifetime are determined by tradition (*El costumbre*), differentiated by gender and age. When it comes to work and economic activity, *el costumbre* seems to be more flexible for the woman compared to the man and more flexible in this area than in other areas of her life. Nevertheless, for both sexes, looking after relatives, giving them support and other aspects of daily family help are constant features. The next question, a preliminary approach to the ways in which they help their relatives, was answered by our interviewees irrespective of marital status and is shown in Figure 5.1.

As the graph shows, it is clear that the most common way to help the household is through their most regular activities, and daily helping with family chores was the most frequent activity: men helped mainly through farming activities, women by housekeeping, strictly following the pattern of the differentiated division of labour by gender. A two-sample Mann-Whitney Test (Asymp. Sig., 2-tailed: p < 0.001) suggests that the differences between the kinds of help given by men and women are significant: (Z = -9.93, n = 708, r = -0.37). In other words, the kinds of tasks performed by the household members are marked by gender, according to tradition.

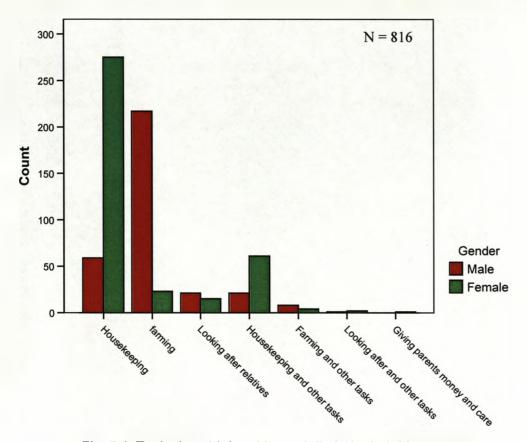


Fig. 5.1. Tasks by which subjects daily help their kin

5.2.1 CHORES OF THE MARRIED

Once married some men begin, for the first time in their lives, to be systematically involved in other kinds of duties, including nominal "women's work" such as tidying the house or even making *tortillas*. Women, for their part, increase their participation in farm work. Figure 5.2 summarises the way in which the activity profile of the Totonaca changes on becoming married (n = 550). The label in the graph 'more of determined tasks' corresponds mainly to such gender-typical tasks as making 'tortillas', carrying food and water, milling and grinding the ingredients for cooking

and so on, tasks that become more common for some individuals (notably women, of course) after marriage.

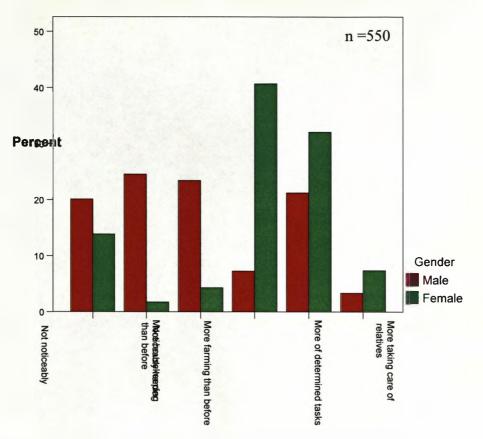


Fig. 5.2. Ways in which tasks changed after marriage

It is logical that once their children are born, looking after the children turned out to be among the most important of the women's tasks, whilst men enrol in diverse jobs, including as a salaried worker to sustain the family's expenditures. A small proportion (11.7%) of both men and women were of the opinion that they had to work harder than before, although this was more often emphasized by males, perhaps because outdoor labour is, in general, more physically demanding. Conversely, 16.6% experienced no change in their new life. In general, it could be said that, although the basic activities remained much as before, much as tradition demanded, they were now more diversified by additional chores related to farming and housekeeping. When asked about their tasks after marrying, housekeeping turns out to be the second most commonly performed task for males, while farming is the third most common for females (ignoring the general responses "traditional" or "usual duties"). In other words, the traditional tasks of the other sex become people's secondary tasks after marriage, producing an assortative arrangement based on the genders' complementarity. Table 5.3 shows a more complete catalogue of the tasks of married individuals.

Table 5.3 Tasks	by which	subjects sup	oport their	household:	Although	more
diversified, tasks	after marri	iage are still	linked to tr	adition		

	Mal	le	Fen	nale
	Frequency	Percent	Frequency	Percent
The usual tasks				
Males: farming	36	20.1		
Females: housekeeping			32	13.8
To make tortillas	11	6.1	49	21.1
To carry out food	1	0.6	5	2.2
To carry out water	8	4.5	6	2.6
I became a main	13	7.3	94	40.5
housekeeper in the				
household				
To take care of the	5	2.8	15	6.5
children				
To mill/ to grind	1	0.6	4	1.7
I become a main farmer	42	23.5	10	4.3
in the family plot				
To make some brown	1	0.6	1	0.4
sugar loaf				
To make craftworks	1	0.6	0	0
Men: working in the plot	44	24.6		
Women: working in the				
house			4	1.7
To support the	10	5.6	8	3.4
household				
Diverse jobs	5	2.8	1	0.3
To take care of my	1	0.6	2	0.9
partner				<u> </u>
(N = 410)	179	100	231	100%

(This analysis does not include 35 men and 68 women who did not answer this question)

Finally, the way in which subjects referred to their activities as "the traditional ones", seems to express the strong attachment to following tradition as a way of conducting themselves after marriage. In fact, in facing the new life of the married, following *el costumbre* represents a rule of thumb that makes it easier for them to keep the household and the community on their side, with the advantages implicit in maintaining others' approval.

5.3 THE VALUE OF *EL COSTUMBRE*

Cooperation has been universally understood as a component of morality. Within the evolutionary field, Alexander and Krebs are some of the most enthusiastic supporters of the suggestion that morals have a common origin, if not a cause, in ancestral scenarios of group reciprocity (Alexander 1979 and 1987; Janicki & Krebs 1998). Coincidentally, helping behaviours are considered important matters in themselves by Totonacas, but in addition, are also considered as the means to achieve other vital aims; so, helping conspecifics is strongly encouraged by the prescriptions of *el costumbre* (i.e. customary behaviour).

Since *el costumbre* acts as a sanctioning institution (Henrich 2006; Gürerk et al 2006), the more important a behavioural pattern is for existence, the more likely it will be included as a moral issue in the prevailing norms which tend to preserve prosocial processes and to discourage selfishness. In fact, traditions in general and *el costumbre* in particular are some of the most apt examples for demonstrating how the imitation of the most common types of behaviours, (explained by the conformist frequency-dependant bias in Richerson and Boyd's terms (2005)), is an adaptive strategy which proves more successful than merely leaving things to chance or going against the prevailing trend. Furthermore, it is an important premise for mate choice

and may also constitute the main mechanism for achieving an assortative pairing, if one offers in the mate-market those qualities that are considered most attractive.

What are those moral concepts considered as ideal in this population's beliefs? Are their cooperative manifestations a harmonious counterpart to their inner values? And what are the kinds of moral objectives motivating their actions? It was therefore important to probe, at least at an exploratory level, what are the moral concepts most highly valued by the population in conformity with *el costumbre*. If it is the case that the ethnic culture is based on a set of moral values, with a basic rule of thumb acting as the mechanism for its expression, this makes it most probable that patterns of cooperation will be further consolidated as a universal norm.

Twenty-two conceptual categories gathered from the pilot test were offered to a sub-sample of 147 non-reproductive interviewees who were asked to sort them into the most important values in life in an ordinal list based on importance for everyday life. They were also asked to add any additional categories that they felt were missing from the list.

At the end of the survey, the final list contained twenty-two different items to be valued¹. Most respondents only picked out a handful of the values, although twenty-three persons went as far as picking out and ordering up to twenty choices of different items. Here, for the sake of simplicity, in Table 5.4, only the ratings of the three highest items for the eight first choices ranked by the interviewees are shown.

A simple glance at the cells shows the predominance of nuclear family members (close relatives apart from wider kin), health and love (that dedicated to a partner, as

¹ The full list consisted of: Life, Money, Children, Grandchildren, Love, Sex, Empowerment, Health, Virtue (to earn a place in heaven), Relatives, Good life (Enjoyment or Pleasure), Mother, Father, Siblings, Work, God, Spouse (his/her prospective partner), Nation, *El Costumbre*, Land (see explanation of concept of *Land* in the Ethnographic Chapter), his/her Family and Comprehension.

well as a more abstract feeling) as the most valuable concepts, with both sexes in close agreement. After these appear concepts such as 'life', 'sex' and 'money'.

In the three first-ranked places, both horizontally and vertically were 'life', 'money' (or any currency), 'love', 'health', 'father', 'mother' and '(future) children'. In a second block from the fourth to the middle rank rows include 'sex', 'work', 'help', 'grandchildren', 'heaven', 'siblings', 'enjoyment', 'empowerment' and 'kin', seemingly reflecting both some universal values and some hallmarks of their own culture.

		Freque	ncy (in perc	entages) with	h which a cor	cept was ra	nked from 1-8	in order of pric	orities in life
n = 147		No.1 Priority	No.2 Priority	No.3 Priority	No.4 Priority	No.5 Priority	No.6 Priority	No.7 Priority	No.8 Priorit
Three most	1	Life	Money	Love	Love	Love	Sex	Enjoyment / Mother	Father
popular		30.9	18.9	15.9	33.3	15.7	15.2	14.3	12.1
concepts given	2	Money	Health	Health	Money	Health	Love	Heaven / Autonomy	Mother / Heaven
in each		15.5	17.8	14.6	14.3	11.4	13.6	11.1	10.3
rank by men	3	Father	Love	Children / Father	Grand children/	Sex/ Heaven	Children / Enjoyment /	Sex	Autonomy
ð		11.3	14.4	8.5	Mother 9.5	10.0	Autonomy 10.6	9.5	8.6
			·		1	• • • • •	•		
Three most	1	Life	Life	Love/ Health	Love	Father	Heaven	Kin/ Siblings/	Father
popular concepts		44	23.6	14.8	21.7	17.0	13	Heaven 14.3	15.4
given in each	2	Money	Love	Mother	Work/ Father/	Health	Sex/ Father/	Mother	Children
rank by women		16	14.5	11.1	Health 13.0	14.9	Siblings 10.9	11.9	12.8
	3	Health	Mother/	Father/	Life	Heaven	Love/	Money/	Siblings
Ŷ			Health	Life		/Money	Money	Sex/	
		10	12.7	9.3	8.7	10.6	8.7	Autonomy 14.3	10.3

Table 5.4 Priorities in life in rank order

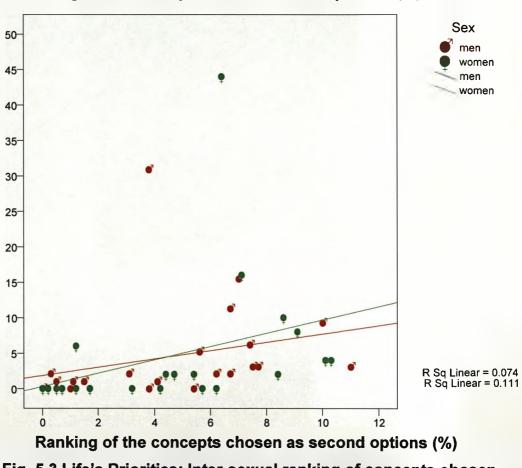
Sampled subjects were asked to examine a list of 22 concepts considered important in life which had been drawn up in a pilot exercise, and to begin ranking them in order of priority. Reading from left to right, we see the frequency with which a particular concept occupied a particular rank (No.1 priority - No.8 priority) for an individual, i.e. their first priority in life, second priority etc, from the given list. Reading from top to bottom, we also see the top three choices within each of the rankings (First, Second, Third). For example, although the concept of "Father" is the third most popular choice for the first rank of priority (11.3%), it is also the third choice for the third rank (8.5%) and even the first choice for the eighth rank, in not dissimilar proportions (12.1%). The table is split between men and women, and we can see that there were neither substantial intrasexual nor inter-sexual differences. Far behind remained a cluster of values inherent to their particular ethnic identity; items such as 'nation', '*el costumbre*' itself and 'land'/'soil'/'earth' which in Spanish and Totonaco may be encapsulated in one word. Boredom with giving answers may explain the diminishing number of respondents as the selections continue.

Comparing the males and females' preferences, the patterns do not vary but the nuances do: males choose 'father', females 'mother' most often in first place. It is notable that these people seem to have very similar ideas about what is valuable for them, despite their being non-reproductive, almost all unmarried, and, in most cases, young. This general consistency produces the impression that they are totally focussed on investing most of their efforts in the same goals as future couples, sharing and pursuing the same goals in their lifetime as community members.

The scattergram of Figure 5.3 permits us to examine the general trends of preferences on the raw rankings that each sex makes for both the first and second ranked concepts. In the Figure 5.3 every point represents the intersection of the percentages obtained by each of the 22 concepts as they were prioritised by the subjects The males' scattergram pattern bears a considerable resemblance to the females' pattern; so that the fit lines of both sexes' distribution are similar despite some outliers (e.g. the very high scores for 'life' as the uppermost concept). For the women, it accounted for almost half of all of the choices, whereas men did not rate it so highly (44% vs. 30.9%).

When the data for the two sexes are plotted alongside each other, as shown in Figure 5.4, the resulting distribution suggests that there is quite close agreement between the sexes in the way they rank the different items. In particular we note that:

(a) There was a significant positive intersexual correlation between male ranking of the concepts chosen in the first options and the female ranking of the concepts chosen in the first options (rs = .713, n = 22, p< .000, two tailed). In fact, it is a strong correlation.



Ranking of the concepts chosen as first options (%)

Fig. 5.3 Life's Priorities: Inter-sexual ranking of concepts chosen in 1st & 2nd places

(b) There was a significant positive intrasexual correlation between the male rankings of the concepts chosen in the first options and the male ranking of the concepts chosen in the second options (rs = .675, N = 22, p < .000, two tailed).

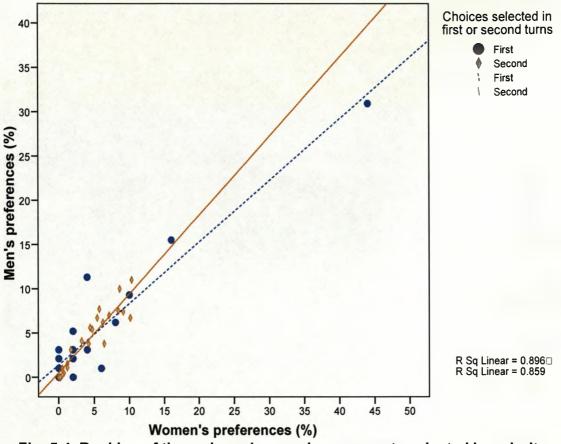


Fig. 5.4. Ranking of the main and secondary concepts selected by priority

(c) There was a significant positive intersexual correlation between male ranking of the concepts chosen in the second options and the female ranking of the concepts chosen in the second options (rs = .922, N = 22, p < .000, two tailed). This is a very strong correlation.

(d) There was a strongly significant positive intrasexual correlation between female ranking of the concepts chosen in the first options and the female ranking of the concepts chosen in the second options (rs = .778, N = 22, p < .000, two tailed).

Figure 5.5 permits us to see more in depth the interplay between coincidences and differences in the two sexes' preferences; starting from the analysis for the ten first median scores per sex, the scatterplot shows a clear alignment of the intersection points. Most of them are quite near of the regression line. Only in respect of two categories do the two sexes disagree significantly: the numbers 12 and 13 correspond to "mother" and "father" and their location on the graph indicates that women rated both rather higher than did men, suggesting that women have a higher attachment to their parents than men. Overall, however, the two sexes' median values correlate significantly with each other: r = .938, p (two tailed) <.01.

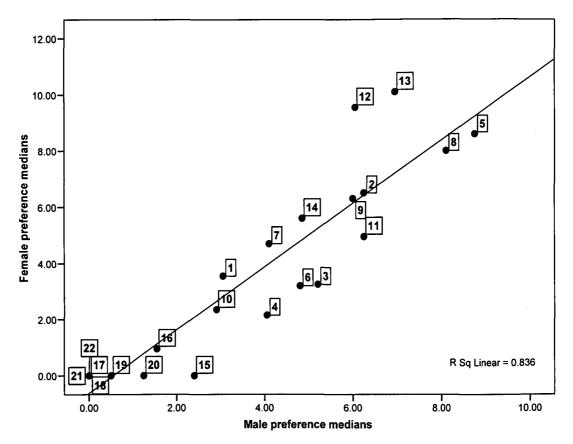
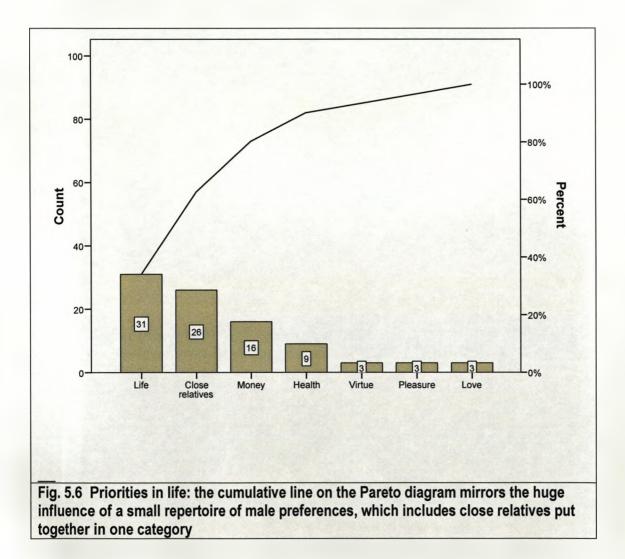


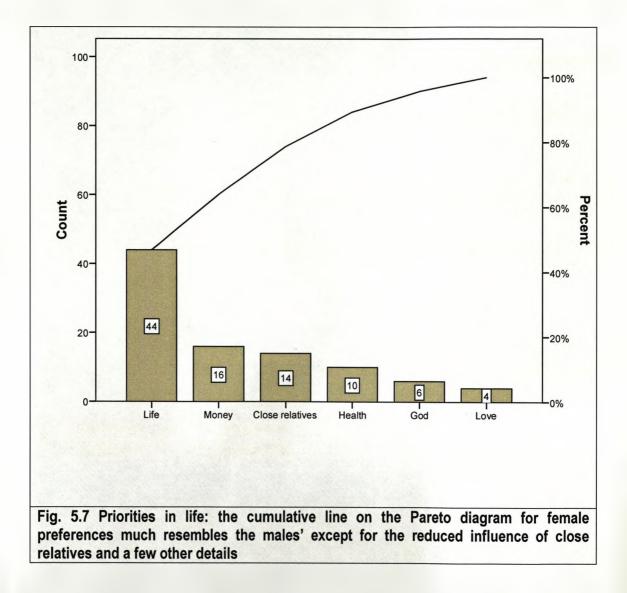
Fig. 5.5. Apart from the preference for the same-sex parent [12 and 13], a clear cross-sexual convergence of interests is apparent

To help clarify the relationships between these preference rankings, I used a Pareto diagram approach. This technique allows us to separate the "few vital elements" from the "many trivial ones" (Powers 1987), foreseeing that in a set of 22 variables no more than four or five among them will be responsible for most of the consensus between the sexes.

To facilitate this analysis, I undertook two simplifications of the data. First, in order to weigh up the real importance of the family link, all those members pertaining to the same family class and living in the bosom of the nuclear family, i.e. mother, father, children, siblings, and spouse, were combined in the single class of 'close relatives'. Second, for the sake of graphical clarity, I removed all items with less than 2% of frequencies from the plot, something unlikely to distort the results as in the case of the men's scores, more than 80% of the weight lays on the four most frequently chosen concepts of "life", "close relatives", "money" and "health" as Figure 5.6 shows.



It is the same for the women's diagram, in which these same four concepts account for more than 80% of the results; except for the swapped places between 'money' and 'close relatives' in the importance order and a slight greater importance of two concepts, 'love' and 'god', the picture is the same than that of the men (see Figure 5.7).



In the light of their structural division of labour, as shown in the last section, cooperation must be guaranteed in order that the sexes' complementarity can be achieved, starting from the individual role and extending into the heart of the household. The convergence of both genders is also manifest as far as ultimate and proximate moral goals are concerned.

It may be assumed that the values contained in their replies act like a foundation that upholds cooperative patterns, which are directed, cognizant or not, towards a basic familial strategy of sharing investments and to supplying the household as required by their demanding milieu (Lack 1968, as quoted by Krebs and Davies 1993).

This cross-gender similarity could represent an advantage in the search for a partner on the grounds of affinity for a kind of assortative mating and long-lasting marriage link under the almost universal monogamist regime which is customary among these people (see the previous ethnographic sections). It may be that this moral affinity represents an additional indication of the specialization in labour patterns that seems so advantageous for a more effective family unit. In this respect, it contrasts with the alternative hypothesis posed by some authors of an insurmountable conflict between the genders (see Bird 1999). The next section will deal with the details characterising the Kgoyome's mating market.

5.4 FREELY CHOOSING A PARTNER

In past times Totonaca parents used to arrange the nuptial fate of their children and it was not uncommon for it to be arranged from a child's birth in a way intended to consolidate the family's status and socio-economic ties. Ritualized transactions such as giving dowries, matchmakers' participation or laying claim to a suitor were usual until 40 years ago. At least 8 older interviewees of both sexes told us that they had been married before reaching puberty (12 years old). Since then, these customs have been falling into disuse, and become rather an exceptional matchmaking mechanism.

Carrying out a mate preference survey among suitors would be fruitful only if they are really free to choose. Some members of the local old men's council averred that people were free to choose; but, to be totally sure, as a first step, it was necessary to ascertain the situation among our subjects. Figure 5.8 shows the answers given by the unmarried (and non-reproductive) individuals in our sample to the question of who chooses a spouse.

Males as potential grooms took the initiative in approaching females from informal dating to formal courtship in 63.7% of cases, while females did it in 9.7% of cases; a simultaneous choice was made 25.7% of the time and a third person acted as a procurer in 0.9%. 23.4% claimed that parents and families had played an important role in terms of facilitating or preventing a relationship; 19.8% of them stated that living nearby was the main precipitating factor in their getting together.

In any case, the ultimate decision for accepting a date or a marriage proposal clearly belonged to women. 85% of both sexes of informants (n = 180) declared this to be so. In a further question, only one subject out of 41 expressed some fear of reprisal in the case of refusing a friendship or commitment offer.

Mate selection was not a surrogated decision, but undertaken following a courtship stage in the context of a real mating market (Nöe and Hammerstein 1994; Nöe et al 2001; Pawlowski and Dunbar 2001) in which the prospective partners start by engaging as girl/boyfriends, then pass through a stage as fiancées, to culminate in the possibility of a stable marriage in which the basic terms to be negotiated are the personal traits they offer and demand (Pawlowski and Dunbar 1999a). In fact, young

people conduct themselves as if they know which traits are preferred by the opposite sex and that they should offer in order to raise their chances of securing a partner.

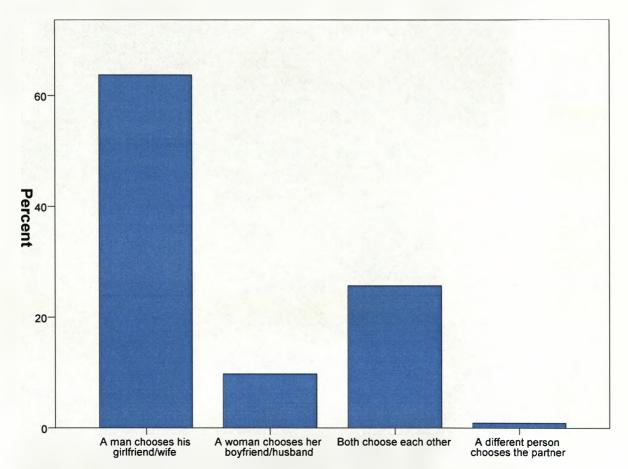


Fig. 5.8. Kgoyomes still make a free choice of partner despite the apparent male bias in mate selection

5.4.1 THE MOST ATTRACTIVE TRAITS IN A MATE

The next sub-sections are concerned with both the preferred traits in a prospective partner and the personal traits considered attractive to members of the opposite sex in the experience of the sub-sample composed of sexually mature, non-reproductive people. This sub-sample included 116 individuals, of whom 60% were males and 40% females; 93.3% were single and the rest separated/widowed people; their mean age was 22.89; the modal age was 17 years old and 89.2% was aged under 35, indicating a highly skewed distribution.

5.4.2 PARTICULAR METHODOLOGY

The procedure, by means of a pair of multiple-choice questions, consisted of asking, firstly, about what was the most attractive characteristic in an opposite-sex mate and, secondly, what was the most important trait in a person of his/her own sex to attract a mate of the opposite sex. The initial traits to be rated were provided by the translators and the first dozen subjects. More traits were added later as they were mentioned by other interviewees. At the end, the resultant list was an ample and heterogeneous catalogue of physical, behavioural, mental, and socio-economic characteristics, applicable to men and women. The pilot subjects' answers were incorporated into the options set and the improved questionnaire applied to the wide sub-sample. The complete list of traits is as follows: pretty/handsome, rich, faithful, good-hearted, kind, respectful, single, virgin, abstemious, well-mannered, hard-working, reciprocal-lover, honest, sociable, pleasant, generous, neither/others, responsible, sincere, attentive, white-skin and nice.

Respondents were given five opportunities to choose their preferences for the most attractive traits from the total list of 22 traits, for their own sex and the opposite sex; they were advised that, if they wished, they could list more than five traits but always on the condition that every trait should be ranked in strict priority order. So, the number of traits selected was open to the subjects' choice; as a result, a few of the respondents signalled only one trait as the most attractive for each sex, but some

others chose ten or even more. Certain traits were very popular, others received only a few votes and two (obedient and helpful) received no votes at all.

However, it is necessary to comment on some of the terms used in the questionnaire. Some of the terms employed might not be so easy to understand because of double-translation complications or the Totonacas' idiosyncratic interpretations. The term 'reciprocal-lover', for example, connotes a basic empathy in a strong mutual connection; it means exactly the contrary of 'unrequited lover'. Further, the term 'neither' is not an absence of traits nor a reluctance to be involved in an inter-sexual engagement, but rather means "nothing unusual", as a disposition to accept any partner with no other restriction than that typical in a common standard: a man for a woman and vice-versa, a young person for another young one, a bachelor for a single woman and so on.

The apparent duplication in the list of altruistic characteristics, namely 'goodhearted' and 'generous' can be clarified with the help of Pawlowski and Dunbar's (1999) categories, i.e. the first term describes a social attitude of goodness and the second an open-handedness to give goods away, even in circumstances of scarcity, putting aside any meanness - that is to say, having sufficient resources is not enough, but that being disposed to share them also matters. 'Kind', 'attentive', 'wellmannered', 'pleasant', etc., mean much the same thing in Spanish and are, in fact, commonly used synonymously; but some nuances were detected by Totonaca-Spanish speakers that made us leave them in the questionnaire; again Pawlowski and Dunbar's (1999) classification is useful to discern the differences.

5.4.3 PROCEDURES

The answers were analysed from four different viewing points depending on the combination of three variables: firstly the sexes of the respondent and the targeted subject; second, the combination of the gender of the subject and the targeted gender, i.e. intrasexual, intersexual or sex-irrespective choices; and third, the prioritised choice of traits (which are listed in section 5.4.2), i.e., first (or main) and secondary. As a consequence, the results are analysed in four ways: (1) the sample as a whole irrespective of the interviewee's gender; (2) intersexual, i.e., subjects of each sex choosing the most attractive traits in an opposite-sex prospective mate; (3) intrasexual, i.e., subjects of each sex judging the most attractive traits in a person of the same sex. Finally, (4) by asking how well one sex's preferences matched the other sex's (in effect, looking at the skill with which each sex was able to predict what the opposite sex prefers (intersexual) or what a person looking for a mate must offer in order to be attractive (intrasexual).

5.4.4 RESULTS

As a first step, I explored the data to determine the general trends in the distribution of the preference variables. Figure 5.9 plots the frequency with which the various traits appear as first choice for each sex against their frequency as second choice. The fit lines for each sex's distribution are close, and more or less follow the main diagonal. The coefficients of determination (shown by 'r squared' on Figure 5.9) are 0.44 and 0.69 respectively for males and females, indicating that while there is broad consistency in preference ratings within each sex, males do exhibit slightly less consistency than females do. A couple of particular scores within each sex's distribution deviate from the total fit line, although these do not affect much the general impression of clearly convergent trends.

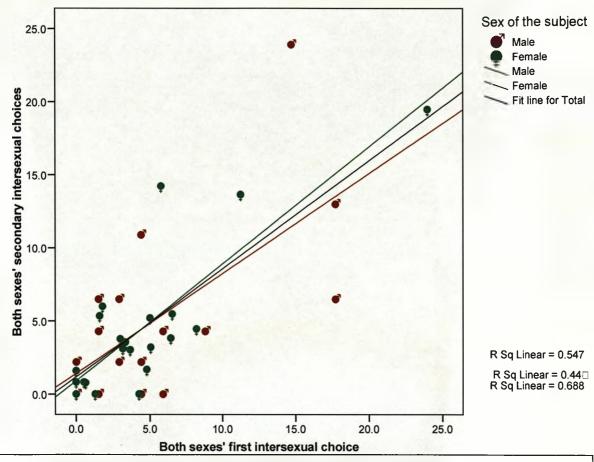
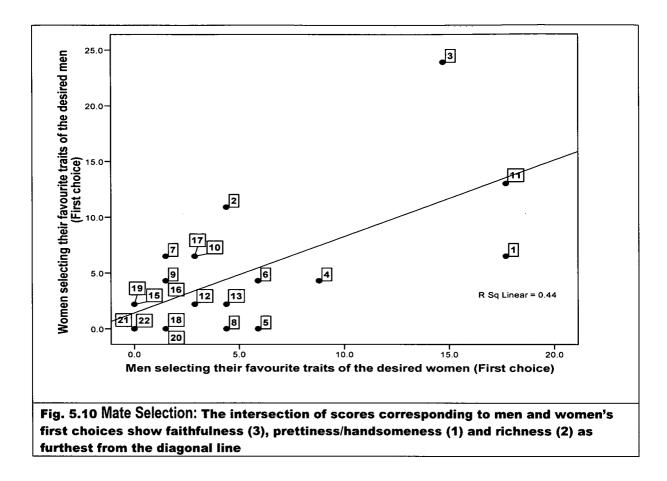
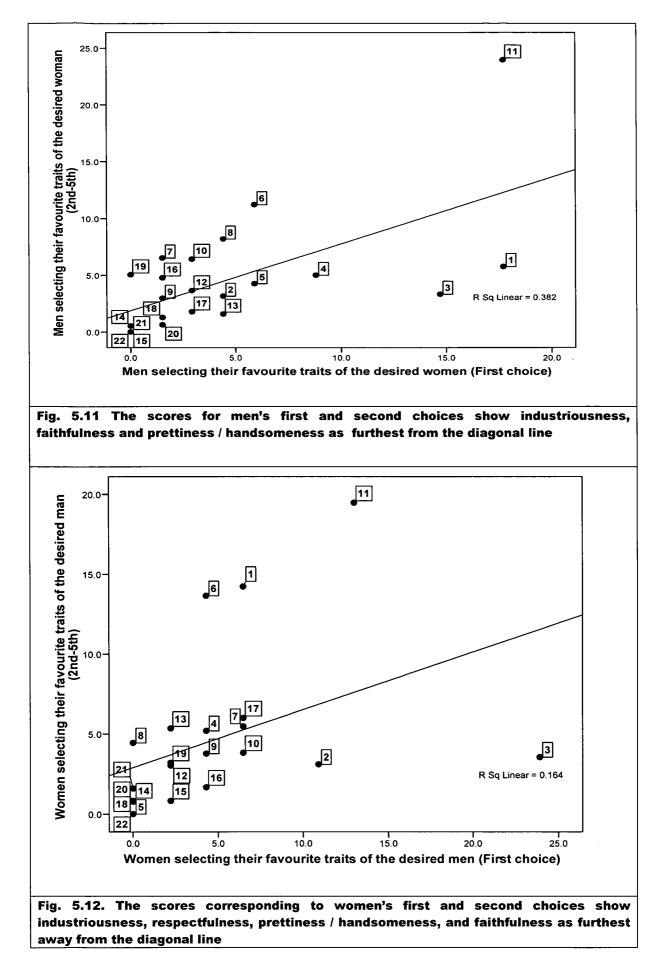


Fig. 5.9 Scores for preferred main and secondary traits showed high level of inter-sexual convergence

Figures 5.9 to 5.11 contrast preference scores between three of the most interesting combinations of categories: men's first choice against women's first choice, men's first choice against men's second choice and women's first choice against women's second choice. While many scores hover around the main diagonal, a number of traits deviate away from the line of equality. These include faithfulness (3), prettiness/handsomeness (1) and richness (2) in Figure 5.9; being hard-working (or

industriousness, 11), faithfulness (3) and prettiness/handsomeness (1) within Figure 5.10; and industriousness (11), faithfulness (3), respectfulness (6) and prettiness/handsomeness (1) in Figure 5.11.





5.4.4.1 FIRST VIEWING POINT: CROSS-SEXUAL ATTRACTIVENESS

One of the most noticeable outcomes consistently present in every one of the viewing points analysed here is the high rating for 'hardworking'. Indeed, irrespective of sex, both when self-rating and when rating members of the other sex, 'hard-working' was the trait most preferred in a man and very important in a woman. Interestingly, there are other similar cases of agreement between the sexes, such as 'faithful', 'pretty / handsome', 'respectful', and 'good-hearted'. These traits and a few others consistently stand out in every analysis (see Tables 5.5 to 5.12).

Table 5.5 A sub-sample of non-reproductive subjects of both sexes choosing the most attractive traits in a woman and a man shows reiterated coincidences between them

Traits	Both sexes' preferences for female traits		Both sexes' preferences for male traits		Total	
	Frequencies	%	Frequen cies	%	Added frequencies	Weighed percentages
Pretty/Handsome	<u>17</u>	<u>14.7</u>	11	<u>9.7</u>	28	<u>12.2</u>
Rich	5	4.3	8	7.1	13	5.7
Faithful	<u>23</u>	<u>19.8</u>	16	<u>14.2</u>	39	<u>17</u>
Good-hearted	9	7.8	8	7.1	17	7.45
Kind	9	7.8	0	0	9	3.9
Respectful	7	6	8	7.1	15	6.55
Single	3	2.6	3	2.7	6	2.65
Virgin	3	2.6	2	1.8	5	2.2
Abstemious	2	1.7	2	1.8	4	1.75
Well-mannered	5	4.3	4	3.5	9	3.9
Hard-working	<u>15</u>	<u>12.9</u>	<u>28</u>	<u>24.8</u>	<u>43</u>	<u>18.85</u>
Reciprocal-lover	3	2.6	4	3.5	7	3.05
Honest	3	2.6	3	2.7	6	2.65
Sociable	0	0	2	1.8	2	0.9
Pleasant	1	0.9	1	0.9	2	0.9
Generous	1	0.9	4	3.5	5	2.2
Responsible	5	4.3	5	4.4	10	4.35
Neither/Other	1	0.9	1	0.9	2	0.9
Sincere	0	0	2	1.8	2	0.9
Attentive	3	2.6	0	0	3	1.3
White skin	0	0	0	0	0	0
Nice/Obedient	1	0.9	1	0.9	2	0.9
Total	116	100	113	100	229	100

These results present a general picture of the people's view of themselves as hardworking (industriousness and earning potential), faithfulness and physical goodlooks. Such a result tallies with the first impression produced in visitors to the Highland Totonacas as being an industrious and deferential population made up of highly monogamous and companionate couples. However, it is immediately apparent that the Totonaca concept of attractiveness – the embodiment of a person well-equipped for hard work – is to a large extent different from the Western idea. The ecological-cultural circumstances of these people may be the explanation for the differences (Alcock 2001).

One point worthy of note is that subjects of this sub-sample consistently chose almost the same restricted set of traits for both females and males as the most attractive ones in a prospective partner in their two first opportunities; the frequencies for their answers, culled from those five options, when compared by the ordinal turns in which they were asked (i.e., the first females' answers against the first males' answers and the second females' answers against the second males' answers) showed significant similarities (Tables 5.5 and 5.6).

The extensive work on mate choice criteria in western populations has identified a number of core attributes that men and women prioritise when choosing prospective mates. These tend to focus on fertility (age and physical characteristics), commitment to the relationship (parental investment behaviour), social attitudes, social skills, sexual behaviour (fidelity) and wealth as well (resources or capability to earn them in the future) (Pawlowski and Dunbar 1999a; and 2001). Table 5.6 recasts the traits identified by the Totonaca into Pawlowski and Dunbar's (1999a) categories, although in doing so, we need to be a little cautious about distinguishing the semantic nuances of traits that in common parlance often pass for being synonymous, though

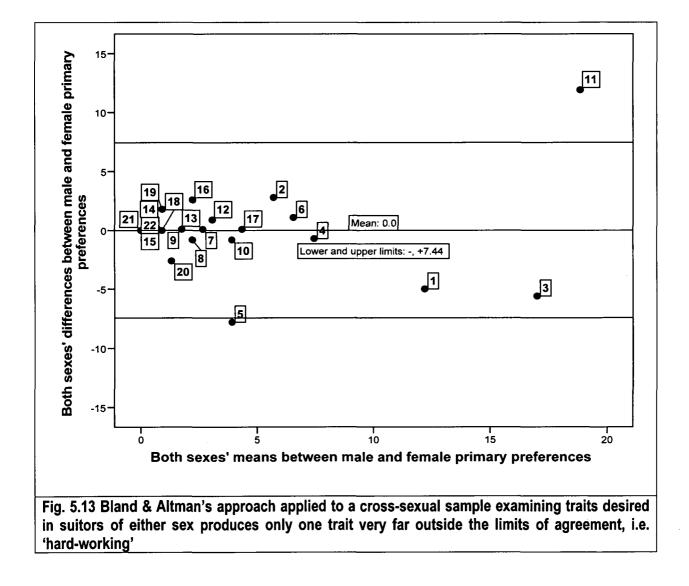
in fact are not always exactly equivalent. In these terms, the resources category is by far the most common trait in choosing a boyfriend or a husband, followed by commitment and social attitudes categories. It is different as far as choosing a girlfriend or a wife is concerned, since the first place is given to commitment, with the resources and social skills categories being much less in evidence.

Table 5.6 The attractiveness of a pool of traits to a cross-sexual sub-sample, grouped together according to Pawlowski and Dunbar's (1999a) categorization

Pawlowski and Dunbar's categories	Traits	Attractiveness of the female traits (irrespective of the interviewees' sex) %	Attractiveness of the male traits (irrespective of the interviewees' sex) %
Physical	Pretty/Handsome		
attractiveness	White skin	14.7	9.7
Resources/	Hard-working		
Wealth	Rich	18.1	<u>35.4</u>
	Generous		
Commitment/	Faithful		
Fidelity	Single		
	Reciprocal-lover	<u>29.3</u>	24.8
	Responsible		
Social skills	Kind		
	Well-mannered		
	Sociable	15.6	6.2
	Attentive		
	Nice		
Sexual	Virgin		
behaviour	Pleasant		
	Honest	6.1	7.2
	Sincere		
Social attitudes/	Good-hearted		
Interests	Respectful	15.5	16
	Abstemious		
Neither/Other		0.9	0.9
		100%	100%

To explore these patterns in more detail, I used the *Bland-Altman limits of agreement* approach (Miles and Barnyard 2007). This test determines the range (± 2 SD of the

mean) within which a normally distributed dataset will be distributed. The method sets the mean at zero (equivalent to the line of equality between the two datasets), with the limits set by the actual distribution at ± 3.72 SD. The majority of scores fall close to the equality line that signals total coincidence —or zero differences—between the two datasets, and only one trait ('hard-working', trait No. 11) lies outside the 2SD range.



Although 'kind' (trait number 5 in the Figure 5.13) lies just outside the 2SD range, this may have more to do with the fact that there were no scores for the male sub-set because of the linguistic confusion already noted previously. So, the only disagreement over desirable traits in the cross-sexual sample concerns 'hardworking', because there is a general perception that being "hard-working" is a more important trait for a man than for a woman.

5.4.4.2 SECOND VIEWING POINT: ATTRACTIVENESS OF TRAITS THROUGH THE INTER-SEXUAL PREFERENCES

Notice that whilst labour activities are a point of gender distinction in a traditional society, in this community there is not so much rigidity that lines cannot be crossed and in fact the chores of each sex do cross archetypal gender lines. It is also unlikely that people in fact base the selection of a mate on just one or two traits. Rather, they probably make use of a varied set of traits that are hierarchically ranked by the particular beholder (Symons 1995; Pawlowski and Dunbar 1999b). A limited set of traits are eventually taken as more relevant and are usually prioritised over others. Thus, Table 5.7 gathers together the answers from the five choices that informants made about the most attractive traits in the opposite sex. The most preferred traits are labelled as 'first' or 'primary'; the next four, were pooled into a single category of 'secondary' preferences.

Apparently, the two genders attributed an overwhelming importance to 'hardworking' in a mate: a trait composed of varied aspects including moral and physical ones (because of the strength and commitment required by physical jobs traditionally performed), but taking into consideration the fact that the Totonacas are a people of limited means living at times in rather hand-to-mouth circumstances, and whose only secure source of resources is their work on the land, 'hard-working' must be

considered as directly connected to Pawlowski and Dunbar's (1999b)category of resources or wealth.

Table 5.7 Inter-sexual preferences for traits in a prospective mate. Frequency of First and Secondary choices are shown in percentages and the top two traits in each rank are underlined

Traits	Men about female traits		Women abo	ut male traits
	(%)		(%)
	First	Secondary	First	Secondary
	preferences	preferences	preferences	preferences
Pretty/Handsome	<u>17.6</u>	5.8	6.5	<u>14.2</u>
Rich	4.4	3.2	10.9	3.1
Faithful	14.7	3.3	<u>23.9</u>	3.6
Good-hearted	8.8	5.0	4.3	5.2
Kind	5.9	4.3	0	.0
Respectful	5.9	<u>11.2</u>	4.3	13.7
Single	1.5	6.5	6.5	5.5
Virgin	4.4	8.2	0	4.5
Abstemious	1.5	3.0	4.3	3.8
Well-mannered	2.9	6.4	6.5	3.8
Hard-working	<u>17.6</u>	<u>24.0</u>	<u>13</u>	<u>19.5</u>
Reciprocal-lover	2.9	3.7	2.2	3.0
Honest	4.4	1.6	2.2	5.4
Sociable	0	.5	0	.8
Pleasant	0	.0	2.2	.8
Generous	1.5	4.8	4.3	1.7
Responsible	2.9	1.8	6.5	6.0
Neither/Other	1.5	1.3	0	.0
Sincere	0	5.1	2.2	3.2
Attentive	1.5	.6	0	.8
White skin	0	.0	0	1.6
Nice/Obedient	0	.0	0	.0
Total	100	100	100	100

In terms of primary preferences, 'hard-working' turned out to be a crucial quality acknowledged by both sexes, although counter-intuitively, men gave it more importance than women. For the men, it tied with "prettiness" to make their first placed choice of traits in a prospective partner, and was their overwhelming second choice. For women it was only surpassed by "faithful" as their first choice, and was followed by "rich" and "handsome" – the latter a quality which women also valued to a high degree.

Whereas women showed more inclination than men towards elements of behaviour that comprise commitment/fidelity in the terms of Pawlowski and Dunbar (1999), namely faithfulness, respectfulness, singleness and responsibility; men, for their part, gave more varied answers but put among their top five a physical characteristic such as prettiness and another one closely linked to a physical and a moral requirement such as being a 'virgin'.

Once the traits were transformed into Pawlowski and Dunbar's classification the pattern used by each sex to create its proper understanding of what is attractive becomes evident: men prioritise resources/wealth due to the tremendous weight given to industriousness, whereas women do so with commitment / fidelity through faithfulness (see Table 5.8). Thus the agreement between the sexes seems to be an arrangement of complementarity.

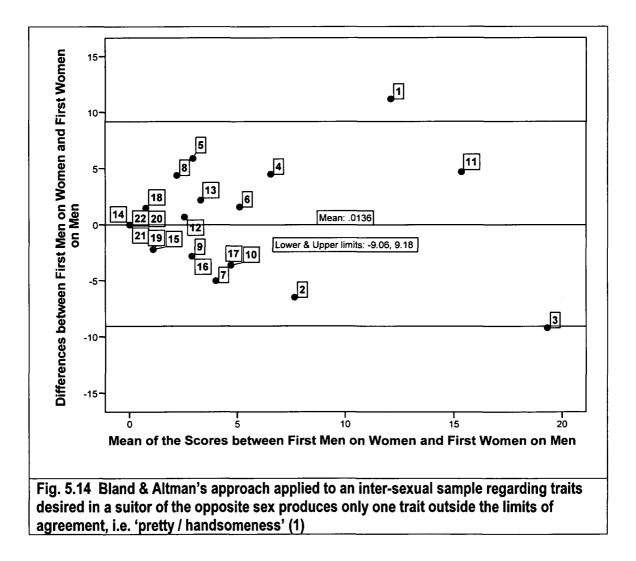
Table 5.8 The Totonaca traits arranged according to Pawlowski and Dunbar's classification show resources/wealth and commitment/fidelity as the number 1 and 2 priorities respectively for men, and inversely for women

Pawlowski and Dunbar's	Traits	Attractiveness of the female traits	Attractiveness of the male traits
categories		(intersexual sub-set by first preferences) %	(intersexual sub-set by first preferences) %
Physical	Pretty/Handsome		
attractiveness	White skin	17.6	6.5
Resources/	Hard-working		
Wealth	Rich	<u>23.4</u>	28.2
	Generous		
Commitment /	Faithful		
Fidelity	Single		
	Reciprocal-lover	22	<u>39.1</u>
	Responsible		
Social skills	Kind		
	Well-mannered		
	Sociable	10.3	6.5
	Attentive		
	Nice		
Sexual	Virgin		
behaviour	Pleasant		
	Honest	8.8	6.6
	Sincere		
Social attitudes/	Good-hearted]
Interests	Respectful	16.2	12.9
	Abstemious		
Neither/Other		1.5	0
		100%	100%

When it came to the Bland & Altman procedure, the only first choice trait in the comparison between the sexes that lay outside the 2SD zone proved to be 'handsomeness / prettiness' (1). 'Faithfulness' (3) lays on the margin, as Figure 5.14 shows. The reason for this mismatch between the sexes is the massive preference expressed by the men about female beauty and by the women about male faithfulness. It is not that men are not interested in female faithfulness, or that

women are not interested in male handsomeness; rather it is due to the fact that their other preferences seem just to overwhelm the intersexual proportions.

In sum, to be viable, an inter-sexual relationship indispensably needs, on the one hand, a hard-working woman who attends to her specific indoor chores, alongside other tasks such as any horticulture production and helping her man in arduous tasks such as picking coffee-berries in the main crop cultivation, and furthermore she must be pretty; on the other hand, a flourishing relationship needs a faithful man, i.e. a monogamist who works hard and does not run the risk of having to divert his meagre goods to support other offspring.



5.4.4.3 THIRD VIEWING POINT: TRAIT CONSISTENCY THROUGH THE INTRA-

SEXUAL PREFERENCES

We should not forget that subjects were asked to differentiate attractiveness with respect to both their own gender and the opposite's. Some of those traits are assumed by the subjects as the most attractive to put on offer in order to take part in the mate market and win a mate. Table 5.9 shows the results for primary and secondary choices in the intra-sexual appraisals about the most attractive traits as judged by the own sex.

At this point, it is no longer a surprise to find that men continue attributing the highest value to male capacity to be 'hard-working' as the most attractive trait much more than women do, although both sexes concur in attributing the predominant place to this same trait, although for women this is more of secondary importance.

Although different patterns between the sexes were found in the sample as a whole, when it came to ranking the attractiveness of their own traits in the mate search, it is apparent that men demonstrate a more coherent stance since they bet on industriousness and handsomeness in the same way in their first as in their subsequent choices. In contrast, even though the first and secondary female choices also correlate significantly, the relationship is much less strong in their case, reflecting less consistency in their choices. It is possible that this contrast represents some kind of gender complementarity that might be the starting points on which a solid pair-bond is constructed; however, we have no way of meaningfully testing this suggestion.

Table 5.9 Intra-sexual preferences shows each gender's choice of traits in their own sex which they believed were most attractive for winning a mate; their primary and secondary choices are highlighted

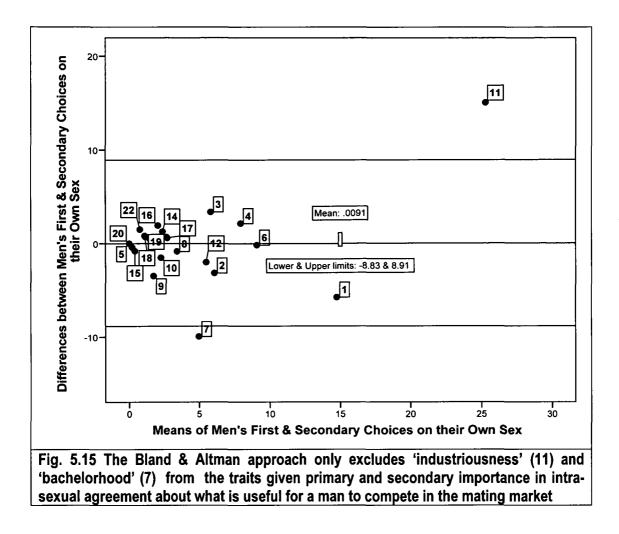
Traits	Men about	t male traits	Women about female traits		
	Primary	Secondary	Primary	Secondary	
Handsome/Pretty	<u>11.9</u>	<u>17.6</u>	<u>10.4</u>	6.2	
Rich	4.5	7.6	4.2	1.6	
Faithful	7.5	4.1	<u>27.1</u>	4.4	
Good-hearted	9	6.9	6.3	5.4	
Kind	0	.0	<u>10.4</u>	9.9	
Respectful	9	9.2	6.3	<u>16.8</u>	
Single	0	10.0	4.2	1.3	
Virgin	3	3.8	0	4.0	
Abstemious	0	3.5	2.1	1.8	
Well-mannered	1.5	3.0	6.3	2.8	
Hard-working	32.8	<u>17.8</u>	6.3	18.7	
Reciprocal-lover	4.5	6.5	2.1	7.5	
Honest	3	2.3	0	4.4	
Sociable	3	1.7	0	.9	
Pleasant	0	.8	2.1	.0	
Generous	3	1.1	0	4.7	
Responsible	3	2.4	6.3	2.4	
Neither/Other	1.5	.7	0	.9	
Sincere	1.5	.8	0	2.8	
Attentive	0	.0	4.2	1.3	
White skin	0	.4	0	.7	
Nice/Obedient	1.5	.0	2.1	2.1	
Total	100%	100%	100%	100%	

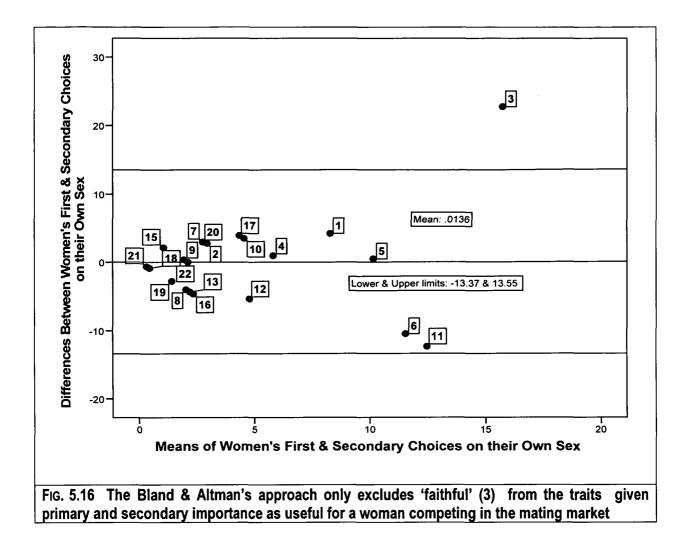
We can use these preferences to assess each sex's understanding of their own status in the mating market; say, in the light of the Pawlowski and Dunbar classification, each sex's strategy can be revealed and then compared to the other sex's sub-set. The results are shown in Table 5.10, and suggest again that men and women prioritise different trait categories (resources vs. commitment, respectively)

Pawlowski and	Traits	Attractiveness of the	Attractiveness of the
Dunbar's		female traits	male traits
categories		(as estimated by the	(as estimated by the
0		females)	males)
		%	%
Physical	Pretty/Handsome		11.9
attractiveness	White skin	10.4	
Resources/	Hard-working		
Wealth	Rich	10.5	<u>40.3</u>
	Generous		
Commitment/	Faithful		
Fidelity	Single		
	Reciprocal-lover	<u>39.7</u>	15
	Responsible		
	-		
Social skills	Kind		
	Well-mannered		
	Sociable	23	6
	Attentive		
	Nice		
Sexual	Virgin		
behaviour	Pleasant	2.1	7.5
	Honest		
	Sincere		
Social attitudes/	Good-hearted		
Interests	Respectful] 14.7	18
	Abstemious		
Neither/Other		0	1.5
		100%	100%

 Table 5.10 Females clearly opt for offering commitment / fidelity and males for resources / wealth as their strategies for competing in the mating market

Figures 5.15 and 5.16 indicate that males do not rate hard-working and being single equally as primary and secondary traits, suggesting that, given the ranking these traits have in the overall order, being hard-working has priority, while being single is only of secondary importance. On the other hand, in the case of the women, the only disagreement consists in that they consider being faithful as exclusively a matter of primary importance, but not secondary.





5.3.4.4 FOURTH VIEWING POINT: THE OPPOSITE-SEX'S PREFERENCES FOR PERSONAL TRAITS AS MIND-READING SKILFULNESS

The traits aforementioned are important because they are the preferential currency offered by the interviewees to win the heart of a prospective mate, not just in the mating market but even in the wider social context (Low 2000). In this respect, we can interpret the match between an individual's expressed preferences and those of the opposite sex in terms of mindreading, or second order intentionality, skills (Dunbar 2004, Dunbar 2000; Dunbar et al 2005): how well do members of one sex understand the preferences of the other sex?

It has become established as a universal truth in the evolutionary literature that the most relevant attractive traits in the mating market are a special handful of characteristics including access to resources or wealth in men and physical attractiveness, as a signal of high reproductivity, in women (Buss 1994 and 1999; Waynforth & Dunbar 1995; Pawlowski & Dunbar 1999a, 1999b and 2001). In this section I gauge the scope of such a statement in the context of this Indian population.

Taking the results of Tables 5.7 and 5.8 (see above) as indicators of what each sex really wants from the opposite sex, and those in Tables 5.9 and 5.10 as the traits that the individuals think the other sex wants, any differences produced when comparing the rates may be interpreted as deviations from the desired aim, allowing us to gauge something about the two sexes' abilities for mind-reading the preferences of the opposite sex. For this, we need a between-sex comparison. Tables 5.7 and 5.9 will be the points of reference to be compared; the nearer a rate in the column cell of the intra-sexual table to its counterpart in the column cell of the inter-sexual table, the more efficient will be considered the mind-reading skill of that gender. On balance, the two sexes seem to perform well: in both cases, the two distributions under comparison are highly correlated (Spearman's rho correlation coefficient for men's traits, rs = 0.809, p< 0.000, 2-tailed. Women's traits, rs = 0.877, p< 0.000 2tailed). If the correlation coefficients can be interpreted as indices of relative mentalising abilities, the fact that the two correlations are very close suggests that one sex is not significantly better than the other in this respect. Each sex seems to be pretty good at recognising what it is that the other sex wants / expects (see also Pawlowksi & Dunbar 1999a and 1999b).

Table 5.11 concentrates the scores involved and the results of the Spearman tests; there, it becomes apparent that both sexes were efficient in mind-reading and that their capabilities are not qualitatively dissimilar, producing a significant correlation when the respective columns are compared with their counterparts (Spearman's rho correlation coefficient for women's traits, $r_s = 0.706$. Sig. 0.01, two-tailed. Men's traits, rs 0.521. Sig. 0.05 two-tailed).

Table 5.11 Differences between the percentages of one sex's preferences and the other sex's perception of that preference (mind-reading)

	Female traits preferred by men %	Women mind- reading %	Male traits preferred by women %	Men mind- reading %
Pretty/Handsome	<u>17.6</u>	<u>10.4</u>	6.5	<u>11.9</u>
Rich	4.4	4.2	10.9	4.5
Faithful	14.7	<u>27.1</u>	<u>23.9</u>	7.5
Good-hearted	8.8	6.3	4.3	9
Kind	5.9	<u>10.4</u>	0	0
Respectful	5.9	6.3	4.3	9
Single	1.5	4.2	6.5	0
Virgin	4.4	0	0	3
Abstemious	1.5	2.1	4.3	0
Well-mannered	2.9	6.3	6.5	1.5
Hard-working	<u>17.6</u>	6.3	<u>13</u>	<u>32.8</u>
Reciprocal-lover	2.9	2.1	2.2	4.5
Honest	4.4	0	2.2	3
Sociable	0	0	0	3
Pleasant	0	2.1	2.2	0
Generous	1.5	0	4.3	3
Responsible	2.9	6.3	6.5	3
Neither/Other	1.5	0	0	1.5
Sincere	0	0	2.2	1.5
Attentive	1.5	4.2	0	0
White skin	0	0	0	0
Nice/Obedient	0	2.1	0	1.5
Spearman's rho	Correlation coefficient 0.809. Sig. 0.000		Correlation coefficient 0.877. Sig. 0.000	

That said, neither sex seemed to be perfect in their judgements. Apparently, women did not expect 'prettiness', 'hard-working' and 'faithfulness' to be as important as they were in the actual choices made by males. Nor did men expect women to be quite as concerned as they were with 'faithfulness', 'richness', or quite as "disinterested" (relatively speaking) as they actually were in 'hard-working'. That women were not better "mind-readers" than men in this sample is perhaps a counter-intuitive result in the light of the 'folk knowledge' literature, the conventional psychology and in the evolutionary literature (Maccoby and Jacklin 1974; Mealey 2000; Greiner 1998; Ridley 1993; Barrett et al 2002; Baron-Cohen 2004).

Nonetheless, although men performed just slightly better at this inter-sexual mind-reading, the two sexes do not differ substantively in this respect. In other words, it can be seen that the content of their choices is directed towards quite similar traits and the ability of the two sexes to harmonise exchanges in the mating market is rather comparable.

5.5 DISCUSSION

Decades ago, scholars in the field requested more research on sex differences in mate choice preferences; as a remarkable example, there is Buss's inquiry calling for research on proximate mechanisms needed in order to develop a complete explanation of observed sex differences as well as similarities in mate preferences (Buss 1990 and 1995).

As far as the research here is concerned, once basic similarities between the sexes (centred around a handful of traits such as 'hard-working', 'pretty/handsome', 'respectful' and "faithful') have been ascertained, the study attempts to shed some light on empirical differences for the mate choice patterns between Kgoyomes and the cross-cultural samples reported by authors cited throughout this chapter. Worthy of mention are findings that particularly contrast with Buss' assertion that "...The study of 37 cultures found only two qualities that men universally desired more than

women: youth and physical attractiveness. Not a single culture showed a reversal of this trend or even an equal valuation of these qualities." (Buss 1999, p. 422). Very interesting to note from these results with Kgoyome men is the fact that "hardworking" ties with "prettiness" in their first place of choices, and when first and secondary choices are taken together, and / or the Pawlowski and Dunbar categories are applied, it can be seen that the "hardworking" characteristic outstrips "prettiness" in importance. (see Tables 5.8 and 5.9 above).

Since my trait classification contained in table 5.6 had been constructed based on the Pawlowski and Dunbar categorization and this latter was for its part made using the Waynforth and Dunbar's premises, the relationship among these and Buss's repertoire may produce an instructive comparison. Table 5.12 provides this comparison, with Buss's repertoire based on Workman and Reader's version (2004, p. 93).

Table 5.13 next attempts a comparison between the ways in which the three different studies rated the two sexes' trait preferences. Classes and categories are placed on equivalent levels, but since the scale used by each study is different, the contrast shall be limited to the importance that the traits occupy in their own column ranking and with respect to the other sexual counterpart using the Waynforth and Dunbar's six categories as the criterion.

Table 5.12 A transcription of Buss' categories according to Workman and

Reader's version permits to construct an equivalent array with the Waynforth

and Dunbar's

Buss' traits:	Waynforth and Dunbar's
	equivalent categories
Good looks	Physical attractiveness (PA)
Good health	
Ambition and Industriousness	Resources/Wealth (R/W)
Good financial prospect	
Favourable social status	
Love	Commitment/Fidelity (C/F)
Dependability	
Desire for home and children	
Sociability	Social skills (SS)
Education/intelligence	
Refinement/neatness	
Good cook and housekeeper	
Pleasing disposition	Sexual behaviour (SB)
Chastity	
Emotional stability /maturity	Social attitudes/Interests (SA/I)
Similar education	
Similar religious background	
Similar political background	

As can be observed, whilst Totonacas confer the upmost importance to the category of 'resources and wealth' directly related to the individual's properties and work capabilities, Waynforth and Dunbar's sample (the figures in the columns 'offering' and 'searching') suggest greater emphasis is attached to social aspects. For their part, Buss's sample subjects are more interested in aspects of the pair relationship, namely commitment and fidelity. Instead, since the means by which economic uncertainty is counteracted in the Indian peasantry the highest values were placed on work and its produce as the only means of survival and the starting point for building a reproductive life. Table 5.13 Ordinal ratings to compare cross-cultural mating preferences between the sexes (since the scales are unrelated, only the category ranking is pertinent)

Waynforth's and		Buss's cros	ss-cultural	Totonacas	,	Ra
Dunbar's ca	Dunbar's categorization			preference	s scores	nk
Both sexes' offering cues for main traits	Both sexes' searching cues for main traits	Males rating for females	Females rating for males	Males rating for females	Females rating for males	
Social attitudes/ Interests	Social skills	Commitment / Fidelity	Commitment/ Fidelity	Resources/ Wealth	Resources/ Wealth	I
(251.7)	(192.5)	(2.47)	(2.59)	(10.07)	(8.77)	
Physical Attractiveness (225.5)	Commitment/ Fidelity (134.9)	Physical Attractivenes s	Social attitudes/ Interests (2.0)	Social attitudes/ Interests (6.16)	Social attitudes/ Interests (7.03)	II
Social skills	Physical	(2.11) Social skills	Physical	Physical	Physical	III
(186.8)	attractiveness (115.1)	(2.06)	Attractiveness (1.87)	Attractivenes s (4.95)	Attractivenes s (6.55)	
Commitment /Fidelity	Resources/ Wealth	Sexual behaviour	Resources/ Wealth	Commitment /Fidelity	Commitment /Fidelity	IV
(84.9) Sexual behaviour	(89.5) Sexual behaviour	(1.65) Resources/ Wealth	(1.79) Social attitudes/ Interests	(4.2) Sexual behaviour (3.05)	(5.85) Sexual behaviour (2.73)	v
(not reported)	(not reported)	(1.51)	(1.69)			
Resources/ Wealth	Social attitudes/ Interests	Social attitudes/ Interests	Sexual behaviour	Social skills	Social skills	VI
(not reported)	(not reported)	(1.47)	(1.61)	(2.26)	1.04	

In second place, the combined scores of the Kgoyomes emphasise social attitudes and interests wherein traits such as 'respectful', 'good-hearted' and 'abstemious' are included as some of the essentials that may lay the groundwork for the couple and family to work together. Also, in this set is mirrored the importance attributed to a well-known norm of cohabitation: respect for the rights and properties of the conspecific as a precondition to thrive. Finally, abstinence is important for them as

c

the safeguard of the meagre assets needed to scrape a living filled by hard work, often spoiled by alcohol.

In line with this, physical appearance would signal health and vigour as preconditions to enable work, thereby raising the 'physical attractiveness' category to an important rank just as occurs in other traditional societies where a "plump" woman is considered more beautiful and desirable than a "skinny" woman, (Borgerhoff Mulder 1988). Commitment and fidelity, among the Totonacas is also very important. In fact, fidelity was the third most valued trait by women, raising this category to fourth rank above sexual behaviour and social skills categories, whereas the latter were more highly appreciated among the Western populations sampled by Waynforth and Dunbar (1995) and Pawlowski and Dunbar (1999a and 1999b) and importantly represented among those of Buss (1989 and 1998). Apparently the kind of social skills more highly valued in Western societies correspond to cultural communication expertise related to the 'Scheherazade strategy' (Miller 2000), and these are not as popular among rural peoples.

5.6 CONCLUSIONS

As far as the Kgoyomes' rather idiosyncratic priority for industriousness is concerned, shown here on quantitative grounds, men and women appreciate "hardworking" alike as the most attractive trait cross-, inter- and intra-sexually, emphasising the importance attributed to resources that can be invested in the survival and nurture of a family. The main aim is to avoid being prey to economic exclusion and climatic uncertainty, and to have an earning potential to plan for the expectations of the couple, extended family and community (Waynforth and Dunbar 1995). It is not an exaggeration to state that 'hard-working' is the privileged trait by which, both, men and women, starting from their similarity as for goals concerns, get to an agreement about to measure the intensity with which they will invest their efforts and resources

Although preferences for 'hard-working' men are universally encouraged by peasant systems, the efforts of the men alone, even if indispensable, are not enough to cope where socio-ecological constraints are tougher, as in the Huehuetla site, so women work literally shoulder to shoulder with a spouse in order to benefit of the family economy according to the *el costumbre* prescription. Thus, the main components of attractiveness are composed pre-eminently by the set of categories of 'resources/wealth', followed by 'social attitudes/interests', 'physical appearance', 'commitment/fidelity' and 'social skills', in that order, as termed by Pawlowski and Dunbar.

These and the remaining characteristics together appear to constitute fine cultural equipment for cooperative behaviours within the couple and thereafter within the nuclear family. Summarising, evidences were found to complete the explicit aims of this chapter with affirmative answers. Homogeneity in large extent was demonstrated by both sexes in terms of values, beliefs and preferences, constituting it a potential factor to strengthen and maintain the efficacy of the couple in team-work in order to maximise their efforts in benefit of the family. In addition, it may signify the premises on which positive expectations for inculcating in their offspring and the extended family the cooperative spirit in community life and pro-social attitudes as an additional achievement.

CHAPTER VI COOPERATION WITHIN THE EXTENDED FAMILY AND BETWEEN HOUSEHOLDS

In this chapter the aim is to explore the nature of cooperation at the level of the extended family and between households. Supported by quantitative data, the approach will be mainly descriptive and will catalogue the most relevant cooperative acts and attitudes that are usual in the Kgoyomes daily life. As a continuation of the life-history overview set out in chapter IV, and to an extent continued in Chapter V, the content here will reflect upon behaviour patterns traditionally followed by established couples in their daily tasks following marriage, as well as the ways in which they are drawn into the household's cooperative network; it also examines different patterns of behaviour whereby cooperative acts are implemented from childhood onwards. Thus, it is logical that the sections exploring patterns of cooperative behaviour should start with nepotistic actions go through *helpers at the nest* activity and culminate in the ways single people bequeath their assets.

The Kgoyomes' social system has been described as made up of familial units of production and self-consumption (see chapters I, II and IV in this work), so it is to be expected that cooperation will be deep-rooted in the households' production process as well as in the distribution of its produce. Likewise it is expected that the fruits of cooperative work will primarily go to both the closest relatives and the habitual participants in reciprocal exchanges. Hence, on the one hand, the resources of younger and middle-aged parents' will be directed towards their children, while the resources of older offspring, say teenagers and young adults, will be for the older parents and their siblings. On the other hand, it can also be expected that once at least the very basic needs of the nuclear family have been satisfied, a determined portion might be channelled towards other more distant relatives and unrelated counterparts with whom regular reciprocal arrangements have been established over time. The pattern for such behaviour can be conceived of as a succession of concentric circles in which the more distant the kinship link or the more uncertain the offset return, the less the resources given away. Accordingly, unrelated neighbours, friends and allies are expected to play a relatively minor part in cooperative processes. In few words, a conjunction of patterns of cooperative behaviour including kin selection and expressions of reciprocal altruism will be searched for in the subjects' customary activities.

Data comes from different size samples pertaining to both non-reproductive as well as reproductive informants, according to their pertinence: in some items they will be treated together and in others treated in partial samples, producing understandable number fluctuations. However, before every item, the reader will be advised about the profile of the subjects in question and their respective numbers.

6.1 Some of the more common nepotistic behaviours

Family cohesion is proverbial among Mexican people (Arizpe 1973; Cancian 1996; Lewis 1951; Ruiz-Lombardo 1991; Zolla & Zolla-Marquez 2004). At least in part, this characteristic is an Indian legacy as many authors cited in previous chapters have stated (see mainly chapter II in this work). In particular, since the Totonacas trace kinship through bilateral descent, their kin are not only cohesive, as has already been said, but also extensive. For instance, some of my younger informants were able to tell me anecdotes about their grandparents, both on their mother's and their father's side. This has been the case for thousands of years, and even nowadays, it is uncommon to find a Totonaca alone far from his/her homeland —and, when that is the case, it doesn't usually last for a long time. Hence, the great majority of Totonacas live and work together with their close relatives. Habitually, three generations dwell in the same plot, either staying under the same roof or, alternatively, living in nearby houses at the same time as sharing both their labour and the fruits of their labour. To begin with, let us have a view of the activities of a sample made up of non-reproductive people.

This sample was composed of 180 individuals ranging from 16 to 75 years of age, 108 males (60%), 72 females (40%), who satisfied the criterion that they had never had children. 93.3 percent were single and the rest were married. In all, 68.5% were not yet engaged at the time of the interview, but 82.6 % hoped to marry in the future. The mean age was 22.89 and the median 19.

39.2 % of these subjects considered their studies as of high importance on weekdays. Differently, during holidays, weekends and school term breaks, practically all the children, youngsters and single adults living in their parents' house dedicated considerable time to helping the family in a variety of ways. Thus, as a preliminary step, in order to contextualise the pre-eminence of help, Table 6.1 shows the substantial helping activities that sampled people were involved in during the preceding year, whether specific, such as the farm-plot, or housekeeping or more general.

Helping activities	Men (%)	Women (%)
Housework in general	13.7	60.0
Farm work in general	54.8	
Handpicking coffee cherries	21.9	12.0
Gathering water and firewood	8.2	2.0
Making tortillas		6.0
Raising domestic animals		10.0
Milling maize		2.0
Giving them money from a job		6.0
Delivering meal to the plot		2.0
Taking care of parents' health	1.4	

Table 6.1 Activities in which non-reproductive people help their family

This table shows some characteristics that are also true among the extended population: although not directly cultivating coffee or maize, some women worked on the farm-plot in peripheral tasks and some men undertook housekeeping tasks; however, their main activities were by far those determined by the gender stereotype. Furthermore, female chores seemed more diversified than the males', while the males', which are more demanding of brute physical strength; even so, there were some counter-intuitive aspects which reflect idiosyncratic facets, for example, some women had contributed money earned from a job while some men had taken care of sick parents.

Table 6.2 summarises how often their help was given, translated from the respondents' idiosyncratic time usage into days per week and hours per day. Although calculations were made with the assistance of the guides, a decrease in the sample numbers is visible by their probable unfamiliarity with Western time usage; nevertheless, the most common patterns can be seen.

Perhaps due to their more diversified repertoire of domestic tasks and because of their direct relationship to meeting the family's needs, women surpassed the men in every one of the concepts involved: women work almost one day more per week on average and 2.39 hours more per day; consequently, the relatives who benefited from

women outnumber those of the men by 0.33 more people.

number of recipients			
	Days per week	Hours per day	Number of people benefited by their help

7.8

8

10.19

 $\frac{8}{(108)}$

4

4

4.33

3.5

(128)

Table 6.2 Rates of help given by non-reproductive subjects to their relatives and number of recipients

* The numbers of "don't know/ don't answer" was probably high here due to many respondents' lack of familiarity with the Western usage of time

4.77

5

5.65

7

(118)

Men

Women

Mean

Mean

Median

Median

n *

Throughout this chapter, it will be seen that the various helping behaviours, such as those in Table 6.2, take on different connotations according to the nature of the help and the age, sex, marital status, kinship degree and any return or exchange between the givers and the receivers. The reader will be advised beforehand of the characteristics of each sample in question, and furthermore their behaviours will classified into one of the following five sub-sections: a) helping at the nest; b) married couples staying in the parents' home and joining the family's labour force; c) migration to lighten the household's burden and send home goods; d) staying around to look after relatives; and e) bequeathing assets. The first task however is to discuss common nepotistic behaviours for provisioning the household, and for simplicity, the behaviour of migrants will also is treated within this general discussion.

6.1.1 PROVISIONING TO HOUSEHOLD AND ALLOCATION OF ASSETS

A strategy for sharing goods and resources has been evident among the extended population in former findings, so in this section I explore the subjects' preferences regarding their usual sharing of assets, and scrutinise by sub-sets according to reproductive status, sex and possession of certain goods.

To start with, a non-reproductive set of people, most of them single and living in their natal home, by virtue of which had access to a modest surplus, were asked firstly, whether it was their usual behaviour to give away a portion of their resources and, if this were the case, whether they differentiated by sex, age and family branch when allocating to beneficiaries. Regarding the interviewee's profile, these were 109 individuals whose details are found in Table 3.1 (see Chapter III) under the heading "Able to bequeath". At the time of the survey there were 23 people in this sample who were non-reproductive but living with a partner, so in order to be sure that theirs were real acts of distribution and not just delivery of self- provision, they were asked to consider other individuals different to their spouses as gift recipients.

The results were that 59.6% of the sample regularly provided money and produce in kind to their relatives. The additional 40.4% did so only on certain occasions, so that their gifts did not represent a regular contribution, and shall be excluded from the subsequent analyses. Of those who definitely shared, 77.2% shared both money and goods, and 22.8% shared only goods in kind. The produce supplied by these latter groups comprised the assorted sustenance of the household according with common food consumption: 89.8% of the individuals gave away maize, 66.7% beans and 77.8% coffee beans.

According to the former data, the numbers of people providing was different between the sexes. Unsurprisingly 67.3% of men; and 52% were women, although,

the difference is not significant: $\chi^2(1) = 2.421$, p= 0.120, *ns*. This means that based on the odds ratio, subjects were 1.91 times more likely to share goods if they were men than if they were women.

For a more specific assessment of the mode and scale in which our subjects provided help to their relatives, they were asked about the monthly incomes in cash they had had during the previous year; and also about the three most important staples they had cropped in that year, i.e., maize, beans and coffee, which constitute the mainstay of the population's diet, hence their importance.

Given the profusion of weights and measures systems, sometimes odd and oldfashioned which are utilized by the subjects, their records were converted with the aid of the guide-translators' into a simplistic scale (Table 6.3) showing proportions sufficient to cover progressively longer periods, i.e., a week, fortnight, month, two-, three-, four-, five-, six-months and a year's consumption. It can be seen that the help signifies a substantial contribution to a Kgoyome family (typically of six-members which includes half adults and half children), based on my personal calculations.

This table is tailored from the raw data and took into consideration people's real needs on a time scale adapted to seasonal possibilities which, in the best case, permit up to two harvests a year per plot. Albeit simple, it does enable us to match up the four different goods in order to examine the subjects' real incomes, which as has been said before, differ to a great extent from other economic lifestyles.

A by-product of this specific data is the verification of people living above or below the economic "water line", even where the most conservative local parameters are used (see the first three chapters of this work); i.e. whether or not their monthly cash incomes match their monthly cash expenditures and whether their six-monthly crop provisions match their six-monthly consumption.

Table 6.3 Distribution in percentages of subjects by their incomes in cash (Mexican Pesos) and produce in kilos earned in the previous year; echelons correspond to portions sufficient to sustain a family through the periods indicated, i.e. the "survival threshold"

Percent of subjects by their incomes: Portions for periods:	Subjects' monthly income in cash	Maize produced (kilos)	Beans produced (kilos)	Coffee produced (kilos)
	\$0	0-10	0	0
	27%	21.1%	44.1%	29.7%
A week	\$1-\$300	11-20	1-5	1
	37%	0%	7.4%	0%
Fortnight	\$301-\$600	21-40	6-10	2-3
	14%	0%	1.5%	0%
Month	\$601-\$1,100	41-75	11-20	4-6
	15%	5.3%	11.8%	0%
Two months	\$1,101-\$2,000	76-120	21-35	7-10
	6%	11.8%	16.2%	0%
Three months	\$2,001-\$3,000	121-200	36-50	11-15
	0%	7.9%	7.4%	4.1%
Four months	\$3,001-\$4,000	201-300	51-69	16-20
	0%	9.2%	5.9%	4.1%
Five months	\$4,001-\$5,000	301-400	70-85	21-25
	0%	2.6%	0%	0%
Six months	\$5,001-\$6,000	401-600	86-100	26-30
	1%	5.3%	5.9%	0%
A year	\$6,001-	601	101	31
	0%	36.8%	0%	62.2%
Non-reproductive	n=100	n=76	n=68	n=74
both sexes, able to bequeath sample*				

* Some numbers of respondents missed answering these questions, so the n fluctuated under 109 which was the whole sample

Specifically, the comparison between cash incomes and cash expenditures shows that only 22% of the sample earn monthly incomes at or above even the most austere measurement of sufficiency; in the case of the consumption of staples over a sixmonth period, only 42.1% meet their needs for maize, only 5.9% for beans and 62.2% for coffee. In other words, the cumulative percent of sampled people which lay below the "month" category in the cash column and the "six months" of the

produce in kind represent all those living in deficiency below the "water line".

Table 6.4 Distribution of subjects by the gifts in cash and produce in kilos they gave away during the previous year; as in the previous table, the echelons correspond to portions equivalent to a family's sustenance in the marked periods

Percent of subjects' providing:	Subjects' provisioning in cash	Maize provided (kilos)	Beans provided (kilos)	Coffee provided (kilos)
Portions for periods:				
	\$0	0-10	0	0
	22.8	14.3	35.7	22.2
A week	\$1-\$300	11-20	1-5	
	49.1	14.3	0	2.2
Fortnight	\$301-\$600 10.5	21-40 10.2	6-10 7.1	2-3 0
Month	\$601-\$1,100	41-75	11-20	4-6
	12.3	14.3	19.0	4.4
Two months	\$1,101-\$2,000	76-120	21-35	7-10
	1.8	16.3	7.1	4.4
Three months	\$2,001-\$3,000	121-200	36-50	11-15
	0	6.1	9.5	4.4
Four months	\$3,001-\$4,000	201-300	51-69	16-20
	1.8	6.1	0	15.6
Five months	\$4,001-\$5,000	301-400	70-85	21-25
	0	2.0	2.4	2.2
Six months	\$5,001-\$6,000	401-600	86-100	26-30
	1.8	8.2	14.3	0
A year	\$6,001-	601	101	31
	0	8.2	4.8	44.4
Non-reproductive subjects of both sexes, able to bequeath*	n=57	n=49	n=42	n=45

* Some respondents failed to answer some of these questions, so the n fluctuated below the 109 subjects in the whole sample

As a second step, Table 6.4 reports these subjects' allocation of goods during the year prior to this survey. It means that despite being in a situation of economic deficiency, or perhaps precisely because of it, they provided goods which were complemented by those of other members of the household to mitigate their needs.

As some of my interviewees told me "little by little makes not such a little" - a tactic which they conform to in such a way that 17.7% of these sampled subjects provided cash each month sufficient to mitigate the household's needs; 59.6% of them provided at least a partial amount and 22.8% no cash at all. As for maize consumption, 16.3% of the subjects provided enough maize for six months consumption or more; 69.4% made a partial contribution and 14.3% did not make any. Beans were provided by 19% of these subjects, enough for the full six-month's consumption; 45.3% contributed partially and 35.7% gave no contribution. Finally, enough coffee beans were supplied by 44.4% of the subjects to satisfy in full the household's needs for the whole year; 33.2% of the subjects contributed a portion and 22.2% did not provide any coffee beans.

As a summary of the figures analysed in this section, Table 6.5 shows the total amount of resources earned by all these subjects, divided by items, and the contributions they represent in percentage terms to their households for its sustenance.

Just as an aside, it is noticeable the broad difference between the amount of coffee cropped and the amount supplied to households; as far as my knowledge extends, this rather small amount is enough for domestic consumption, hence the larger remainder could be traded as a cash crop in the local economy (in spite of its undervalued price) as an additional income source for the household. The other likely cash crop, maize, in some years undergoes a similar outcome depending whether growers either have any surplus due to good weather or, contrarily, a cash predicament compels them to trade it.

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Table 6.5 Considerable quotas of the subjects' incomes in cash and produce in kind were contributed the year before to the households' sustenance; most remarkable was the case of beans

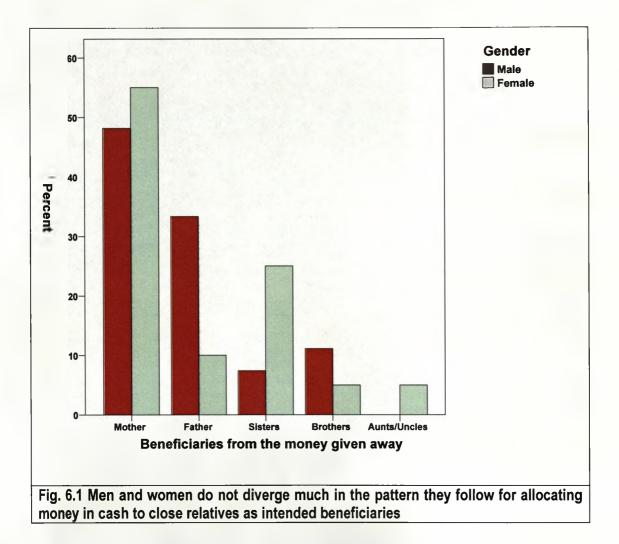
Total of cash monthly earned (M. P.) by the whole sample	\$45,400 *	100%
Total of cash monthly given away (M. P.) by them	\$26,300	57.93%
Total of maize cropped by the subjects all together	56,350 kg	100%
Total of maize given away by the subjects	10,022 kg	17.79%
Total of beans cropped by the subjects all together	5,375 kg	100%
Total of beans given away by the subjects	4.335 kg	75.59%
Total of coffee-beans cropped by the subjects all together	49,545 kg	100%
Total of coffee-beans given away by the subjects	4,755 kg	9.6%

* Mexican Pesos (M. P.) 20.50 = £1

6.1.2 RELATIONSHIP, SEX, AGE AND PARENTAL BRANCH AS FACTORS OF PREFERENCE FOR ALLOCATION OF BENEFITS

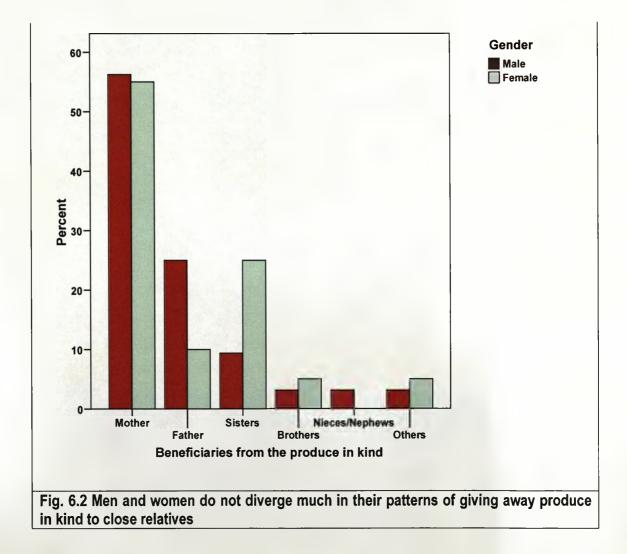
To continue with the analysis, in the following pages information is given on some specific characteristics of the people who benefited from the goods which these subjects allocated. In the beginning, the informants were asked which individuals had benefited from their gifts during the previous year. In these first answers it was clear that the subjects had in mind exclusively members of their close family as intended beneficiaries, and did not give much room to "others", not even close kin; except for a meagre percentage achieved by aunts / uncles from female informants and nieces / nephews from the males, as Figures 6.1 and 6.2 make clear.

Other findings worthy of note were, first, that irrespective of the informants' sex, the most frequent recipients of their gifts were their mothers (51.1 % of the beneficiaries of the subjects were their mothers; 23.4 of beneficiaries were subjects' fathers; and 23.5 of beneficiaries were the subjects' siblings all together); presumably because of the mothers' role as distributors for the household's consumption. However, men more frequently gave money away to their fathers and brothers than women, who comparatively gave more money to their mothers and sisters, in such a way that a same-sex skew is visible.



Second; the frequencies of subjects which provided cash, D(40) = 0.280, p < .001, and produce in kind to their relatives, D(40) = 0.318, p < .001, were both significantly non-normally distributed; so, a non-parametrical test might be employed to make clear if there is a significantly differentiated pattern of allocation by the sexes.

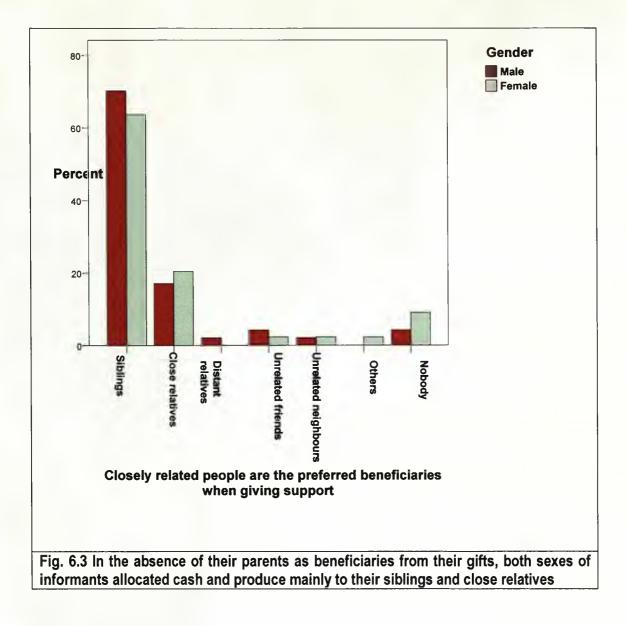
Despite the apparent same-sex skew in giving gifts, commented above, there was not a significant difference as concerns to male subjects providing male relatives and female subjects providing female relatives. Both sexes offered their cash with little difference concerning the people intended as beneficiaries, according to the Mann-Whitney test. Men did not seem to differ in the frequency with which they gave money in cash to their relatives compared to the women, U = 266.00; Asymp. Sig. (2-tailed) = 0.926, *ns*, r = 0.013; neither did the sexes differ as for the frequency with which they gave produce in kind, U = 298.50, Asymp. Sig. (2-tailed) = 0.654, *ns*, r = 0.062.



Lastly; with the purpose of dispelling any doubt about preferences with which they allocated gifts either by kinship or not, subjects were requested to signal among their broad kin and neighbours all those who had benefited from their gifts in cash and kind during the previous year. Since in the previous items the central importance of parents as targeted beneficiaries was overwhelmingly established, the respondents were asked to omit them from their answers in order that other recipients could be more easily identified.

In the parents' absence, individuals transferred the aforementioned prioritisation towards their siblings; however other close relatives such as cousins and aunts or uncles, also appeared above more distant relatives and unrelated individuals in general. Figure 6.3 exposes, irrespective of the subjects' sex, not only their marked predilection in favour of siblings, at 67%, but also, as a far-off secondary preference, 18.7% of informants inclined towards close relatives; and by contrast, as a third option, interviewees reluctant to give away gifts (labelled as "to nobody") made up 6.6% of the respondents.

The rest of the informants, dispersing their gifts among related neighbours, distant relatives, unrelated friends and unrelated neighbours, all together, amounted to 7.7% (n = 109). Therefore an extremely differentiated allocation of resources from these subjects towards their siblings and close relatives through similar patterns and rates across the sexes has been recognized through this procedure.

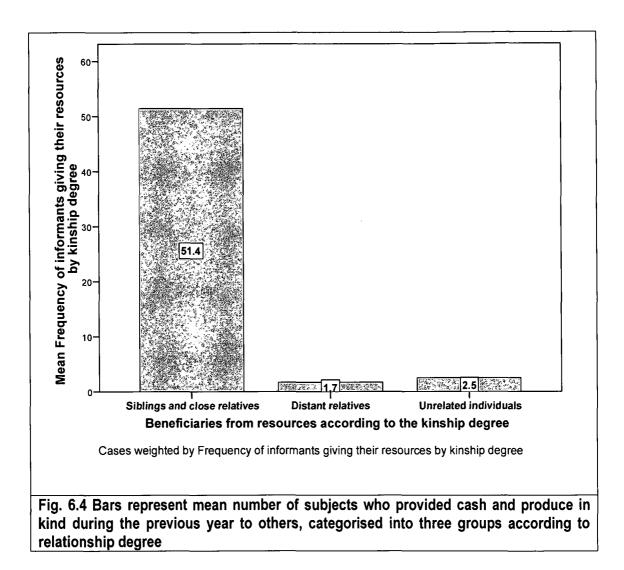


The next questions for the informants were aimed at elucidating whether they had had any inclination regarding beneficiaries' sex, age and family branch; Table 6.6 displays the figures in these respects divided into three columns of data: two of them correspond to each gender's answers and the third is for answers overall, irrespective of sex. In order to have an accurate measure of the effect of kinship degree on the rate of gifts given by our sample, the informants were gathered into three logical categories according to the kinship degree, i.e., those who gave to siblings and close relatives, those who provided for distant relatives and those who gave to unrelated individuals, represented in the bars of the Figure 6.4 —respondents who said they gave "to nobody" and missing values corresponding to "99 = Don't know/No answer" were excluded from the file, reducing the set of subjects to 85 cases.

·	Beneficiaries	Male	Female	Irrespective
	Denenierunes	informants	informants	Of sex
By	Siblings	70.2	63.6	67
relationship	Close relatives	17	20.5	18.7
	Related neighbours	2.1	2.3	2.2
	Distant relatives	2.1	0	1.1
	Unrelated friends	4.3	2.3	3.3
	Unrelated neighbours	0	2.3	1.1
	Nobody	4.3	9.1	6.6
	·····	100%	100%	100%
By sex	Men	17.8	2.1	9.7
	Women	22.2	41.7	32.3
	Irrespective of sex	51.1	45.8	48.4
	Nobody	8.9	10.4	9.7
		100%	100%	100%
By group of	Children	18.2	14.6	16.3
age	Youngsters	0.0	8.3	4.3
	Adults	18.2	8.3	13
	Old people	25.0	33.3	29.3
	Irrespective of age	31.8	27.1	29.3
	Nobody	6.8	8.3	7.6
		100%	100%	100%
By parental	Paternal branch	15.8	10.8	13.3
branch	Maternal branch	26.3	24.3	25.3
	Irrespective of branch	47.4	45.9	46.7
	Nobody	10.5	18.9	14.7
n = 109		100%	100%	100%

Table 6.6 The subjects, divided by gender, demonstrated an inclination to dispense gifts taking into consideration the relationship, sex, age-group and parental branch of beneficiaries

Evidently, the bar pertaining to subjects who gave cash and produce in kind to their siblings and close relatives during the last year is overwhelmingly bigger than the other two, which, in turn, show not much difference between them.

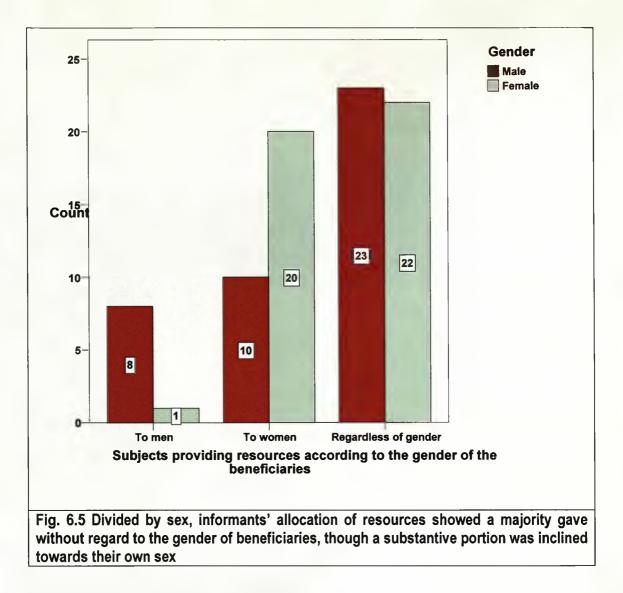


Organised in this way, the Kruskall-Wallis test was applied to these three groups, having found that the provision of gifts was significantly affected by mediation of the kinship degree (H(2) = 30.62, p < .001). As a clear conclusion, it could be stated that the weaker the kinship degree between the first and second group and first and third group, so the mean frequency of provisioning decreased; even though the decrease in between the second and third group was an exception —due to the impact caused by

friendship with unrelated individuals contained in the third group whose bonds tied some subjects more strongly than distant kinship.

Regarding their inclination to take into account the gender of the beneficiary when dispensing resources, the most common response was that they did not discriminate by sex (48.4%). But of those who did, most preferred to help females (32.3%) rather than males (9.7%); the remaining 9.7% answered they had given "to nobody". However, within sexes, there appeared to be a strong preference for helping one's own sex, an option even more accentuated among women. In order to make a clearer analysis of this allocation pattern by gender, the "to nobody" responses were discarded and the rest of the sample split up into male and female participants, as seen in Figure 6.5.

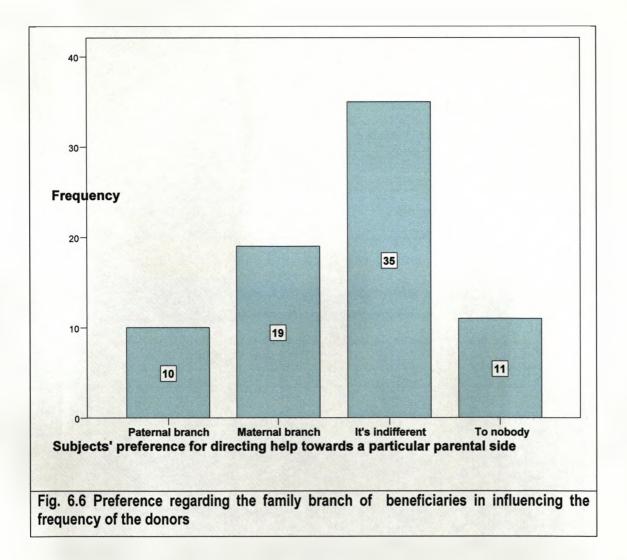
Once the Kruskall-Wallis test was applied, significant differences were confirmed for the rates of allocation among the three groups of benefactors, (H(2) = 83.0, p < .001). Then, Mann-Whitney tests were used to contrast the relation between the sub-sets by gender and regardless of gender and the Bonferroni correction was made at a 0.0167 level; the results are: for the relationship between benefiting "regardless of gender" and benefiting "men", U = .000, r = -0.79; "regardless of gender" and benefiting "women", U = .000, r = -2.74; and between benefiting "men" and "women", U = .000, r = -1.96.



Concerning the third criterion scrutinised for providing gifts, i.e. the age of the beneficiaries, the two largest preferences were for elderly people and for showing no preference at all, which tied in the same percentage (29.3%); however, in order to dispel any doubt, the former procedure was also applied to this issue. Firstly, the cases of responses which "disregard beneficiaries' age-group" were removed in order to avoid a contradiction in terms. After this, the Kruskall-Wallis test was utilized, the results being as follows: resources are delivered to others with significant differentiation concerning age-group (H(3) = 57.00, p < .001).

Lastly, the fourth criterion in this particular item, any preference for family branch, was considered as a possible influence on to whom the subjects provide with benefits. Once asked which side of the family they preferred to help, the commonest answer was "no preference", but among those who expressed an inclination, there was a preference for the maternal side over the paternal side in both sexes, although, the difference does not seem significant when the whole picture is observed in Figure 6.6. However, in order to clarify any trend or difference the results of the test applied are reported below.

Firstly, split by gender of the subjects, a chi square test was done to the set and its result is reported as: $\chi^2 = 1.286$, df = 1, p = .732, meaning that the donors' gender did not determine the recipients' side of the family as a factor in deciding whether to give a benefit or not.



6.1.3 MIGRANTS' HELPING BEHAVIOURS

In spite of their proverbial attachment to their homeland, destitution has forced an increasing number of Kgoyomes to migrate to neighbouring districts or beyond in search of better working and living conditions. 55.5 % of the sample stated that at least one of their close relatives had left the Huehuetla district and either was still absent at the time, or was now back after a long absence. The numbers on this matter are in Table 6.7. Nonetheless, migrants often continue providing help to relatives back home in several ways, most helpfully in the form of sending money (see Table 6.8), although this often diminished over time. During the first year after their departure, 81.2% of migrants sent remittances home to their relatives in Huehuetla. According to the respondents, during the 12 months previous to this study, they had received cash remittances, ranging from \$100 to \$5,000 (Mexican Pesos), i.e. an average of MP \$261.64 per month.

······································	Frequency	Percent
A son	72	34.6
A daughter	18	8.7
Father	12	5.8
Mother	1	.5
Brother	72	34.6
Sister	4	1.9
Uncle/Aunt	1	.5
Cousin	1	.5
Grandparent	1	.5
Any other	16	7.7
Myself for a while	10	4.8
(n = 821)	Total: *208	100.0

 Table 6.7 Count of informants' relatives migrated to another

 district to look for work

Female respondents had received more money and more frequently from their migrant relatives than males, the difference being significant according to the chi square test: $\chi^2 = 4.53$, df = 1, p < 0.05. After a year, the number of migrants who were still regularly providing remittances had fallen by about 15%, as indicated in the Table 6.8.

6.8. Percentages of interviewees receiving money from related migrants

	During the 1st year (%)	After the first year (%)
Receiving remittances	81.2	66.7
Not receiving remittances	18.8	33.3
Total	100	100

Just as an illustration of this issue; once the money amounts received by the informants and collected in the questionnaires was added, it amounted to \$114,600 in the year previous to this study. Given that this sample represented nearly 5% of the municipality's population, under-registration apart, this represents an amount superior to the annual official budget dedicated to social expenses and building public facilities (\$110,000) as informed by the annual budget of the Municipality's Major in the 2001 year according to the official bulletin.

More to the point, at the time of this survey, the commercial maize price was \$2.00 (MP) a kilogram, so the mean amount of money sent home was enough to buy 392.5 kg of maize (or 4.36 kg per day) during the 90 days of the average period, equivalent to 43.6 % of the daily consumption for a family of 5, or the family's total consumption for 39 days. Clearly this was a significant contribution to the family economy.

6.1.4 Helpers at the nest: age at starting to help

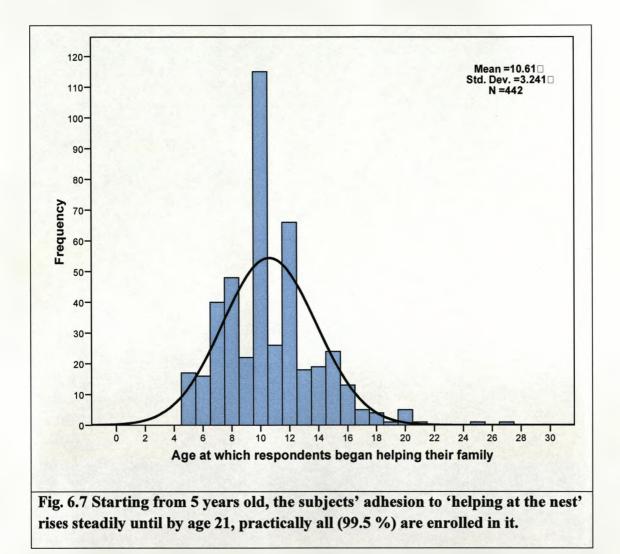
With few exceptions, practically everyone gave help of different kinds to their relatives: from 646 respondents in an extended sample —both sexes, aged over 16 years and of every civil status and reproductive background— only 6 answered as having given help for 0 years to the household; the remaining 99.1% distributed the duration of their help from 1 year up to 65 years (mean 15.66, mode 10, median 13, standard deviation 10.64, n= 646) indicating, furthermore, they had done so even since their very early childhood (see Figure 6.7).

In fact, some began helping from about five years of age with at least the simpler household chores, including "playing" at making *tortillas*, running errands, providing care to their younger siblings, supplying water from the stream and bringing firewood from the forest and many other discrete chores which became more complicated as they grew up.

Hence, according to the former data, this constitutes the preliminary stage of a prolonged and widespread 'helping at the nest' behaviour pattern, the comprehensive features of which are outlined next. From 5 years old, 3.8 % of subjects began helping; as age increases so an increasing percentage join in tasks each year, until 58.4 % of interviewees were completely or partially involved in either housekeeping work or farming by the time they were 10 years old, limited only by attending school and the extent of the strength or skills demanded by the job. By the end of their childhood, at 12 years of age, 79.2 % were incorporated into the household toil and by 16 years old, provided they were still living in their parents' house, 95.9 % of the sample were involved in every type of task that adults do, including helping with their non-offspring relatives, the only limit being set by secondary school attendance. At 21 years old, 99.5 % are incorporated into helping the household. Consequently,

the overall mean age for beginning to help their family was 10.61 and the median and mode, 10 years old.

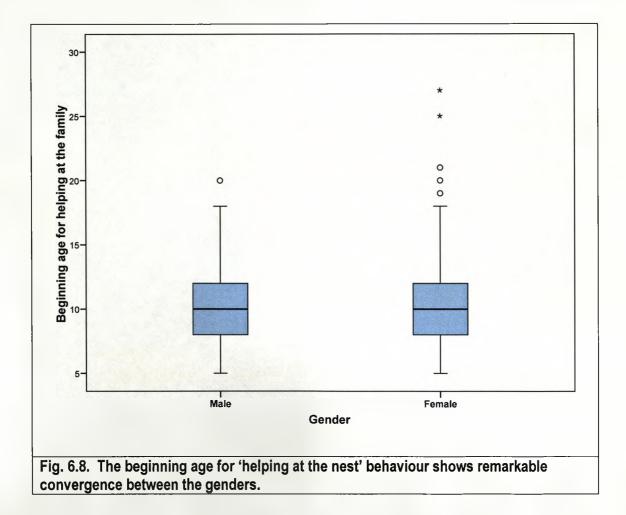
The next stage, taking charge of the household as the head of the family on marriage should constitute just a smooth shift, a simple step further.



Notwithstanding the typical appearance described by the curve in Figure 6.7, the K-S test for normality distributions of starting age frequencies of 'helpers at the nest', as far as gender is concerned, produced significant deviations as results: for the female

sub-set these were D(df 262) 0.181, p < .001, and for the male D(df 180) = 0.124, p < .001.

Even so, it is interesting to witness the total consistency between the two sexes sub-sets given their convergence and divergence parameters, i.e. female's mean = 10.60, mode = 10, median 10, variance = 10.325 and standard deviation = 3.213; whilst the male's sub-set are 10.62, 10, 10, 10.83 and 3.291, respectively. Figure 6.8 makes this point clear.



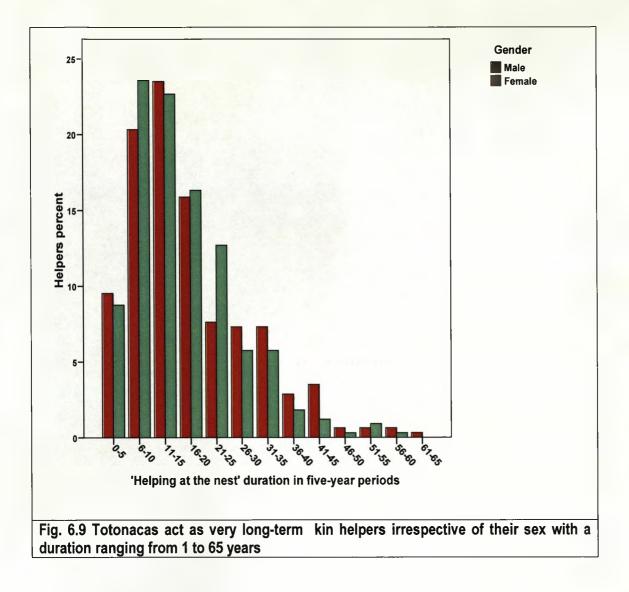
As for reproductive status (i.e. being either reproductive or non-reproductive) the K-S test for normality distributions of the starting age frequencies for 'helpers at the nest' also produced significant deviations. The percentage in the reproductive sub-set was D(df 225) = 0.163, p < .001, and the non-reproductive' result was D(df 192) = 0.149, p < .001.

In conclusion, both sub-sets have a distribution that deviates significantly from the norm, therefore in order to compare similarities between the sub-samples split by genders and reproductive backgrounds, the Mann-Whitney test was applied, the result being that there was a non-significant difference between men and women; i.e. the men (*Mean* = 10.62) didn't differ from the women (*Mean* = 10.60) in terms of the starting age for 'helping at the nest', U = 23,164.5, Asymp. Sig. (2 tailed) 0.750, *ns*, *r* = -.015. As for the reproductive and non-reproductive sub-samples, the implications are different: the reproductive (*Mean* = 10.32) differ from the non-reproductive (*Mean* = 10.92) regarding the starting age for 'helping at the nest', U = 18,845.5, Asymp. Sig. (2 tailed) 0.009, p < .01, r = -0.127.

So, different from the previous findings indicating that gender is not a factor in the starting age for giving help to the family, the results with respect to reproductive backgrounds are quite significant (p < .01):reproductive subjects started a bit more than half a year earlier than the non-reproductive. Thus, there is room for the kind of hypotheses which seeks to demonstrate that 'helping at the nest' behaviours have a positive effect on future parenting, implicating that it may be a training stage enhancing the helpers' ability for rearing their own future offspring (Emlen 1995, 1997). Furthermore, this result diverges from some other hypotheses which posit a detrimental forfeit on the direct fitness of non-offspring's helpers (Voland 2007; Barret et al 2002).

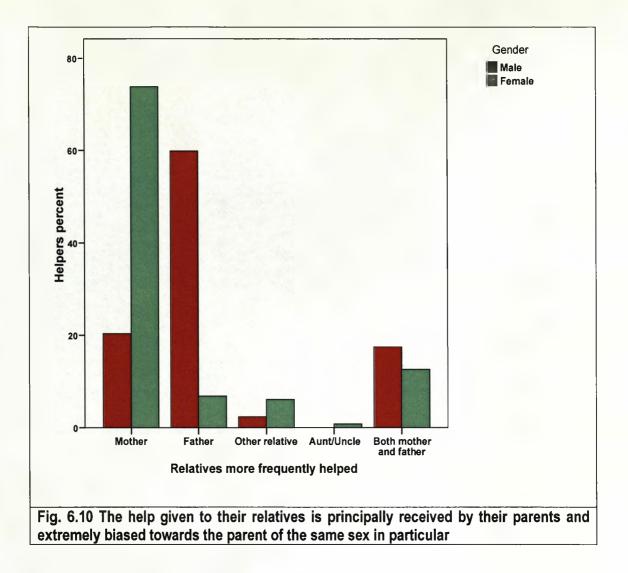
In terms of the extent of the help given, an additional enquiry was made using a very simple scale adapted to suit their common basic level of numeracy. The sample was asked to estimate the help given as an amount classified either as: "total", which meant that subjects gave all the help they were able to give to their relatives, enough to satisfy their basic needs (100% of provisions); "half", which meant that a contribution from other helper's or the needy persons themselves was necessary (50% of provisions); or else "just a little", which meant two or three additional portions were necessary to complement that of the helper's in order meet needs (25-33% of the provisions). As a result, the percentages were as follows: 38.2% interviewees answered as having given the "total", 20.4% "a half"; and 41.4% "just a little" of the supply.

Moving on to the duration of the help, Figure 6.9 shows the duration in periods of five years: informants' answers ranged from 1 year up to 65 years, with a mean of 15.66, median of 13, mode 10 and standard deviation of 10.64 years (n=646); this example shows that Totonacas act as very long-term kin helpers. The difference between the sexes in help duration appears minor, with a mean of 16.24, median 13 and standard deviation of 11.40 years for men, and mean 15.11, median 13 and 9.85, for women; U = 50,298.5, Asymp. Sig. (2 tailed) .439, non-significant.



The help was differentially addressed towards the parent of the same sex, at least partially, as often occurs in traditional communities since helping mainly consists in providing workforce for gender stereotyped activities, and the fruits of help are more likely to be shared by colleagues in the same task (Fig 6.10).

This biased help to the parent of the same sex appears somewhat less accentuated among men; however, it is in fact highly significant: U = 12,657, Asymp. Sig. (2 tailed) .000. As is also evident in the same graph, help for other close and distant relatives falls extremely far behind.



When asked whether they had stopped helping their family, about one third of the sample (33.8%) answered affirmatively. The other two thirds (66.2%) declared that they had continued helping for a long period of time, most of them still doing so at the time of this survey or until their parents had passed away.

Anyhow, for those who had stopped or drastically reduced their aid to their birth family, the reasons ascribed were: in the first place, for 50.4 %, their new marital status, because they had started to live apart from their parents and the challenges of the first year of married life hindered close contact; 15.1 % claimed that offering their help was unnecessary because their parents' situation was satisfactory; 14.4 %

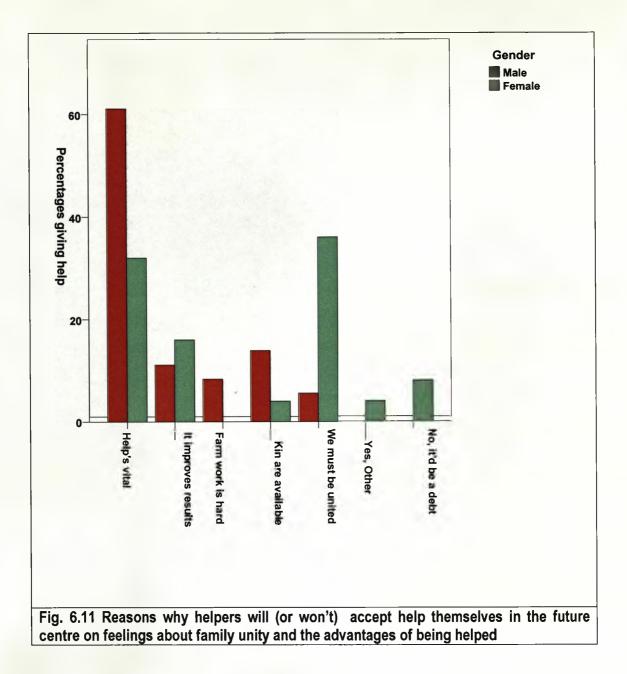
put it down to separation by geographical distance; 12.9 % to lack of resources and 7.1 % credited as simply an oversight or due to other trivial reasons.

6.1.4.1 HELPERS AT THE NEST'S INCLINATION TO BE HELPED IN THEIR FUTURE OWN NEST

Unmarried people nonetheless expect to be helped by kin and others in the future when they are married and have children of their own. Both men and women showed mostly a positive attitude about this, with no great difference, i.e. 71.1% of men and 66.7% of the women.

When asked, for precision, to explain the reasons behind their claims they declared (see Figure 6.11) that there is a marked need to be helped (49.2%), mainly because of the demanding nature of farming workloads (4.9%); they also noted the availability of kin, particularly parents (9.8%), a family sense of duty (18%) and the need to improve care for the family (13.1%). Only a few women claimed that accepting help encumbered them with a debt and, therefore, the responsibility of returning the help (3.3%). Other varied reasons for intentions for accepting future help were just 1.6%.

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6.1.4.2 COOPERATIVE BEHAVIOUR PATTERNS OF THE NEWLY COUPLED PEOPLE

81.4 % of males and

89.6 % of females gave their parents' house as the only site where they had spent their entire life so far (reproductive sample of both sexes, n=514). However, once they married, life changed drastically for many women, since for the first time they left their natal home and beloved relatives to go and live in their in-laws' home. With respect to parents' preferences, most of them prefer their sons and daughters to stay at home, but the final decision is taken in the light of both families' opinions on the basis of goodwill, land availability and the various parties' needs, although, in reality, the groom's parents have priority in this matter. But whether or not they found themselves under a new roof or with different persons around them, marriage did not represent any kind of break with cooperative behaviours.

6.1.4.3 RESIDENCE IN THE PARENTS' HOUSEHOLD AFTER MARRYING

The newly married man usually keeps on working on his parents' land and only where this is not possible, on his in-laws' land, while the newly married woman takes care of the housekeeping. In any case, both participate in almost every other economic and social activity of the extended family.

The observed numbers are these: as newlyweds, 42.6% of our female interviewees went to live at the groom's natal home, since according to the prevailing patrilocal convention; new couples must live in the groom's parents' house (Harris1993). They commonly do so by means of just adding an extra room under the same roof. However, among the informants we found many male newlyweds who had accepted moving, albeit temporarily, into their wives' parental home (29%). The rest of the newlywed couples, 28.4%, found a different alternative, moving to a new location where they settled independently.

Therefore, the proportion of newlyweds living in the groom's natal house is easily greater than the two other categories. Just as an aside with respect to the certainty of this information, I must state that the source of these figures above are married women, who make up the less adventurous side of the equation, since some

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men tended not to mention periods spent in their in-laws home; also, in cases where they had lived with both sides, they preferred just to give the natal home as the only answer, rather than both of them, even if they had in fact spent longer in the other one. So, as a consequence, the answers from the men, 62.3% of whom gave their parents' house as the post-marriage residence for the couple, were not taken into consideration.

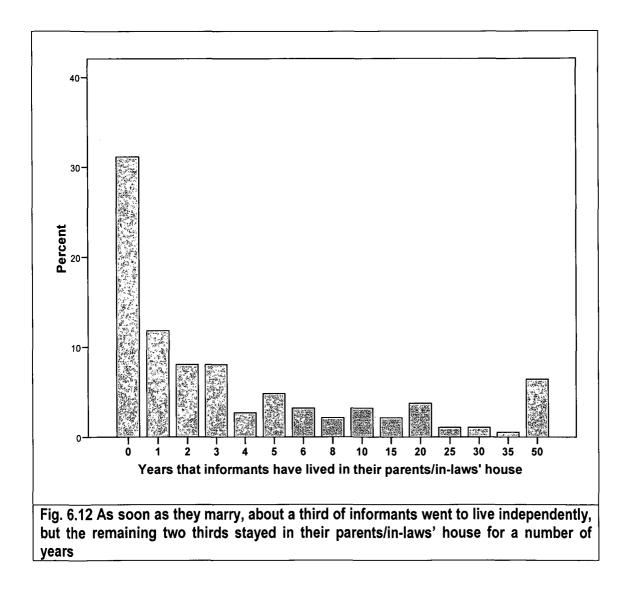
Thus, in line with the prevailing patrilocality and the answers given by the women, virilocality is the more frequent pattern for newlywed residence, as there was a significant association between the masculine gender of the individual and the residence site adopted after marriage for the great majority of the subjects: $\chi^2 = 22.302$ (df = 1), p<.001. As far as the odds ratio is concerned, the male gender is 5.7 times more likely to continue living with his spouse in his parents' house than the female gender.

Consequently, in most of the cases newlyweds started their new stage living in the parental house, uniting their efforts with the household's workforce and living under the wing of an extended family for a number of years, certainly incorporated into the household's cooperative processes. The time for leaving the nest could be divided into three broad categories according to the empirical answers of informants: on marriage, after a period of about 5 years' marriage, and after a longer time which involves the possibility of the site being inherited by them. The results for each category were about a third of this sub-sample's answers as shown by Figure 6.12 (reproductive subjects' sample n = 514).

In other words, "0" on the horizontal axis of the figure is equivalent to 31.2% of informants who went to live apart immediately after marriage; 35.5% did so between the first and the end of the fifth year after marriage; and the remaining 33.3% was

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still living in the natal home after between 6 to 50 years of marriage, which in practice meant coming into possession of the site and becoming its proprietors. Any slight fluctuation of the numbers corresponds to the contradiction already referred to above in the men's answers, which on this question were certainly taken into account.



The importance of this tradition appears to represent an *ad hoc* piece in the structure of the patrilocal system, by means of which bride and groom continue working for the benefit of the groom's family for an indefinite time period. From this sample's results it can be deduced that 78.2% had continued living in the parents' or parents-

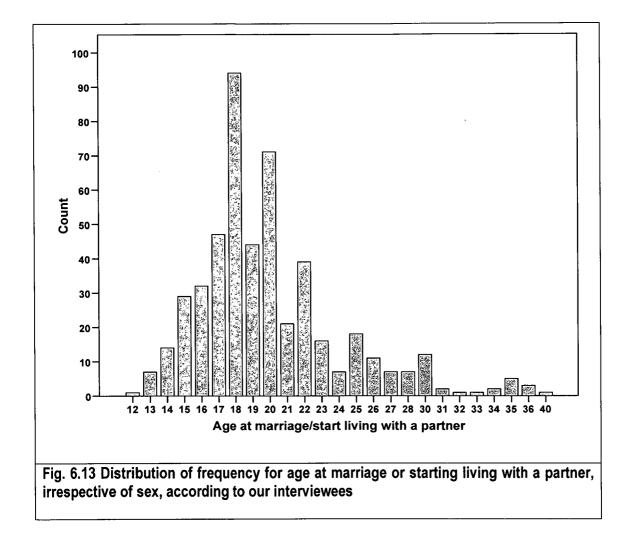
in-law's house at least for one year after their marriage, and a mean of 8.27 years, contributing to the extended family's economy.

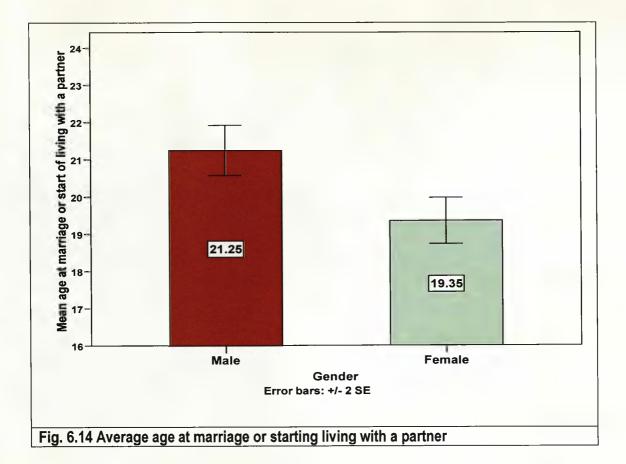
Just to add force to the last statement, 17.4 % of single males and females of reproductive age (n = 180) said they had plans not only to stay in their parents' home, but also to remain unmarried even in the long term, in order, among other reasons, to help counteract the family's economic difficulties. Instead, they planned to be dedicated totally or partially to "helping at the nest" through a variety of tasks.

6.1.4.4 DELAYING MARRIAGE BEYOND THE AVERAGE AGE AND LOOKING AFTER RELATIVES

To sum up, the subject dealt with in the former sub-section is one of the two mechanisms related to the marriage event whereby the younger generation extends their contribution to the household by means of continuing to live at home with a partner. The other one, is by straightforwardly postponing their marriage, irrespective of sex (n=514) beyond the average age of 20.13, as Figure 6.13 shows. This average age is in keeping with other additional data I produced by scrutinising the archives of the Huehuetla parish church for religious weddings: 22.9 years of age for men, 20.2 for women, celebrated during the period 1950-2001. It suggests the possibility that due to its less ritualised nature and lower economic costs, a civil matrimony was often chosen by couples, or that they simply started cohabiting about half a year before a church wedding (see Figure 6.14).

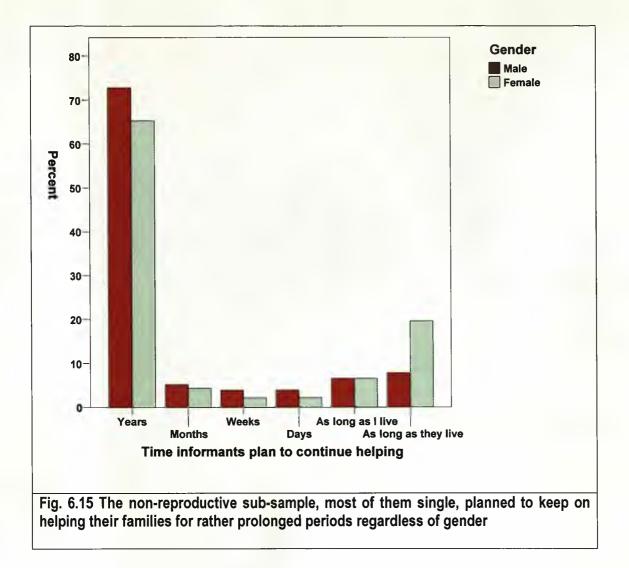
Up until a few decades ago, people used to follow *el costumbre's* prescription about when to get married (which can be summarised as 'the sooner the better'), but nowadays young people are increasingly delaying marriage. In particular, the nonreproductive sample's mean age, 22.89, is above the general population's marriage age (20.13 as seen before) and many of them are involved in activities that tend to prolong their single status, e.g. studying or going outside the municipality for a job, for instance. It is interesting, however, to notice that the main reasons given by female interviewees were mainly personal decisions (e.g. being too young or not willing to be tied down), while for their part, males were more likely to indicate material constraints (e.g. lack of economic resources, currently studying).





Following on, within the non-reproductive sub-sample, 21.9% were males aged 24 years upwards and 28.2% were females over 23; both sub-sets had surpassed the respective mean for marriage age, were still single at the time of this study and continued living in their natal house as dependants under their parents' guardianship and doing tasks in benefit of the household (n = 180).

In order to detail the characteristics of the help which our informants give, in the next Figure (6.15), how long single men and women expected to continue helping their relatives is shown. The result was rather in the same vein for both genders.



The most common response from the non-reproductive sub-sample (n=180) was "for years", by 72.7% and 65.2% of men and women, respectively; the category for as long as either their relatives or the interviewee "are alive" amounted to 14.3% and 26.1% for each sex, followed by the shorter periods i.e. months: 5.2% and 4.3%; weeks: 3.9% and 2.2%; and days: 3.9% and 2.2%, from each sex respectively; so, in the view of these results the sexes didn't seem much to differ in the time period during which they are disposed to helping their families

6.1.5 KIN SELECTION IN BEQUEATHING ASSETS

In chapter IV the Kgoyome idea of a lifetime of continuous merit by taking part in the system of *cargos* was mentioned, and the idea of a *grand finale* to life. More than just a desire to have a "good death" with a memorable funeral, to end life as a respected member of Council of Elders is the best scenario for the household's reputation and the social deference it conveys. The other important consideration in agricultural societies consists in wisely passing on the material legacy to kin; first and foremost land, even if small, is the final large investment for the benefit of the lineage, alongside some other goods.

A common subject in the evolutionary literature, bequeathing assets is useful for gauging cooperative processes, kin recognition, parental biases and many other ecological and anthropological items beyond economic boundaries (Low 2007; Barret *et al* 2004). The goal of this section is to scrutinise the criteria influencing how this population bequeaths; it also observes the effects produced by sex, age and birth-order, as well as relatedness, as tactics mediating the process and mechanisms in operation.

The procedure involved interviewing adults who had worked for decades or at least years past the average marriage age without having children, to the extent that they had been able to accumulate some assets and would realistically have some assets to bequeath. Then, a number of questions were asked about to whom they would bequeath their legacies.

The sub-sample was composed of 109 non-reproductive subjects, 52 men and 57 women with a mean age of 35.98; of these, 13.8% were living with a partner and 86.2% without a partner. All were in possession of at least one asset such as plots of land, homesteads, houses, cattle, horses, pigs, poultry and expensive equipment; 66%

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of the sample claimed assets were their exclusive property. Minor facilities and assets such as tools, a piglet or a calf, were not scored in their answers, because they were of lesser value.

When reading the results, it may appear that for certain questions, the number of respondents reduces dramatically, but these are questions which were only directed towards subjects who had given a particular response to a previous question; for example, when asked about details of how they had accessed their land share, the 45.2% who had bought it, rather than having inherited it, were set apart from these questions. Also, subjects who were an only child were not asked about the sharing out of a plot. For clarity, when the sample number drops below 40 the frequency modality used will be count; otherwise, it will stay in percentages.

Against my expectations — it should be said by the way, expectations created by some influential authors on the matter such as Agarwal (2004)—, there was no difference between the sexes in the proportion of land-owners: 65.3% of men versus 66.7% of women. Consequently, in the absence of customary primogeniture or any other birth-order convention imposing restrictions on inheritance, nor any strict cultural practice marginalising individuals from gaining access to a prospective inheritance (see Chapters II and IV) on the basis of gender — since instead of patrilineality, for example, bilateral linearity is the norm—, I considered it pertinent to embark upon the task. As a last addendum; in contrast to many other regions where land inheritance is typically a post-mortem event, it is more usually a premortem arrangement in the Totonacapan.

Backing up what was said before, a majority of 54.8 % stated that they had already inherited immovable assets from their parents or relatives, and 45.2 % had bought their assets. Since the former had actually already experienced inheritance as

heirs, they proved to be both a helpful source of information regarding an already fulfilled action and regarding their own intentions as future transmitters of a legacy. So, the questions posed to them dealt with both; first, how they became inheritors and, as a final matter, how they intended to pass on a bequest.

6.1.5.1 SUBJECTS IN THE ROLE OF HEIRS

This sub-section is concerned with the subjects' first role as heirs. The preliminary question dealt with general information about to whom the interviewee's parents had bequeathed their properties. We, the interviewers, probed for all the potential inheritors, but the fact was that there were only ever three agents in the responses: parents of the sampled people bequeathed to both daughters and sons in 63.9% of the cases, only to sons were 30.6% and only to daughters 5.6%; hence-only to children. In Table 6.9 answers are displayed divided by genders to show certain interesting disparities in the way the subjects weigh up the influence of sex, reproductive and marital status and their personal expectations.

The answers reflect a partial agreement in their initial evaluations on the way they had inherited: the majority stated that the share-out was fair and thought it inappropriate that they should expect a larger share on the basis of any personal attribute such as sex, age, and reproductive status.

However, different outlooks are assumed by some members of each gender; when they were asked whether their parents had taken their reproductive status into account, the answers indicated that just a minority claimed that offspring with children were favoured over the others (more accentuated within women), but the majority by far asserted that their parents had all treated their children equitably and regarded it to be just.

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Table 6.9 Subjects'	opinions or	n how they	inherited	from	their	parents	show
certain disparities in	views by ge	ender and r	eproductiv	e statu	IS		

	Men's assertions	Women's assertions
	(%)	(%)
Parental inheritance benefited to:	Male children: 25	Male children: 37.5
	Female children: 0	Female children: 12.5
	Everyone, irrespective of sex: 75	Everyone, irrespective of sex: 50
Civil and reproductive status influenced parents' decision:	Those married with children were favoured: 14.3	Those married with children were favoured: 20
-	Those single with no	Those single with no
	children were favoured: 7.1	children were favoured: 0
	Disregarding it, all children	Disregarding it, all
	were even: 78.6	children were even: 80
In all, was parental legacy fair?	Yes: 62.5	Yes: 55
	No, men got a bit more: 37.5	No, men got a bit more: 45
Your part in the share-out	Was fair: 73.9	Was fair: 68.4
	Less than the fair: 21.7	Less than the fair: 31.6
	More than the fair: 4.3	More than the fair: 0

In a subsequent question, 59.1% of interviewees of both sexes claimed they were in agreement with their parents when the property was equitably divided among offspring and 40.9 % did not agree (62.5 % of the male subset agreed and 37.5 % did not; into the female subset 55 % agreed and 45 % did not). The negative response was proportionally greater among women, although the difference did not prove significant on splitting up the set by genders and applying a chi square test: χ^2 (1) = 0.254, p = .614; additionally, the odds ratio was 1.37 times more likely for men to be in agreement with the share-out by their parents. Among the informants as a whole who indicated that their parents had used a criterion other than that of an equal share-out, there are some interesting answers to the follow-up questions: 1 out of 25 claimed that only male offspring had benefited; one out of 37 claimed that more was given to those who had given more grandchildren to the donor; 3 of 25 stated that more supportive children had benefited more; one out of 38 claimed more was given to the first-born sibling; 4 of 25 stated that older children were treated preferentially; 1 of 25 said a middle-born child was favoured and, finally, one of 37 claimed more was given to the last-born.

Therefore, it seems correct to state there were moderate differences between the sexes ain the extent to which they appraised their parents' fairness in bequeathing to offspring as a whole; the most palpable view was that men, as sons, were more likely to believe that sons and daughters had inherited equally; whereas women, as daughters, were more likely to believe that sons had inherited more.

Thus it appears that for these subjects the fairest criterion for bequeathing was an equal share to each child, irrespective of sex, birth-order, reproductive status, age or anything else; but subjects exhibited doubts about the extent to which their parents fairly applied this criterion.

To dispel any confusion, a chi square test was applied to the specific answers about how they were individually treated in the share-out; in other words, how different was their own share from their siblings' share, taking into account the most disputed characteristic: gender. The result showed no significant differences: χ^2 (1) = 0.521, p = .470; and the additional odds ratio was 1.66 times more likely for men to be in agreement with their own share, such as it had been bequeathed by their parents.

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6.1.5.2 SUBJECTS BEQUEATHING AS DONORS

At some point in the future, these same heirs will become bequeathing donors; therefore, the initial part of this sub-section is a set of questions aimed at understanding how they planned to bequeath their assets. The subjects were asked to specify the kinship degree, sex and age of their presumed, apparent or real-life heirs for each of their assets, in order of decreasing value: first, the most costly, their main farm-plot (or just "farm-plot"); next, their house; third, a secondary farm-plot (or just "piece of land") if any; and last, usually the least valuable, their money in cash (which also included easily marketable medium-value goods, for example a pig, some planks of mahogany or pieces of jewellery). The results were extracted starting with what proved to be the least diversified category: age. The numbers of respondents drastically decreased as the questions continued down the list of assets to be allocated, so that for the final item about the age of the beneficiaries of their money in cash, only 7 informants rendered these figures. All the numbers are summarised in Table 6.10.

It was valid that *t*-tests were applied, split by genders, for the two first items of legacy, and these showed that on average, the age selected by men for someone to inherit their farm-plot (M = 22.21, SE = 2.50) was higher than that given by the women (M = 20.08, SE = 2.57); a difference that is not significant t(29) = .57, p > .05; the effect size of which is r = .01. In addition; on average, the age men gave for inheriting the house (M = 20.53, SE = 2.74) was higher than that given by the women (M = 18.22, SE = 4.02); a difference that neither is significant t(24) = .48, p > .05, the effect size of which is r = 0.1. So, given that the numbers of cases for the remaining two assets were under 20, the results of t-tests and Mann-Whitney's tests applied are

not reported here; even so, just as a point of reference to keep in mind, the differences for the genders did not prove significant.

	Farm-plot	House	Piece of land	Cash
Range	1 to 49	1 to 49	1 to 30	2 to 45
Mode	18	18	30	18
Median	20	18.5	18	18
Mean age	21.39	19.73	18.31	18
Number of cases	31	26	16	7
Standard error	1.81	2,23	2.68	5.81

 Table 6.10 The age profile of the inheritor benefiting from each different asset

 is reported through these figures

Thus, the average age they considered best for an inheritor to receive transfer of assets was coincident with coming of age, which is at the same time the legal age to come into possession of property because of the age of majority (18 years old); however, it does not pass unnoticed that there is total coincidence between the higher standard cost of an asset and the higher average age for the inheritor.

The second category to be analysed now concerns the relatedness of the prospective inheritor. Without a doubt, an overwhelming majority of subjects uttered their wish to assign their assets exclusively to their prospective children, far above other relatives and unrelated individuals; therefore, the status of offspring had absolute predominance as the most likely criterion for becoming an heir, as shown by the percentages in Table 6.11.

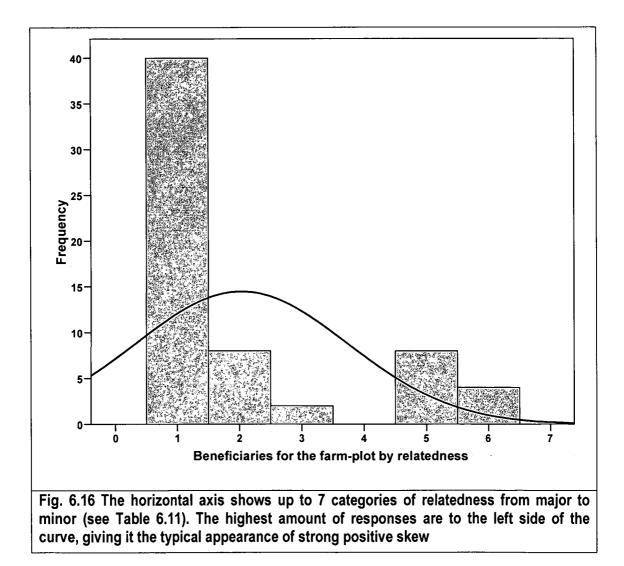
Table 6.11 Percentage of respondents who would give different categories of heritable items to relatives of various degrees of relatedness: Children had absolute predominance as most likely heirs of parents' assets, including the most valuable items

Inheritors'	Farm-plot	House	Piece of land	Cash	Average
relatedness degree					
(from major to minor)					
Children			<i>(</i>) -		
	64.5	70	60.5	66.7	65.4
Siblings	12.9	16.7	9.3	4.2	10.8
Grandchildren					
	3.2	1.7	7.0	4.2	4.0
Nephews/Nieces	12.9	6.7	11.6	16.7	12.0
Aunts/Uncles	0	0	2.3	4.2	1.6
		V	2.5	7.2	1.0
Cousins	6.5	1.7	7.0	0	3.8
God-children					
	0	3.3	2.3	0	1.4
Sons/Daughters-					
in-law	0	0	0	0	0
Others (Distant kin, affines, friends)					
kin, arimes, menus)	0	0	0	4.2	1.1

In fact, only five kinds of relatives from among the wide range of beneficiaries-to-be appeared in the left-hand column of the table which corresponds to the bequest of the farm-plot; the other four kinds of beneficiaries left out from subjects' answers (0% frequencies) appeared rather intermittently in the middle and right-hand columns of the table, which corresponds to the less valuable assets.

The far right-hand column corresponds to the averages of the four columns and highlights the consistency of responses' whereby children were most often selected for each asset; it is visible that values decrease on a par with relatedness degree as well. With members of the relatedness category arranged by decreasing degree (nine items from children to unrelated people, as in Table 6.11), the curves of distribution in all the cases turned into the typical shape of a strong positive skew (see Figure 6.16 as for instance) adopting maximum values in a z-score as recorded in Table 6.12.

However, this occurred not only in the bequest of the farm-plot; the subjects' responses for the bequest of the rest of the assets were in the same vein and even more emphatic as far as the house is concerned, which was always in favour of children.



	Beneficiaries	Beneficiaries	Beneficiaries	Beneficiaries
	For the	For the	For the	For the
	Farm-plot	House	Piece of land	Cash
Distribution skew	1.417	2.309	1.215	1.789
Std. Error of skew	.304	.309	.361	.472
SKCW	.504			
z-skew	4.66	7.472	_3.366	3.79
Significance	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001	<i>p</i> < .001

Table 6.12 The huge positive skewed values of the frequency distributions proved enormously significant for each piece of asset

For this reason the skew positive values proved enormously significant within the sample distributions for each asset as shown by Table 6.13.

As an important aside, it is worth remembering the assortative correspondence between spouses, a point amply developed in Chapter V, and to note here that, in general terms the gender sub-sets likewise demonstrate agreement on what is a very delicate issue: the household's legacy.

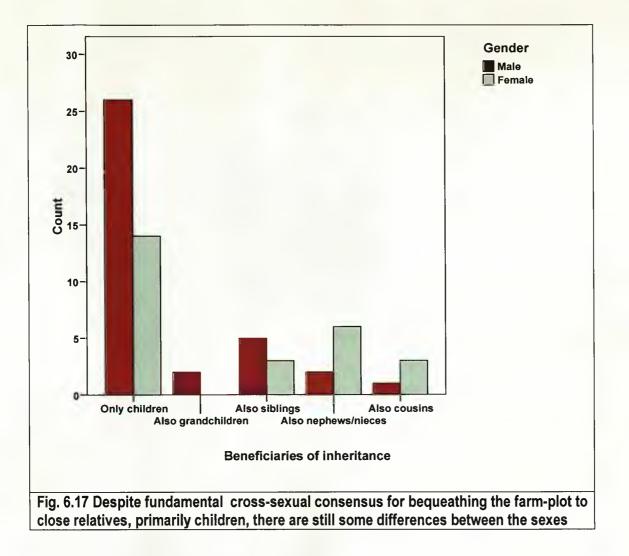
Table 6.13 Sub-sets by gender were not impartial and clearly responded to their inheritors' sex: women were consistently biased towards their same-sex progeny, visible by comparing each column, whilst men differentiated by sex and asset, showing a clear bias towards sons for the farm-plot and daughters for all other assets.

%	Fari	n-plot	H	ouse	Piece	of land	Ca	ash
	Heir	Heiress	Heir	Heiress	Heir	Heiress	Heir	Heiress
Only male donors	66.7	33.3	43.2	56.8	36	64	18.2	81.8
Only female donors	34.8	65.2	42.1	57.9	26.7	73.3	12.5	87.5
All the donors	54.2	45.8	42.9	57.1	32.5	67.5	15.8	84.2

Now, the intimate accord between the spouses may be viewed on a wider plane, i.e. the genders transcend the boundaries of pair and nuclear family through the extended family and reach out to the next generation with a strongly collective outlook that over decades and to date has achieved a rather soft transfer of material possessions.

As an indication of the aforesaid there are the strongly significant correlations between the genders when Spearman's *rho* tests are applied to the data. All four comparisons for the interviewees' responses, one for each of the four assets for the relatedness criteria with which to select inheritors, proved positively and strongly significant: for the selection of the farm-plot inheritor, r = .809, p (2-tailed) < .01; for the house as bequest, r = .766, p (2-tailed) < .05; for the piece of land, r = .876, p (2tailed) < .01; and for the money in cash, r = .816, p (2-tailed) < .01.

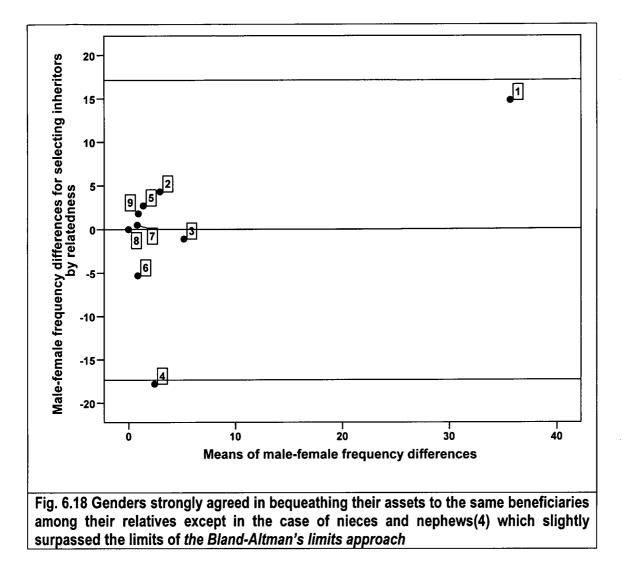
So, this represents strong agreement between the genders; but not perfect agreement; the source of any dissension comes from discrepancies between the genders over whom to designate as an inheritor from among the varied close relatives. In particular, regarding the bequest of the farm-plot, men opted for giving a larger share to children and siblings than women, judging by the frequencies with which these were selected as inheritors, as illustrated by Figure 6.17.



Women, like men, mainly selected children, although they were more often disposed than men to including lateral close relatives such as nieces and nephews and cousins. However, such slight dissension between the sexes could not prove significant under the Mann-Whitney test: the subjects, split by genders, despite a strong trend to bequeath differently, did not diverge significantly over to which close relatives to bequeath their farm-plot, U = 352.0, r = -0.246, p = .052, *ns*. Neither was there significant difference over to whom to bequeath their house: U = 331.50, r = -0.208, p = .100, *ns*; nor with respect to whom to bequeath their piece of land: U = 188.00, r = -0.14, p = .352, *ns*. For cash there was also little divergence: U = 64.50, r = -0.08, p = .70, *ns*.

To be precise, one of the main substantial issues of difference between the genders lies in the proportion children gain in the share-out at the rest of the kin's expense. Here, men became more selective than women, reducing access to their resources by lateral relatives, with the exception of siblings; women, for their part, were less reluctant to give more room to lateral younger relatives, particularly nieces and nephews and cousins, again with the exception of siblings. Even if not by much, the difference is enough to surpass *Bland-Altman's limits of agreement* in the case of nephews and nieces, judging by the averages of heirs selected for the four assets which stand significantly -0.9 points further away from the bottom line of differences between the genders (see Figure 6.18). However it can be seen in the graph that the responses of both sexes concerning children as inheritors are also far away from the mean line, but this is more a function of the massive adherence by both parents to this common option, and still stays within the upper limits of the area of agreement.

The aspect to be treated now concerns the sex of the person to be bequeathed with each asset. Seemingly, the sex of both the donor and the inheritor constitutes a formula which, according to their different combinations, biases to a certain extent the transference output. Consequently, this issue will be examined first by means of differentiating the donors and inheritors' gender.



Following the analyses of the bequeathing preferences based on the Table 6.13 where the percentages of frequencies are shown; when it comes to addressing the inheritor's sex for the farm-plot bequest, men were more likely to assign it to their sons (66.7 %), unlike women who were more likely to assign it to their daughters (65.2 %), a difference between the sexes that is statistically significant according to the chi square test, $\chi^2 = 5.748$, df = 1, p = 0.017, with 3.77 being the value of the odds ratio; this means that when a male bequeathed his farm-plot it was 3.77 times allocated to a male heir; while a woman opted at the same rate for a female heir instead.

The traditional link between the male sex and the task of farming the land was not determinant for female donors, because evidently women distinguished between who owns a farm-plot (something either sex can do since it does not imply any contravention of *el costumbre*) and who works it (something that just men usually do): the two categories do not necessarily have to be embodied in the same person, nor in persons only of masculine gender.

The rest of the comparisons concern the bequest by each gender of donor towards beneficiaries differentiated by gender for the house, the piece of land and the cash. According to the chi square tests, all three of them proved non-significant with the following values: for the house $\chi^2 = .007$, df = 1, p =.935 and the odds ratio value 1.04; for the piece of land $\chi^2 = .372$, df = 1, p =.542 and the odds ratio value .1.55; and finally for the cash $\chi^2 = .112$, df = 1, p =.737 and the odds ratio value .1.57.

Table 6.13 shows all the figures, differentiating the asset in question and the sex of the donors and inheritors; also there is a row for the donors' percentages taken together irrespective of sex.

Gender, age and relatedness aside, the last question asked of the sample was whether they had taken into consideration any practical consequences of the shareout when they chose the beneficiary they did. The reason most often stated (27.3%) was that they had sought to gain everyone's approval according to the norm of *el costumbre*, because gaining children's approval was a guarantee for avoiding troubles in the future (see Figure 6.19).

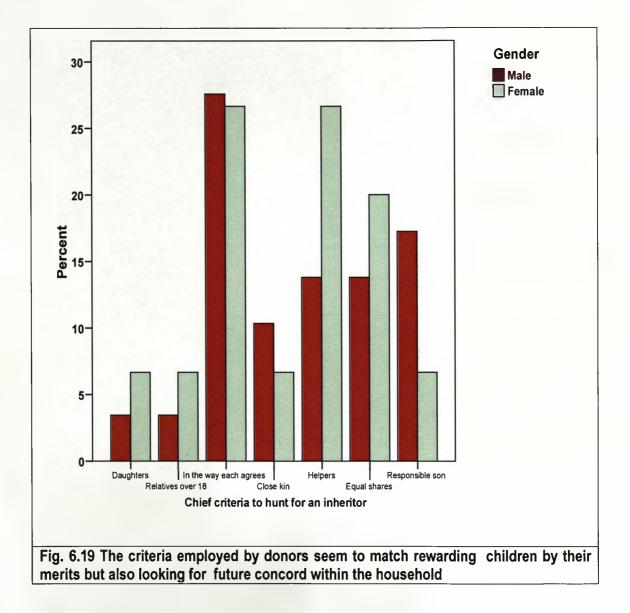
Other answers with considerable support were that the bequest should be for those who had given most help in the past (18.2%); that it was better if the properties were divided equally (15.9%); if there were no children, the recipients ought to be the closest relatives (9.1%). As an aside, the discordant note was given by 4.5% of respondents, all of them males, who stated they intended spending their assets on themselves.

However, unsurprisingly, men tended to prefer the most responsible son more than women did, whereas women tended to place a higher premium on close relatives and helpers than men did. Men were indeed in tune with women as far as gaining every child's agreement as the most important criteria for bequeathing assets was concerned; and in so far as second and third considerations, rewarding loyal helpers at the nest and then equal shares for the sake of the household's harmony were concerned.

Summarising the analyses done on the three categories examined, namely age, relatedness and gender, it is reasonable to sustain that the most likely outcome was that when bequeathing a given asset, the donor would take into account the age and the gender of the heir, but only after chief priority had been given to the relatedness link between them. Some clear trends directing the process were observed in shaping the profile of the heirs including:

- a) The more costly the piece of asset to be inherited the higher the age required for the inheritor
- b) There was a margin of influence which to some extent biased the transference by donors towards heirs of the same sex. Even in the case of the farm-plot, where the donor was a woman, there was a higher probability that it went to the hands of female heir, and vice versa for the male counterparts. However the determinant factor found for selecting an heir corresponds to the degree of relatedness.
- c) The closer the relatedness, the more certain an inheritance process will be successfully concluded between these two people
- d) A substantive criterion is making sure the choice of inheritors in the share-out will only have beneficial consequences. Thus, selecting heirs implied gaining

everyone's approval according to the norms of *el costumbre*, including the children in their share-out portion, as a guarantee of future harmony in the household.



6.2 DISCUSSION

The examination of different subsets revealed a number of ways by which Kgoyomes benefit their household as well as their extended family. Putting together all the roles which kin usually play, an outline of the family's cooperative deeds can hopefully be attained; this is the point of this discussion I now attempt to précis.

Similarity and differences were found in behaviour and attitudes associated with the subjects' gender, age, reproductive status and responsiveness to the degree of relatedness of counterparts in the cooperative process. As expected, the kinds of cooperative acts reported by the informants varied in type, duration and rates; but one of the premises which remained constant throughout the study is that each time, without exception, members of close kin were intended as the principal and often the only beneficiaries. Accordingly, an expectation to witness manifestations of high cohesion and support for the family was greatly surpassed by the results.

As the initiators of the extended family, it was necessary to observe work strategies undertaken by partners. It was confirmed that the bulk of men's work consisted, as said, in farm-plot cultivation, while the women had housekeeping as a starting point, and from there her work spread out into a more varied repertoire which included being the main care-giver to the offspring, horticulture tasks and even a supplementary labour force on the farm-plot during the most demanding periods. The concerted action between the spouses for the household's nutrition consisted in men providing the raw staples and women making them edible and timely available, as well as the same women supplementing them with ingredients from their labour in horticulture.

As for grown-up non-reproductive children, most of them single, 59.6% irrespective of sex, reported that they had contributed fixed and periodical provisions

of produce and money to their family, to the point that the contributions constituted one of the main, sometimes the main, source of input for the household's livelihood for years. Typically, men did so by growing crops for the family's subsistence; a few times, when the local market and the weather were propitious, any surplus was sold as a cash-crop; in addition, they quite frequently worked as salaried labour force outside their community. The women were no exception on this latter point, although mostly they did so as house- maids either near or far away from the family home.

Just to give an idea about how helpful these individuals were to household sustenance: 53.9% of them contributed the equivalent of at least 4 months of their family's maize consumption every year, as well as a larger amount in beans and the full annual supply of coffee. The rest of this sub-set had contributed to the household's provisioning, but only partially, which when put together with that of the former subjects, increased the supplies for the family.

When the analysis went deeper into details, a characteristic profile emerged as for the mode each gender used for allocating its contribution to the household, which included preferentially channelling resources through the same-sex parent; a trend slightly more pronounced among women. Even though clearly visible in the numbers and graphs of various questions, it showed up as non-significant when tested. There was a similar situation regarding close relatives: although the female inclination to include aunts, uncles, nieces, nephews and cousins among their beneficiaries was observed relatively more frequently than for men, it was a non-significant difference compared to the male pattern, which by contrast, targeted siblings and unrelated friends in a similar fashion.

However, to dispel any doubts, although donations were allocated to unrelated people and distant kin at a non-significant rate by any gender or subsample, the

counterpart to this is that the allocation of resources towards siblings and close relatives was extremely differentiated, indeed at similar rates across the sexes and reproductive status.

Other characteristics were also examined in order to gauge their influence in eliciting help from the subjects. Characteristics such as the gender of both the donor and the beneficiary, the age-group and the parental branch of the beneficiaries were shown as having an influence on the donors' sensitivity; namely, in the past, subjects had chosen more beneficiaries from their own sex than from the other; they had selected older people and then children over the rest of the other age groups, and more frequently in benefit of relatives belonging to the maternal branch of the family than the paternal. But such preferences must be considered as just modulating patterns of help rather than producing a significant variation.

Hence, relatedness degree was pinpointed and reiterated by results which withstood statistical tests as being the most significant factor underlying the selection of beneficiaries of help, and which confirmed the global assumption that a nepotistic skew took massive predominance in the provision of resources.

Although differences were found, for instance the unequal provision to the household by the genders (treated at length in this chapter), these could be explained at least in part by the work stereotypes enforced by ecological and cultural circumstances. An example is the cultivation of crops: men undertake it, given its demand for greater physical strength, and as a consequence of men's direct involvement in cultivating, harvesting and storage, it is easier for them to control staples and also likelier that they will report a higher index of staple provision to the household.

Understandably, women less frequently reported their participation in providing goods; instead, women largely had the role of cooking meals, so they more frequently reported food provision and carrying food to the household. In order to avoid misinterpretations in such kind of cases, the gender differentiation was not assumed as the central point of the research, but the mechanisms which were used.

To talk about mechanisms for the household's support: 55.5 % of the sampled subjects informed that one or more of their close relatives had migrated out of the district, but in the first year after their departure, 81.2% of migrants sent remittances worth \$784.93 on average, equivalent to 43.6 % of three month's maize consumption for a family of 5, or a family's total consumption for 39 days. During the second year of absence the subjects either returned home to their usual business in Huehuetla or, if still away, substantially decreased the amount of help until it eventually came to an end.

Among other issues; one of the most pervasive mechanisms of support to the household practiced by new generations of Kgoyomes with very interesting forms is 'helping at the nest' behaviour. To start with, it is their precocious age, massive coverage and multifunctional purpose. In the absence of more punctilious reports among other human populations on these particular points (Turke 1988; Flinn 1989; Emlen 1984, 1995 and 1997; Bereczkei and Dunbar 2002; Hames and Draper 2004), those of the Kgoyome people might be considered as a cross-cultural epitome.

Some of these helpers at the nest began their first endeavours at an age as young as 5 years old (3.8 % of interviewees) and gradually participation rose so that by the time they were aged 10, 58.4 % they were completely or partially enrolled in either housekeeping work or farming or both activities. At 12 years old, 79.2 % was already incorporated into helping and by 16 years old, 95.9 % already displayed a

range of helping behaviours as complex as those of adults, directing any effort, produce and almost all the money they earned towards their household, and of course, took care of younger siblings. At 21 years old, each one of them, except a couple of outliers, were fully incorporated into working for the household's benefit, unless they had got married, in which case the help used to adopt a different variant which will be treated afterwards. From there on until the next stage, namely taking the reins and being totally in charge as head of household, represented taking only a short step, made easier by the large experience and varied training already gained.

Just to detail some other features of these findings: whereas there was a nonsignificant difference regarding the initiation time for helping at the nest between boys and girls, since the mean age was 10.62 for the former and 10.60 for the latter; regarding the reproductive and non-reproductive sets, their helping start difference is significant, since the reproductive ones started at a mean age of 10.32, whilst the non-reproductive ones did so at 10.92. There appears to be a tempting suggestion of a trade-off between the postponement of starting helping at the nest behaviours and early reaching of reproductive life or, in other words, support for the kind of hypotheses which implicate that this behaviour has a positive effect on future parenting, perhaps being a training stage which enhances the helpers' ability for rearing their own prospective offspring (Emlen 1995, 1997). However, this finding offers no ground for hypotheses considering the possibility of a detrimental forfeit of direct fitness on the part of helpers of non-offspring (Voland 2007).

As for the span and duration of help towards the nest dwellers; again, Kgoyomes seem to be a paradigm because of their constancy and endurance. By way of example, 38.2% of non-reproductive interviewees had been giving enough support to cover all the basic needs of their parents and younger siblings, another 20.4% did so

enough for at least partial coverage and 41.4% helped just with a small amount. The duration of the help was rather prolonged, in a range of 1-65 years with a mean for the sample of 15.66 years. As stated in the text, the Totonacas' historical background, particularly the Kgoyomes', is that of a population which for centuries has acted as very long-term helpers of kin with no great divergence between genders nor sub-groups in general.

Although there might be a limited perception of 'helping at the nest' as being an array of behaviours associated exclusively with the age previous to sexual maturity, some other variants may be considered which better fit the social niche of the Totonaca population. Kgoyomes have made use of it adjusting a couple of mechanisms to prolong the help by children's actions in benefit of the parents.

The first one involves young adults delaying their marriage beyond the average age and extending the time they stay in the household to keep on working shoulder to shoulder with their parents in the household's benefit. This situation is especially determinant among women, given the widespread local practice of virilocality. Data coming from different sub-samples support this assumption, including that taken from the reproductive subjects' set. The current mean marriage age (or starting living with a partner) for the women was 19.35 years old, while their mothers' was 17.16; that a 2.19 years time gap between two female generations might have represented the opportunity for the young single women to stay in the natal home helping at the nest before moving to the grooms' household on marriage, according to the custom in force.

As well as this, there is an additional clue from the non-reproductive sub-sample, where 39.4% of women were single and living in the natal home at an age of 20 years old and over, having surpassed the average marriage age of 19.35. 65.2% of

these women explicitly answered that they were disposed to continue helping their parents for more years to come, many among them indicated "throughout a lifetime". Likewise, the single men's answers were in the same tune and even more emphatic in terms of helping and without significant differences with respect to the women.

This second mechanism has its origin in the ancient Indian patriarchalism in the form of the common practice of virilocality among newlyweds. Marriage does not represent such a change for many newly married men, of whom 42.6%, according to very conservative figures given by the wives, continue to work on their parents' plot, while they, the brides, join in with their in-laws' housekeeping. In addition, another 29% of couples went to live at the bride's parents' home.

Adding up both sets means recruiting 71.6% of newly-weds, i.e., fresh blood to either the parents' or the parents-in-law's workforce for a period of up to five years, since 55.8% of young couples went to live independently after five years had elapsed. The rest, 46.2% of couples, continued living there for more than five years or for an indefinite period, entertaining the opportunity for inheriting the site, as the literature reports frequently occurs for helpers at the nest (Emlen 1995, 1997; Krebs and Davies 1993).

As a corollary of this discussion, this topic, in my opinion, allows us to make a more acute contrast of the underlying features promoting altruistic attitudes among Kgoyomes because of the vital transcendence of the matter in question: bequeathing the main source of their economy, that is to say, their fully-appreciated plot of land, any immovable asset or some other valuable property.

In other words, the enquiry of adult, non-reproductive subjects who beforehand had identified themselves as well-established people, in their terms, who owned some assets, concerned itself in the first part with identifying the criteria used by the

subjects' parents (to the best of their knowledge, of course) for leaving them an inheritance; and in the second part with what they themselves had in mind regarding the criteria, procedures and characteristics of future heirs when leaving their own legacies. Next the weak influence of reproductive status (civil status included) for favouring prospective heirs with a larger share was pinpointed. It was shown that, all other features being equal, reproductive status was not a factor enhancing the chances of offspring being selected as an heir.

More disputes were acknowledged around gender influence skewing legacies, since there were discernible numbers of female heirs complaining about receiving a lesser share and of male heirs admitting having been favoured. However the statistical tests did not support a significant difference between the genders' rates, and it was considered just as a moderate-level influence; its additional odds ratio was 1.66 times more likely for males to benefit in the share-out with respect to females, which is a reliable rounding-off of the gender effect.

The only determinant characteristic turned out to be relatedness. In other words, the only factor really determining the direction of legacies was the responsiveness of the donors towards the most closely related, namely their children; this was absolutely clear when parents either bequeathed to both daughters and sons in 63.9% of the cases, only to sons in 30.6% and only to daughters in 5.6%. And apparently for every one of the actors, that was the only reasonable principle for solving the problem of how to bequeath fairly, judging by the rather high consensus achieved by the people involved, who showed rates of approval ranging from 68-78%, irrespective of sex, that their individual shares had been fair.

Perhaps the male skew recorded in this study was a direct function of accumulated generations bequeathing to relatives on the father's side and the obvious

relegation of the counterpart, the distaff side. As was mentioned in the text, mothers in general, when they do have some property of their own, slightly prefer to bequeath to daughters, while fathers do so with their sons. If fathers, in view of their larger control over the assets, had given a small preference towards their sons, after two or more generations the increasing proportions would be witnessed at the point of this survey, and it would only require an instrument sensitive enough to record it.

The other conspicuous aspect of this investigation was that the majority of parents aim to abide by the criterion of bequeathing equal shares to each child irrespective of sex, birth-order, reproductive status and age according to the information made available, and the absence of any statistically significant difference among the children in each of these categories.

The last part of the chapter consisted in unfolding the direct assertions from the donors about the characteristics they were bearing in mind regarding their prospective heirs (or actual heirs, where the bequest transfer had already been made); the beneficiaries' profile was dissected to include age, kinship degree and sex. The results dispel any doubt; even if the donors signal a range of mean ages which correspond to rather young heirs, for any of the four assets in question, the starting age was the age of majority and onwards: 18-21.39 years old. In addition, a flawless trend which associates higher cost assets with higher average age of beneficiaries was established. In other words: the more costly the asset to bequeath, the higher the age of the heir from 18 years upwards.

Effects of gender, as another category, were analysed, producing the result of a significant deviation by the parents for favouring children of the same sex when it came to the farm-plot inheritance; a little more skewed in the case of the male gender, fathers giving to their sons with a margin of advantage up to 3.77 times.

Apparently, this preference pattern had nothing to do with a sexist marginalisation, but rather a trend to fit the kind of asset to the kind of activity mainly performed by a gender's members, since these same male donors mostly preferred to bequeath their house or homestead, their piece of land and money in cash to their daughters, although these results were neither statistically significant.

However, the most solid of the findings was that concerning the donors' responsiveness to relatedness when it comes to bequeathing; undisputedly, being an offspring had absolute predominance as the key to becoming an heir/heiress and the probabilities for a relative to inherit dramatically decrease on a par with relatedness degree.

Finally, these subjects stated that, just as had been the case for their own parents who had bequeathed to them, their principal desire was to ensure that their legacies to future children produce advantageous consequences at the time of the share-out and to prevent children quarrelling over assets by means of this expedient of equal portions to everyone.

6.3 CONCLUSIONS

Since the premises of the nepotistic ends are quite well-known in behavioural theory (Hamilton 1964; Trivers 1971, 2004; Dawkins 1979; Alexander 1979, 1987), this chapter has attempted to contribute to the knowledge in detail of the form and mechanisms of cooperative behaviours during production, consumption and some other critical activities by the Kgoyome family, emphasising interactions between parents and children.

This chapter, although valid as an independent piece of work, must preferably be understood as an extension of Chapter V, which had as its central subject the cooperation between Kgoyome spouses as a pre-condition for firmly establishing a family capable of thriving in a harsh situation. In the same way that propitious features were found at the level of the partners' close interactions, in this chapter, many manifestations of cooperative behaviours and nepotistic attitudes were verified among members of the nuclear family of a similarly cohesive and altruistic nature, which can be deemed strong enough so as to expand the intimate pro-social milieu towards the boundaries of the extended family.

Finally, the family group works like a hinge which, as it turns on its own axis, opens up communication between the scope of the individuals and that of the community, so that the family mediates between these two instances, and hence it is important to reflect upon its mediator function. For this reason, in the Discussion chapter, the subject of the family will be discussed again rather at length, once the results on cooperation at the level of the community have been reported in the next chapter.

CHAPTER VII COOPERATION WITHIN THE COMMUNITY

In the two previous chapters I have demonstrated the cooperative attitudes and actions of the Kgoyomes, at the level of spouses forming partnerships as the starting point for the nuclear family household, and at the level of the extended family, its members striking up relationships with each other. In this chapter, I will extend the analyses to a broader level wherein distant kin and unrelated people from the local community are incorporated into the network of the family's chores and vice versa.

Therefore the aims of this chapter are: (1) to trace types of direct, reciprocal help (Trivers 1971, 1983; Alexander 1987; Axelrod and Hamilton 1981; Wright 2000; Nowak and Sigmund 2005; Nowak 2006) and contingent cooperation (Gurven 2006) with distant kin and unrelated people from the village community; (2) to verify the extent of altruistic help given by sampled subjects in pro-social activities in the community, which by all considerations are a type of indirect reciprocity (Nowak and Sigmund 1998, 2005; Roberts 2008), namely *apoyo* and *servicio*; (3) to evaluate some details of their labour exchange practices as examples of mutual aid (Erasmus 1965; Rothstein and Pierotti 1988; Sachs et al 2004; van Schaik and Kappeler 2006), namely *mano-vuelta*.

7.1. THE KGOYOMES' 'NO-MONEY ECONOMY' AS A SOCIO-ECOLOGICAL SETTING

Perhaps it is opportune to sound a reminder about the determinacy that the social and ecological environment exerts on the population's business, as was consistently underlined in the Introduction and Ethnographic chapters. Therefore as an introduction to this chapter, this section turns to two important aspects of the local economy: firstly, the scarcity of cash income among Kgoyomes as a factor which

preserves a widespread practice of swapping and exchange which has lasted for centuries, not just of produce and other commodities, but also of labour and services; secondly, the ancient communitarian land ownership regime, of which some ad hoc work practises are still in force, as the historical background which promotes working collectively for the community's benefit. Hence, as an additional aim, where there is no family bond or biological relatedness to mediate a cooperative action, weight is given to this couple of socio-economic premises to demonstrate that these provide a functional basis for widespread reciprocity.

According to some commonly used indices (see Damián and Boltvinik, 2003), the extended population of Huehuetla municipality are considered to be living at extreme levels of poverty (INEGI 2000), as well in a very high degree of marginalization (INI 2004). In essence, my findings about their economic situation concur with these and with those of the 2000 National Census (INEGI 2000 and 2001), details of which are given next.

From the non-reproductive sample of single people aged over 18 years (n= 109), 27.2% did not have any income and 66 % earned less than the Minimum Official Wage (MOW is just a formal indicator to measure wage variation) currently equal to \$1,485 Mexican Pesos per month,¹ with which they collaborate in the household's sustenance (see a breakdown in Table 7.1); only 6.8 % have an income above the MOW, although in most cases this is not enough to provide the most basic food requirements for a family with the mean number of four children (just as an aside; this sample group comprises the least poor of all the subjects sampled - see previous chapter).

¹ approximately £68.43 (currency updated to the 22/04/2008)

Precisely due to their material limitations, almost everyone in the community participates in either bartering with others or just giving away food from their garden, volunteering full or part-time in the local church or working at community chores unpaid, for instance, which they usually accomplish mainly by redeploying their own self-consumption of goods, time and labour.

Money incomes per month	Frequency	Percent
in Mexican Pesos		
0	28	27.2
\$1- \$400	38	36.9
\$401- \$800	14	13.6
\$801- \$1,200	16	15.5
\$1,201- \$2,000	6	5.8
\$2,001 or more	1	1.0
(N) Total	103	100

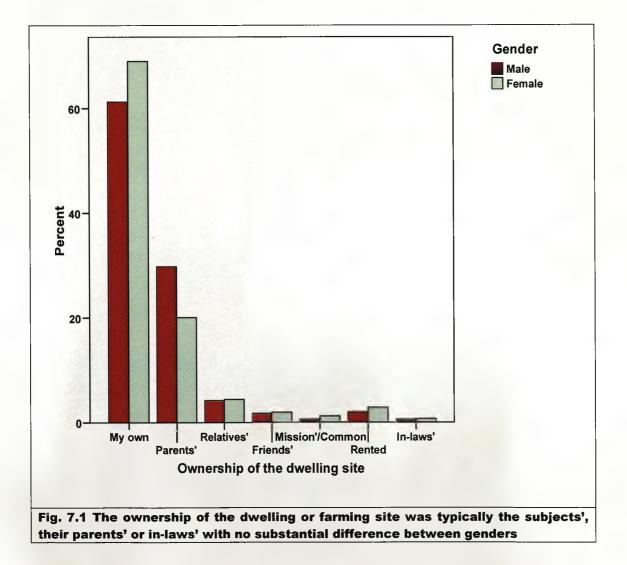
Table 7.1 Monthly incomes of people over 18 in Mexican Pesos

In the light of these material preconditions which promote an intense complementarity of resources, it is a matter of necessity that parties engage in giving and receiving, whether by simultaneous exchanges e.g. bartering stockpiles of goods, or whether by one party giving to another, with an expectation of return at a later date, contingent with their need and in a timely fashion.

The other element encouraging collectivist attitudes has been the communal ownership of the land, extensively explained in Chapters I and II. In spite of the rapid privatisation of the greater part of the commons since the 1990s, and the current extension of petty land-ownership, this historical fact continues to provide a precedent for collective working of the land and for equitable share-out of its fruits, and represents an important background for the cooperative spirit.

According to the whole sample's answers, i.e. reproductive and non-reproductive (N= 821), a huge majority of subjects, 90.5%, owned the parcel of land

where they live and farm. Of these, 65.5% stated that the site on which they were interviewed was either their own property, their parents' (24.5%) or their in-laws' (0.6%); the rest was distributed as follows: 4.3% were living on a relative's property; 2.4% on an unrelated landlord's property to whom they paid rent; 1.8% with an unrelated friend for free; and 0.9 living within the boundaries of common land which in some time in the future should become their property, as often happened in the past. Figure 7.1 shows the subjects' answers organised by gender, in which no disadvantage concerning females can be observed.



In a nutshell; these two traits, namely cash scarcity and a history of communitarian land ownership, are conditions shared by almost everyone which underpin an ideational system by means of mechanisms such as the transmission of conformism (Boyd and Richerson 2005; Henrich and Boyd 1998). Since these conditions relate to sustenance and survival, they strongly promote a communion of interests to guarantee the realization of cooperation, not only in the bosom of their families but also in actions beyond the family.

7.1.1 INTERFACE OF NEPOTISTIC COOPERATION AND RECIPROCAL ALTRUISM

The image suggested in the last two chapters of three concentric circles representing the domains of the nuclear family, the extended family and the village community, each overlaying the other, is useful for conceiving members' most usual interactions, the levels of closeness and the links of commitment. But it does not necessarily mean they are barriers isolating them from the wider context. On the contrary, they are plausible and parallel niches wherein simultaneous actions are commonly taken by people to harmonise cooperative exchanges throughout the whole social space.

Rather than disjunctive, these three levels are combinable, and as a case in point, here we find a set of subjects who, when helping others, manifested nepotistic motives together with altruistic patterns which can be labelled reciprocity, either direct or indirect, towards non-relatives. Since the results of nepotistic interest have been developed in the two previous chapters, here attention is focussed on the more properly reciprocal level.

7.2. DIRECT AND INDIRECT RECIPROCITY

Within the boundaries of their district, where face to face interaction is sooner or later likely for everyone, the Kgoyomes have three established ways of providing regular assistance to members of the community: support for the needy, service to the community and mutual labour aid (respectively, *apoyo, servicio* and *mano-vuelta* in the Spanish). Clearly separate from inter-personal lending and borrowing, *apoyo* and *servicio* are instituted as openly altruistic and may pertain to either direct or indirect reciprocity based on Costly Signalling theory (Fehr et all 2000; Gintis *et al* 2001; Price 2003), particularly as a reputation building issue (Nowack and Sigmund 1998, 2005; Roberts 2008) and underpinned by mechanisms such as intra-group punishment (Harris 1964; Shinada et al 2004), altruistic punishment included (Gintis et al 2005).

Although the boundaries between *apoyo* and *servicio* were not quite accurately delimited in the classifications made by my informants, some formal differences recorded between *apoyo* and *servicio* are those concerned with the identity of the actors involved and the context in which help is given.

In the case of *apoyo*, the link between helpers and the helped is more direct and personalised; often it involves one or a number of a household's members helping another or a number of members of another household. When *apoyo* is given, the individuals in need are clearly identified since they explicitly ask for the community's help, often in public meetings, or by asking for the intervention of their ethnic leaders, even through the formal channels of the ethnic Committee; by contrast, the donors' identity is not necessarily widely known and sometimes remains anonymous.

By contrast, the identities of individuals rendering *servicio* are publicly known and their accomplishments are recognised as a patent merit, but the beneficiaries are not individualised, since they could be anyone in the community; instead, the beneficiaries of *servicio* are usually large numbers of the community. *Servicio* is more often a collective and public process which usually requires some kind of formal administration by office-bearers and involves meetings, timetables and arrangements, often agreed by the clerical and ethnic authorities.

As for *mano-vuelta*, both parties involved - those giving and those receiving the aid - are accurately identified and the help becomes a currency which, once received, will most definitely be returned according to an agreed plan and within a timeframe of no longer than a year.

In Huehuetla it is explicitly stated that *apoyo* and *servicio* do not elicit any return or compensation, but this statement is matter of varied nuances; for instance, *servicio* is certainly not reciprocated in person, but everyone is obligated by *el costumbre* to do *servicio* at some time; for its part, *apoyo* appears at face value not to be repaid, but given that there is often direct and frequent interaction between the two parties involved, it may imply a moral obligation to be offset in some way and to some degree at least, a pay back in the vein of Mauss' gift as cited in the Introduction chapter.

Hence, although the set characteristics which define these two kinds of help are described above, they are also inflected in the ways just mentioned. Aside from the usual characteristics potentially present in any type of exchange, what my findings confirm is that one thing that is absolutely transparent is the first half of the reciprocal exchanges: how *apoyo* is *received* by beneficiaries and *servicio* is *given* by donors. The second half, i.e. the subsequent repayment of any *apoyo*, and how

servicio is received, sometimes remains opaque, not only to the eyes of the researcher but even to those of the population. The likelihood and extent to which performance of these three mechanisms paves the way for the subjects and their households to gain a good and lasting reputation as an additional indirect surplus unfortunately could not be documented in this work.

As an aside, when it came to attempting to attach conceptual definitions to features of real-life behaviour, i.e. *apoyo* and *servicio*, and at the same time classifying them according to academic categories, I found myself in a difficult situation. However, by scrutinising their operational characteristics, the predicament could be deciphered and the items hold fast as reliable mechanisms which channel help for solving the needs of others.

7.2.1 DIRECT RECIPROCITY: THE HELP RECEIVED

Firstly the responses of a number of reproductive subjects of both genders, most of them married and fully responsible for their households' subsistence will be examined (n = 540). The question was whether they had received help from either related or unrelated individuals in a regular fashion over lengthy periods in recent years; next, who their helpers were (by relationship, age, and sex) and finally the extent of the help received, measured in hours. Their answers are contained in Tables 7.2 and 7.3 divided by sex and concerned only with most basic tasks, i.e. help for farm work and housekeeping received by men and women respectively.

My findings indicate that more men received aid than women (86.5% opposed to 70.4%). Moreover, an association was found between the gender of the sampled subjects and the percentage of these subjects receiving help, which was significant according to the chi square test, $\chi^2(1) = 11.3$, p < .01; a result that seems to indicate

that based on the odds ratio, men were 1.23 times more often helped with their basic tasks than women. Additionally, the duration of help received by men was more prolonged than that received by women: 8.53 against 7.09 hours on average per day; a difference of 1.44 hours per day.

Table 7.2 Reproductive informants who received regular help in the last years and help amount received

	Men	Women
Informants helped in the last years (%)	86.5	70.4
Amounts of help received (mean hours per day)	8.53	7.09

Both results represent differences consistent with the greater male disposition to ask for and accept help, as clarified in the two previous chapters. The length of the average help sessions for both sexes was quite prolonged, although among men it was longer than among women, probably because it was given for the typical period of farm work on the plot which is normally about 9 hours daily, indicating that giving help became nearly a full-time occupation. The ecological context is probably the same source of explanation for the job difference between the genders: farming in this tough terrain demands physical strength, and group effort is repeatedly required.

As for the objective of finding out where help came from, it was mainly provided by relatives for both sexes and overwhelmingly came from same-sex siblings; a matter which gives absolute pre-eminence to the extended family as the help provider, since these subjects are married, and parents must not be included in their siblings' nuclear family and vice versa.

However, friends were the second most frequent source in the case of males, although not so for women, in whose case they were almost non-existent; help from the other-sex siblings and children was relevant for both genders, and next that coming from "others", a category which includes in-laws, godparents, godchildren, teachers, instructors and ethnic authorities, in other words, all unrelated people. Table 7.3 summarises the people involved in the help supplied, separating out the sex of the beneficiaries.

Aid given by distant relatives —probably due to the large number of relatives which their kin comprises— is greater than that given by close cousins and neighbours in the case of men. Unexpectedly, help from the informants' parents and grandparents looks quite insignificant, suggesting that given their advanced age, their help was addressed only secondarily towards the main chores and instead primarily towards other less intense tasks, such as educating and taking care of the younger relatives; lastly, the remaining individuals' help looks insignificant.

For men, the cohort of friends and peers as a source of help is worth special mention; in fact, this seems to be one of the most peculiar elements regarding patterns of help, because it broke the exclusivity of kinship as source of help.

Supporters giving help*	To Men (%)	To Women (%)
Brothers	28.3	9
Friends	16	1.4
Sisters	15.1	38.9
Children	11.3	13.9
Others	10.4	8.3
Distant relatives	7.5	3.5
Close cousins	4.7	3.5
Neighbours	2.8	4.9
Close aunts and uncles	1.9	6.9
Grandparents	1.9	1.4
Unrelated superiors	0	4.2
Father	0	3.5
Mother	0	0.7
Total	100	100

Table 7.3 Informants' main sources of help correspond overwhelmingly to siblings and close relatives; but for men, friends are relevant. The men's column is ranked to spotlight their differences with women.

* Spouses and grandchildren obtained 0% in both columns and so were not included above

On the women's part, help came from more diversified origins, which could represent an advantage in terms of its opportune availability, although it relied more on the extended family. Also, a portion of the help dispensed to women came from extra-kinship helpers in the persons of unrelated superiors, who in the case of men, did not appear at all in their answers.

Figure 7.2 shows the provenance of help classified according to the relatedness degree, and by the beneficiaries' gender, with the percentages achieved by each.

First, the closest kin, i.e. the nuclear family provided help in 14.29% and 11.32% of cases for women and men respectively; second, the extended family, acting as a household and including siblings, parents and grandparents, provided help 54.62% of the time for women and 45.28% for men; third, distant kin, composed of cousins, aunts, uncles, nieces, nephews and other distant relatives pertaining to a different household gave help 12.61% and 14.15% to women and men respectively; and fourth, unrelated helpers, including friends, neighbours, employers, teachers, patrons, landlords (if any) or other superiors, dispensed 18.49% and 29.25% of help to women and men respectively.

At this point, the extent to which extended family acted as helpers is not unpredictable; however the contribution of unrelated people as the second most frequent helpers, mainly in the case of males, was unexpected. This fact impels a shifting of the motives for this help from the purely nepotistic drive to a plausible phenomenon of reciprocity, which will be shown below in more detail.

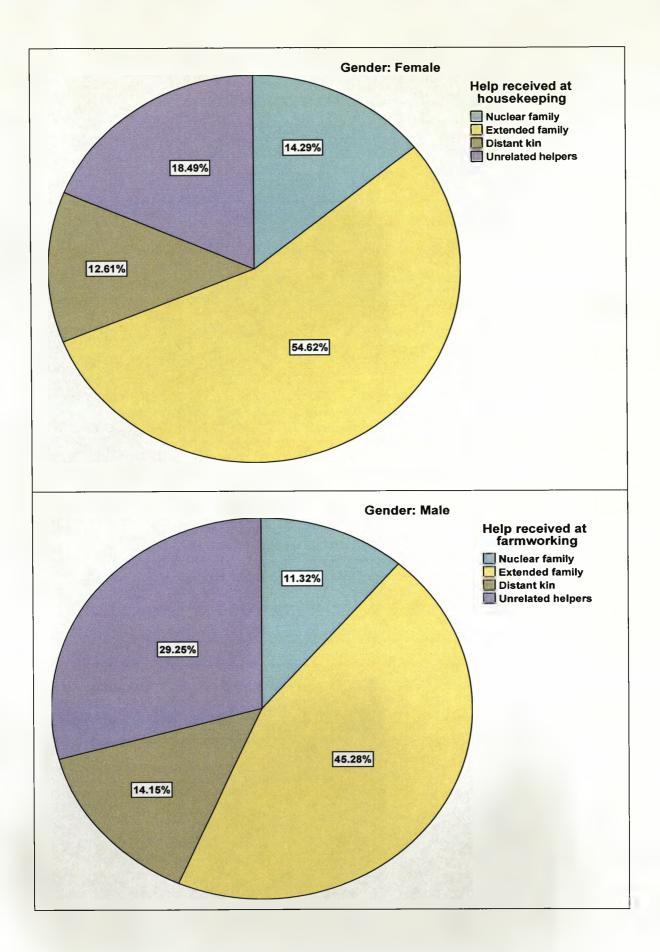
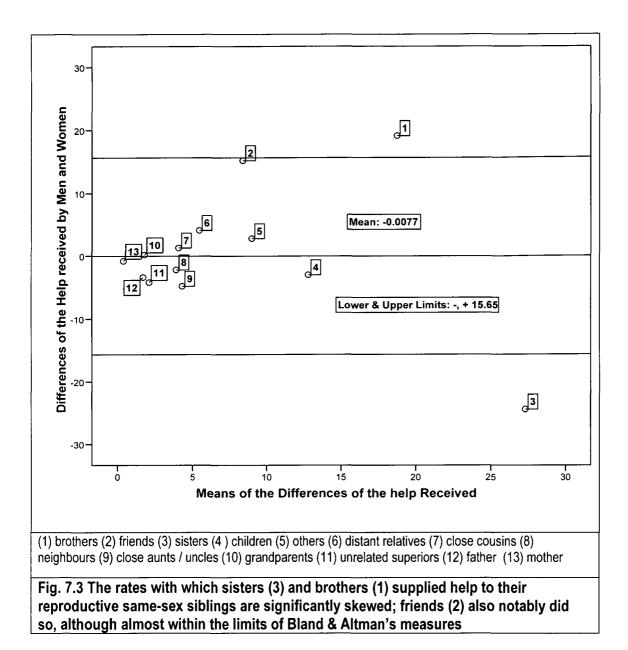


Fig.7.2 Percentages of related and unrelated helpers who were sources of the help supplied to reproductive subjects represented here by gender

Rather unexpected was that members of the nuclear family made up the fourth source of help; a quite revealing finding, the most likely explanation of which could probably be that the spouse and children are already weighed down with their own allotted responsibilities, also crucial to the household's welfare, and only provided help that connected with, but did not directly tackle their relatives' basic tasks.

Finally, looking at Figure 7.2 one has the impression of observing what cooperative processes look like in real-life, i.e. that they are the combination of a variety of motives and complementary rather than antagonist sources, from kin selection to reciprocal altruism and mutualism. In spite of some fluctuations in quantitative amounts, the figures follow a similar pattern through cross-sexual samples, in which the most frequent source of help was by far the extended family, in second place were unrelated individuals and next, relatives from the nuclear family and distant kin. By the same token, if the nepotistic help were added all together, the compound percentages would rise up to 70.75 and 81.29 % for men and women, respectively; quite massive for both sexes, although, the difference between them is perceptible, mainly due to the important contribution of the men's friends.

When the Bland and Altman approach measure was applied to compare whether there is similarity in the patterns of sources supplying help, results showed that only brothers and sisters lay beyond the limits, and were the target of help by same-sex siblings' with a significant differentiation skewed over two times from the standard deviation measure (Figure 7.2). Although for men, their friends' help was notably higher than for women (Table 7.3), it did not surpass the limits of similarity between the sexes. In other words, out of thirteen sources of help, two behave significantly differently between the genders.



7.2.2 THE HELP GIVEN

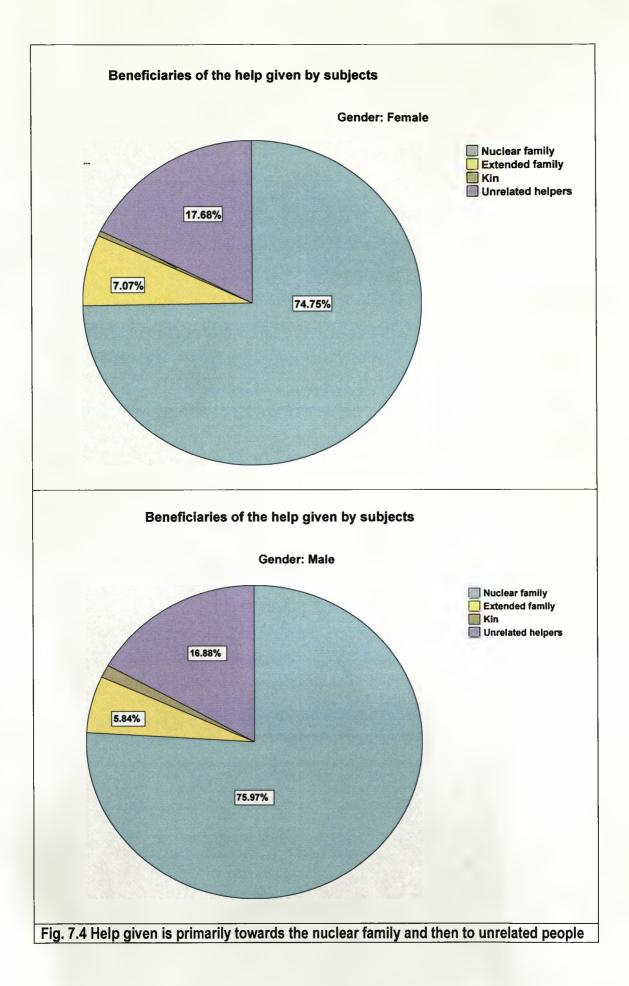
The other side of the reciprocity coin was the help delivered by these same subjects towards others, either related or unrelated, calculated on the basis of roughly a full-day's help. Among them, 71.6% of women and 63.4% of men asserted they were doing so regularly; the rest of both subsets did so just intermittently. As broken down below, it is not surprising that the beneficiaries of their help were predominately nuclear family members, overwhelmingly parents, who absorbed help

from 74.2% and 75.3% of female and male subjects respectively. This is a different view of the same picture of helping at the nest behaviours looked at earlier. However, Table 7.4 gathers together these figures to include the distribution of help recipients by their relatedness degree, the numbers of people helped by the informants, the average age of helped people and the type of help given to them, which in this case happened to be gender-typical. Figure 7.4 also represents this issue.

	Women	Men
Informants who provided help (%)	71.6	63.4
Individuals aimed as help receptors from the subjects:		
Members from their nuclear family	74.7	76
Members from their extended family	7.1	5.8
Distant kin	0.5	1.3
Unrelated people	17.7	16.9
Some other more frequent details from the helped people:		
Average number of helped people	5	4
Age of the helped	40-59	40-59
Type of tasks made for them	Housekeep	Farm work

Table 7.4 Reproductive informants who gave regular help in the past years

The two points of distinction here are firstly, a lower percentage of these men had given help (63.4 % in the table above) compared to a higher percentage of them who had received it, according to the figures showed in Table 7.2 (86.5 %) and remarked in the previous subsection; secondly, the presence of unrelated individuals amongst the targets of help, 17.7 % and 16.9 % from women and men, respectively, who form the basis for a discussion of the presence of reciprocity.



As for the first issue, that the share of help given by these men was not as large as that received by them, it can simply be explained by the presence of some more active men (or even women) allocating help multiple times to other less cooperative men, to the extent that they benefited a larger group of male recipients than themselves. Perhaps, this is the kind of individual differences in performing altruistic behaviours that this study, unfortunately, could not afford extend to.

This would apparently imply a part of men giving help less frequently, limiting themselves to giving less than they received (Table 7.5), as self-regarding people do in the terms used by Gintis et al (2007). This differentiated participation by gender in the allocating help switch proved significant when applying a chi square test $\chi^2(1) = 20.44$, p < .01; this result seems to say, based on the odds ratio, that the probabilities for men receiving help were 3.7 times higher than for those giving it. By contrast, women proved to be receiving and giving help at almost the same rate, with just an insignificant difference.

 Table 7.5 The numbers (in percentages) of subjects providing and receiving

 help show a sensible variation as for men concerns

	Men	Women
Subjects who provided help	63.4	71.6
Subjects which received help	86.5	70.4

By any measure, the substantial percentage of help received or given from unrelated people represents acts of reciprocity in a broad sense, which include *apoyo* and *mano-vuelta*. Specific cases might be categorised as direct or indirect reciprocity or a type of reciprocal altruism or mutual aid action.

7.2.3 INDIRECT RECIPROCITY: APOYO

Apoyo is promptly given to whoever is in need in the case of an emergency or a bad patch. Help of different kinds, from the physical exertion of carrying an ill-person to hospital on foot or repairing a roof, through to proffering gifts in kind and cash, for instance, can be obtained without any expectation of compulsory direct repayment to the donors, regardless of non-kinship or any other absence of relationship: it just comes with the fact of belonging to the community.

However Kgoyomes also include in this concept a deferential aid, the terms of which are agreed on the basis of habitual assistance to individuals who deserve support because the outcome of those actions will be beneficial to the entire community. A pair of good examples is becoming an *aide de camp* for the ethnic leaders who take on administrative duties, or by providing meals for guest trainers leading a workshop. For example, when women do housekeeping for the priest or men collaborate in a farming task, the fruits of which will go towards a political or religious meeting; these are also certainly considered as *apoyo*. Also, taking on any routine task for somebody else's sake could be regarded as *apoyo*.

It is important to clarify that in real life, help for people in trouble can come from various people, whether related or unrelated people; either way, it is taken as the same thing by Kgoyomes, or they refer to it as *apoyo* in either case without reserve. However, it is rather irrelevant to reiterate the overwhelming participation of kin in the provision of *apoyo* since it is largely expected as a function of the nepotistic help already studied in the previous chapter. Therefore, with the aforementioned made explicit for the sake of transparency, the data used now will be exclusively that of unrelated people giving *apoyo* in order that the motives of help may be attributed to the reciprocity impulse rather than kinship.

7.2.3.1 CHARACTERISTICS OF PEOPLE RECEIVING APOYO

Irrespective of sex, 254 informants of the reproductive sample from a set of 332 (76.51% of the sample) who answered the question, affirmed that they had received some kind of *apoyo* in the previous year. For both sexes, the main source of *apoyo* was by huge their kin, although the proportions were perceptibly different. 17.6% of the *apoyo* for women originated from unrelated individuals such as friends, neighbours and superiors; meanwhile it was 28.44% for men. This difference is significant according to the chi square test: $\chi^2(1) = 7.44$, p < .01, the result means the probability of odds ratio is 2.44 times more likely for men to receive *apoyo* from unrelated donors than for women.

In the same vein, by way of methodological procedure, the kinship link between the actors was examined in order to check the profile of people receiving *apoyo*: only 52 subjects from the reproductive sample, those answering affirmatively in the above paragraph, were reported, i.e. 22 females informed of *apoyo* for their domestic work and 30 males informed of *apoyo* for their farming work —those which stated neither close nor distant relationship with the donors— were integrated into this sub-sample.

It seems unremarkable that the kind of tasks for which *apoyo* was supplied to the sub-set corresponded with their main gender-typical tasks. However, it is very interesting not to have found any differentiation regarding the duration of help from this sub-set of unrelated *apoyo*-providers compared to the relatives' sample, which is overwhelmingly made up of related people (compare with Table 7.2). Far from a decrease in the mean daily hours of *apoyo* received from unrelated helpers, in fact it was slightly longer for men (8.96) and notably longer for women (9.25). In addition, to emphasise this finding, the mean hours a day for subjects providing help to relatives was 6.96 and the hours provided to non-relatives was 7.38.

So, to sum up, an interesting outcome was that women as a gender not only receive help from a narrower range of people in their community and kin, but in addition receive *apoyo* from a smaller group of unrelated people; by contrast, and probably in compensation for this disadvantage, they receive help of more extended duration. For their part, men receive help more frequently both from relatives and from unrelated people.

7.2.4 **SERVICIO**

Servicio, practiced since time immemorial, takes the form of unpaid work decreed by *el costumbre* as a moral duty designed to assist the community in general, including individuals with some sort of authority such as landlords, employers, the mayor and other civilian authorities, priests and religious leaders, teachers and school governors, ethnic leaders etc. Its name, borrowed from Spanish, implies 'services to the community'.

Servicio typically involves collective activities, including building or maintaining communal facilities, maintenance of churches, supporting religious services and the upkeep of roads and paths; in other words, it includes social, religious, civil or ethnic authorities or groups of people in need. A common form of *servicio* is to become a *mayordomo*, which means sponsoring religious celebrations for the feast of the town's patron saint or any other saints, a post which lasts for a year. Another is to take up a civic or political post as a member of an ethnic committee or of the Elders' Council, which involves at least three years service (see details in Chapters II and IV).

Meanwhile, underpinning these rather more conspicuous ways of helping, is the dense network of cooperation woven by people in the exercise of their everyday

activities guided by *el costumbre*, a social and ethnic expression of empathy. There are multiple sources of help acting on different levels simultaneously, in such a way that, being realistic, it becomes difficult to divide into direct and indirect help; rather, *apoyo*, *servicio* and any other help are multiply articulated to the point that some people end up receiving *apoyo* just in order that they may better render a *servicio*.

7.2.4.1 CHARACTERISTICS OF PEOPLE GIVING SERVICIO

Some items in the questionnaire probed the extent to which reproductive people were involved in *servicio*: 68 % of informants had offered *servicio* in the past (n = 514). Against any expectation, proportionally more women than men had given *servicio*: 71.6 % of women from the female subset and 63.4 % of men from the male subset; although the difference is not significant ($\chi^2(1) = 3.550$, p = .064).

Many informants, mostly women, reported that some of their relatives had directly benefited from the *servicio* they had provided, something which is entirely predictable, given not only the material effect of the help, but also the reputation to be accrued by parents and the household when *servicio* is given; therefore it was necessary to control the nepotistic link in a similar way to the former subsection. In addition, since by definition *servicio* is considered an altruistic pattern of cooperation, it was also necessary to control any economic recompense; therefore, a minor percentage (4.8 %) of interviewees who had received money for their help were excluded from this set (see Table 7.6); thus, the information taken into account was only that which came from 44 subjects from the reproductive set (25 females and 19 males) engaged in help exclusively supplied, on the one hand, to unrelated

beneficiaries, in order to avoid the nepotistic motivation and, on the other hand, only when it was not mediated by conventional payment.

However, some simple recompense, such as feeding or clothing or taking care of people giving *servicio* is understandable, and these are the most common forms of basic compensation, shown in Table 7.6, which were not regarded as payments. Since 88.6% of this sample only received daily meals, some items of clothes and companionship, it could be said that the character of *servicio* was maintained as altruistic. Meanwhile, 11.3% of these individuals held an expectation of inheriting some valuable assets in the future such as land, poultry or domestic animals.

Table 7.6 Compensation received by subjects giving servicio

Compensation in the occasion of servicio	%
Daily meals (usually two a day)	79.5
Clothes (mainly work-wear)	6.8
Instruction, protection, companion	2.3
A plot of land	2.3
A house or any estate	4.5
Any domestic animal	4.5

A predominant characteristic of people rendering *servicio* is youth: 42.4% of the sample had done *servicio* as children in primary education between the ages of 6 and 12 years old; 51.5% had done so as teenagers aged 13 to 18 and the remaining 6% as adults. At the other end of the scale, where individuals administrating the *servicio* process were identifiable, 89.1% of the sample reported adults aged between 20 and 60 years old in positions such as ethnic leaders, teachers, instructors, priests and civil authorities.

To the best of my knowledge the two most likely vocations of *servicio* were for laypeople occupying auxiliary posts in the religious systems, ranging from altar boys to *mayordomos* (see above and Chapters II and IV for details) or in ethnic leadership, i.e. membership of the ethnic committee or the Elders' Council; posts which, far from being undemanding, on the contrary, commit them to plenty of hard work.

Table 7.7 Characteristics of servicio rendered by informants in previous years

Mean age for starting their servicio (years old)	12.5
Mean age for ending their servicio	18.8
Mean number of people who received servicio per helper	4.5

Given that the period for rendering *servicio* as a general rule overlaps with the onset and development of reproductive capability, and that it usually ends just before the average marriage age, the possibility that *servicio* could have a useful training function for improving the subjects' matrimonial and parental abilities will now be discussed as the final issue of this sub-section.

In the same way that helping at the nest benefits subjects (Emlen 1995, 1997; see also the significant result found among Kgoyome helpers at the nest reported in the Chapter VI) one might expect to find better performance as head of the household among former *servicio* providers, at least to a degree. However, no significant difference was observed on comparing their behavioural patterns against those who had not provided *servicio* at all (see Table 7.8).

This means that the experience gained by the individuals, even if important, may be reflected in other areas of their lives but not in terms of reproductive success, since there were no significant differences with non-performers of *servicio* regarding the first generation of offspring, i.e. children, according to the Mann-Whitney's tests (Z = -.115, n = 352, ns, r = -.002) nor for grandchildren (Z = -1.675, n = 276, ns, r = -.01). In the same vein, the delivery of *servicio* was not found to be associated with a different average marriage age compared to non-performers of *servicio*, (Z = -1.675, n = 347, *ns*, r = -.02).

Just to round-off the information about consequences and antecedents for performers of *servicio*, some other quantitative indicators which did not show significant differences with respect to the non-performers are also reported, including schooling years (Z = -.5, n = 309, ns, r = -.02); age for starting to help at the nest (Z = -1.76, n = 141, ns, r = -.12); duration of help at the nest (Z = -1.38, n = 273, ns, r = -.03), and number of siblings (Z = -.258, n = 209, ns, r = -.008). Table 7.7 contains these comparisons of indicators between performers and non-performers of *servicio*.

Table 7.8 According to some comparative indicators *servicio* did not have significant effects on individual outcomes

	Subjects who	Subjects who
	did <i>servicio</i>	did not do <i>servicio</i>
Mean age at which they started 'helping at the nest'	11.31	10.39
Mean duration of former 'helping at the nest'	16.63 years	16.57 years
Mean number of children	4.50	4.58
School year median number	12	11
Marriage mean age	20.33	19.95
Sibship size	4.64	4.71

7.2.5 MUTUAL AID (DIRECT RECIPROCITY IN LABOUR EXCHANGE): MANO-

VUELTA

The third kind of reciprocal action involving mutual aid and labour exchange, i.e. *mano-vuelta* (literally, 'returned hand' and also, 'hand-round'), offers the opportunity for direct scorekeeping reciprocity (Nowack and Sigmund 1998, 2005; Brosnan and de Waal 2003), already described in the Introduction chapter. Kgoyomes' mutual aid consists both of gathering together goods to be allocated for

one person or household at a time, and also in the exchange of labour. This latter consists in carrying out some difficult task which requires group cooperation for the benefit of one person or household at a time, not only in farming, but also in any task that requires collective effort, such as assistance at a busy party or harvesting before the storm season, for instance, since more than just the contribution of close relatives is needed. In both modalities, restitution of help will be given according to a timetable in a similar way as a duty rota.

In such circumstances, help may be sought from neighbours, friends, distant relatives or even affines. Sometimes entire families become involved in aiding other families. On a number of occasions, I watched a dozen families working together organizing the celebration of the feast days of patron saints, attending to guests and sharing the expenses which represented about a dozen likely instances of aid per year. Everyone kept a mental record of those helping events, and reciprocation of favours was compulsory. Some informants used to say that in former times *mano-vuelta* was the general rule, even for everyday activities and not just for special occasions.

From the whole sample, irrespective of sex and reproductive state, 68.1 % of interviewees reported having participated in such actions in the previous year. Among the married, participation was higher: 73.9 % of these participated in an annual average of 2.27 rotas of *mano-vuelta*.

Men had a proportional slight lead over women (80 % of men from the male subset and 72.4 of women from the female subset), although the two sexes did not differ significantly in their participation in *mano-vuelta* exchanges according to the chi square test: $\chi^2(1) = .979$, *ns*, nor in the frequency with which they were involved each year (U = 1956, *ns*, r = -.12).

By contrast, reproductive status did indeed make a difference (74.1 % of the reproductive subset took part, while 60.9 % of the non-reproductive subset did it): so, reproductive subjects of both sexes showed a higher participation in *mano-vuelta* rotas than the non-reproductive, according to the chi square test: $\chi^2(1) = 4.421$, p <.05; whose odds ratio is 1.83. Moreover, the significant difference notably proportionally increased when the same test was used to compare subjects by civil status, i.e. single and married (74 % of the both sexes married subjects within their subset, against 59 % of the single within their subset took part): $\chi^2(1) = 6.132$, p <.05; odds ratio = 1.97; however, it was just a magnification of the effect since it was mostly the same subjects making up both sub-sets, indicating that being married almost doubled the likelihood of taking part in *mano-vuelta* rotas compared to being unmarried.

Despite not finding any correlation between number of children and age of the whole sample in terms of the number of rotas undertaken, the mean age of people involved in *mano-vuelta* during the previous year was 38.91, while for those who had not it was 34.66; perhaps one explanation could be the more likely discontinuity of traditional work habits among the young. In other words, neglecting this custom might be just a function of the informants' age, but there is also grounds for suggesting that the heavier economic burden carried by married and reproductive subjects meant that this collective action represented an effective solution.

The abandonment of traditional ceremonies and social meetings in favour of individualistic habits more proper of Western culture is one manifestation of a powerful ethnic inertia reinforcing youngsters' apathy. Conversely, in the last two decades ethnic leaders have taken action to reinstate some of the old rituals and work practices with the aim of improving the maintenance of common lands and facilities

and this has reinforced the collective spirit, and given a second breath of life to *apoyo*, *servicio* and *mano-vuelta*.

A consequence worthy of mention is the revival of ancestral ceremonies, such as the stellar *Danza del Volador*, which was performed in 2005 after a 20 year absence in Huehuetla town, with the collaboration of about 200 men to carry the heavy trunk required for it from many kilometers away. The support of their wives was also vital in feeding and tending to the men over three days. For the community to succeed in its goal to revive the *Volador*, they needed to resort to all kinds of cooperative efforts wherein networks of subgroups doing *servicio*, *apoyo* and *manovuelta* were woven to underpin such a valiant effort (see some photographs in the Appendixes section).

7.3 ETHNIC ORGANIZATION EMERGING FROM THE BASIC COOPERATIVE SENTIMENT: TWO PARADIGMS

As evidence of the Kgoyomes' intense commitment to communitarian life, they have for a long time sustained different kinds of institutions: (1) socio-political, such as the *Organización Independiente Totonaca*, formed by up to 5,000 participants to defend civil and human rights and negotiate with municipal government; (2) solidarity-related, such as *servicio, apoyo* and *mano-vuelta* already analysed above; and (3) socio-religious such as the *sistema de cargos*, extensively described in the Introduction and ethnographic chapters of this thesis.

Without a doubt, creating these kinds of institutions would be a remarkable feat of organisational capacity and communitarian spirit for any population in the world, but to have sustained them over centuries as the Kgoyomes have done represents a paradigm, it can be said, a successful concrete outcome of the strong reciprocity

spirit which they stamp on their daily actions, helpful in normal times, and indispensable in critical times, when cooperation becomes a necessary survival strategy.

By way of example, in the last nine years, the Huehuetla municipality has been heavily flooded twice by seasonal hurricanes, the roads destroyed and groups of people left isolated from their communities. Not one human casualty was registered thanks to the fact that in the first instance, while outside help was still on its way, the very people affected were willing to share food, water, medicine and other primary stocks from one household to another, from one hamlet to the next, and from one village to the other.

Individually assimilated as a religious commitment, urged on by kinship ties, bound by the commitments of the household, perhaps even prompted by ethnic sympathy and prescribed by *el costumbre*, the likelihood that help would arrive was very high, and as a guarantee that it would happen, the whole community took part in surveillance to avoid cases of theft and to ensure that everyone was bearing a share of the contingency cost.

7.3.1 THE MORE INTENSIVE THE COOPERATION WITHIN THE HOUSEHOLD, THE MORE EXTENSIVE THE COOPERATION BEYOND IT.

The second example of a paradigm of cooperative sentiment exists in the *sistema de cargos*, previously discussed (Chapters I, II and IV), but analysed here in more detail. A celebratory feast is a source of relaxation and pleasure - the larger the party, the greater the delight - except for the hosts. At least, that is the case for the most important feasts in Huehuetla, i.e. the Catholic saints' days, the feast of the Virgin of

Guadalupe, Saint Salvador and All Souls' Day. These feast days are associated with compulsory masses at the same time as traditional pre-Christian rites which encompass ritual dances including the *Negritos, Huehues* and even the very famous Volador (see appendices for photographs of this *Danza* and the *servicio* undertaken to support it. Furthermore special meals are offered to whoever is in the vicinity, often involving very large crowds. These feasts are organised and chaired by the *mayordomos* (literally stewards of a Saint). Selected men with a well-earned public reputation for being industrious, honest and free from bad habits such as alcohol abuse can openly enjoy the villagers' respect on these occasions, but since they also pay for the bulk of the expenses, they are almost always members of large extended families and cohorts of friends who share the expenses and provide back-up for the tasks resulting from this post. They are the real platform on which the exercise of the *cargo* takes place (see Chapter II for its structural connotations).

In Huehuetla town in 2003, there were six *mayordomos*, each of whom paid about \$15,000 Mexican Pesos in cash for the expenses associated with their offices during the year, not including all the items provided in kind from their relatives and friends (possibly as much again in real monetary terms). That amount is equal to the savings of the entire household over four years.

Given the increasingly difficult economic situation for the Kgoyomes in recent years, access to the office of *mayordomo* is in effect currently limited to those who, notwithstanding extended family and friends, can be supported by an offspring or close relative who has migrated out of the district to work in the city and can thus afford to send money back to cover the costs of the post, for the sake of the prestige it will afford to the family as a whole.

Somewhat of an ordeal, given the savings spent, stockpiles used up and debts accrued by the whole family for years to come, the *cargos* are a mechanism for the redistribution and sharing of wealth across the community, which has helped keep an internal economic balance throughout good and bad times; it has also safeguarded collective sentiment and created space and processes for social climbing —so much so, in fact, that they are proud to accumulate *cargos*, being aware of the social credit they represent -at the same time as it has kept the cooperative mechanisms alive and well.

Furthermore the *sistema de cargos* is deeply entrenched in the psychic ethos as a source of happiness, since Kgoyomes, like all Totonacas and Indians in general, are strongly convinced that they can gain access to heaven by means of a well-performed career in the cargo system.

7.4 MENTAL MECHANISM OF COOPERATION: BELIEF NOT IN PROFITABLE HELP, BUT EGALITARIAN

Last but not least; the handful of data to be analysed next concerns the reasons many interviewees gave to explain why they had cooperated and helped people when generally there was uncertainty around reciprocity. These subjects comprised two different sub-samples, both non-reproductive informants providing help to their relatives and acquaintances, but one sample was made up of individuals with a mean age of 35.98 years old who had already become owners of some valuable assets, whilst the other comprised individuals with an average age of 22.89 living as economic dependents in their parents' households.

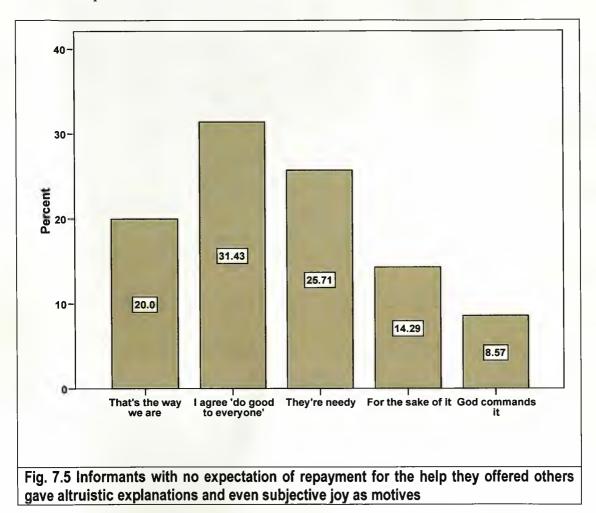
When these subjects were asked separately whether they expected a reward for their help, many expressed no expectation for repayment and just resorted to a rule of thumb that says "...in the situation we are in, this is how it must be" to explain their unselfish attitude, or something else similar making reference to *el costumbre*. After re-questioning them to be more explicit about root motivations, some gave more elaborate answers which indeed constituted a verbal analogy of their cooperative behavioural patterns, as already reported throughout this piece of work.

However, the content of their answers is interesting due to the strongly altruistic explanations grounded into a third level of explanation, that of communitarian beliefs, overlapping both the compulsion of the nepotistic drive and the interest of the extended family's continued existence, which I have encompassed in the two previous chapters.

Concretely, when the older set of subjects was asked whether they expected the help they had given to others, both related and unrelated, to be returned in the future, 53 % gave an affirmative answer and the other 47 % had no expectation of any return (n = 109). Next, the larger portion of informants who expected a recompense were questioned again, and of these a majority of 65.7 % expected to be repaid in the same kind of currency with which they had provided help (money for money, goods for goods or labour for labour) and to the same extent.

The remainder of these subjects who expected a repayment gave a variety of responses: 14.3 %, predominantly women mentioned an expectation of care and gratitude from their beneficiaries; another 14.3 %, mainly men, stated a preference for labour as their recompense; the remaining 5.7 % wanted money in cash as repayment.

The other portion, the 47 % who did not expect any return, limited their altruistic explanations to five reasons which correspond to their cultural idiosyncrasy, moral rationales, compassion, religious principles and even subjective joy. Figure 7.5 shows this picture.



Then the set of younger subjects were asked whether a helper deserves a reward after providing assistance to relatives and acquaintances: 73.4 % of the set agreed, while the remaining 26.6 % answered that it was not necessary (n = 180). However, when the matter of repayment was clarified with the respondents, it became clear that what they in fact meant was a kind of compensation rather than benefit, as in the case of *servicio*, and the majority of subjects limited this compensation to the provision of sustenance for the helper, as Table 7.9 breaks down.

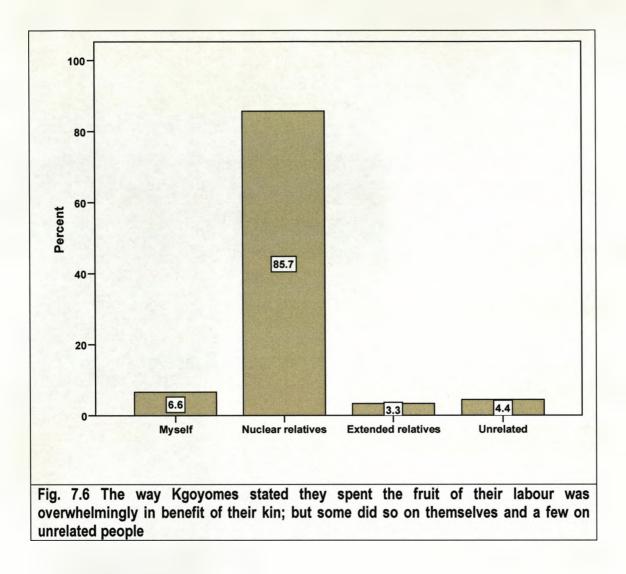
In fact, if we add together food, clothes, accommodation and medicines, 64 % of the set was only asking for the minimum for mere survival; a further 10.1 % were interested in matters related to education; 18.1 % aspired in the medium-term to a material reward such as a potential legacy as discussed in the previous chapter, and finally, 8.2 % referred to affection. Clearly, there was not a lucrative return.

Kinds of repay to be given by their assistance	Subjects (%)
Two daily meals	51.6
Clothes and shoes	6.6
Accommodation	3.3
Medicines and care	2.5
Training and knowledge	7.4
Support to go to the school	2.5
A plot of land	10.7
A house	2.5
Money	4.9
Love	1.6
Esteem and gratitude	6.6
Total	100

 Table 7.9 The kind of repayment considered fair by most of the young helpers was centred mainly on sustenance for the helper

The last figure (7.6) on this may be understood in two not dissimilar ways: firstly, as a graphical distribution of the targets of the sampled subjects' habitual sharing or, secondly, just as an illustration of both the relevance attributed to kin when it comes to passing on the fruits of labour and the extant, though quite tiny, self-centred impulse found within this population.

Concretely, when the older set of non-reproductive subjects was asked with whom they shared the fruits of their labour in the previous year, i.e. money and produce in kind, 6.6 % said " I spent it on my own"; the remaining 93.4 % shared it with relatives and unrelated people (non-reproductive subjects, owners of some assets with a 35.98 average age; n = 109).



7.5 DISCUSSION AND CONCLUSIONS

One of the most valuable advantages of studies based on participant observation in the social milieu, providing a researcher exercises due care to control non-pertinent variables, is the opportunity it affords for wide-scale recording of acts as they occur, free from artificial restrictions.

Since the object of this chapter's enquiry was helping behaviours at the level of the community, focusing on direct and indirect reciprocity, it was indispensable that certain factors be taken into account: first, the methodology had to select only those answers pertinent to the level of help in question i.e. different to that from kin, in order to avoid the nepotistic effect bias. Even though reciprocity and of course altruism in the broad sense are a common currency among the members of a household, these interactions have already been analysed in the previous chapter. Instead help from relatives was excluded and the protagonists here were non-relatives, (when this was not the case, the reader was warned and the intention for that particular enquiry was made explicit) and accordingly, reciprocal altruism in its specific sense was assumed to be the underlying motive for help. This preliminary step complicated the analytical procedure and reduced the sample's numbers, but by virtue of it, it became possible to clarify the synchronisation of help which was taking place, even if from different motives, from simultaneous and complementary helper agents. So, in the Kgoyome population, as was obvious, help most frequently came from related subjects, but other helpers were also identified, profiles of whom were given above and are summarised again in subsequent pages.

In other words, it was shown that the sources of the help were varied, complementary and assembled in parallel (each co-operated with any other), and then integrated as "manifold interconnected processes" and levels (concept from Wolf 1982:3), to the point that some people received *apoyo* just so as to be better able to give *servicio*, while already able to count on the ever-present support from their households.

Second: since actions at this level are a collective issue, indeed a matter of public performance, it was essential to situate these cooperative practices in a broader context. On top of that, traditional reciprocity, far from being a simple vestige from centuries ago, is instead still a driving force and deeply rooted in collective morality through *el costumbre*. Therefore it was vital to contextualise its

meaning in their social history, an attempt at which was made earlier (see chapters I, II and IV respectively for an historical, ethnographic and local history overview concerning the antecedents of cooperation). Hence, a theoretical framework based on such premises was considered necessary, and as such it was recreated in a nutshell in the next sub-section.

7.5.1 THE HISTORICAL SOCIAL PROMOTERS FOR COOPERATION

Like any other ethnic group from Mexico, Kgoyomes —and Totonacas in general— share similar material conditions as a consequence of their similar historical course. In particular, 93.2 % of sampled subjects, just like their ancestors going back almost five centuries, scrape a very precarious living through pettycropping and as far as cash incomes are concerned, currently earn the equivalent of one Mexican Minimum Official Wage per family, which in itself is just a symbolic reference similar to one U. S. dollar a day each.

On the other hand, even if not successful in monetary terms, 90.5 % of the full sample owns the homestead in which they dwell and farm, often a property which ultimately came from the fractioning of their ancestral commons. It is an important antecedent because in the past communal assets were cultivated by collective labour techniques which simply needed to be maintained into the present day on the same sites and in the same manner, and go with the flow of historical inertia despite the new property regime. It does not seem illogical to come into possession of a formerly communitarian plot and to employ the same mutual labour farming techniques as always to cultivate it.

The ecological environment, economic system, historical flow and social life converged to determine a way of life for this population in which cooperative

processes were critical to the population's particular modes of production and reproduction for their preservation —or survival of the economic units, namely families (see especially Chapter I) and of the genetic units (Dawkins 1985 [1976] and 2004). To paraphrase Engels (quoted in Harris 1979: 141-142): the Kgoyomes' material means of subsistence -means shared by all alike with very few exceptions in this specific population- i.e. the concrete socio-ecological environment, determined the development of their patterns of cooperative behaviour.

Sharing the same social and ecological environment, the same cultural origin, even the same antagonistic agents (i.e. the presence of *mestizos*), there is little space for fostering disparate interests between individuals. On the contrary, it is highly predictable that they should establish basic accords around vital enterprises and similar goals, mutually reinforce expectations about reciprocity, and have an ample capacity for joint actions, all proper of a class as ancient as peasants, which along its historical course has accrued a richness of culture in a clearly pro-social repertoire (Scott 1999; Vardi 2001).

As with the multiple and interconnected levels of help described above, so the structure of this network starts off with individuals supporting primarily but not only their household, but rather the wider community as well. In turn, branches spread out from the household propping up the wider community through collective tasks; at the same time, a process in the other direction is taking place, with other people in the community providing for their individual, household and community needs making connections. As a result, the Kgoyomes' help patterns condense into an integrated system.

7.5.2 A MANIFOLD-ARTICULATED HELP

Finally, since communitarian is the widest level of help and encompasses the others previously analysed, i.e. individual, nuclear and extended families; it should allow us to observe the different points where help is articulated. In fact Figures 7.1, 7.2, 7.3 and 7.4 (see above) can be read in such a sense; however, the following outstanding features are noted.

According to the figures reported throughout this chapter, among the specific elements operating in the network of help were:

(1) In second place of frequency, only behind help from same-sex siblings, direct reciprocity which originated from unrelated friends. For male reproductive subjects this reached up to 29.25 % of the sample; for the female subjects up to 18.49 % of them received help from unrelated individuals.

(2) In line with this last statement, help specifically characterised as indirectly reciprocated, namely *apoyo*, had been received from non-relatives by 28.44 % of men and 17.6 % of women in the reproductive sample in the previous year.

Irrespective of sex, 68 % of the reproductive subjects were involved in indirect reciprocity tasks of the type of *servicio*, in benefit of the community in general and some unrelated "office-bearers" in particular, who did the organising for it.

(3) In the same kind of proportions as for *apoyo*, i.e. 68.1 %, subjects irrespective of gender, reproductive or civil status engaged in direct reciprocity actions in its wider sense, such as mutual aid or labour exchange in *mano-vuelta* turns during the previous year.

CHAPTER VIII GENERAL DISCUSSION AND CONCLUSIONS

8.1 INTRODUCTION

Throughout the previous two chapters, cooperative efforts by both related and unrelated persons have been tracked by looking at the individuals in relation to three basic segments of the network: the nuclear family, the kin of the extended family and all kinds of unrelated people acting in established reciprocal transactions in the community. Whatever communitarian cooperation is, it will necessarily include these. However, I cherish some expectation that these data could provide a firm antecedent for any further study drawing useful comparisons, so as not to start from zero.

By the same token, analysing transactions in the community by non-relatives, met the three particular aims posed in the introduction of Chapter VII, and corroborated the constant presence and relatively high frequency with which cooperative actions occur, only overtaken by those which happen between relatives.

In this work a resolute attempt to include a historical dimension was made. Always necessary in an anthropological study (in the widest sense), it was never more pertinent than here, when including the communitarian level of a traditional human group. Since it goes beyond a description of cooperative behaviours to tackling the causes of such a phenomenon, I searched for antecedents in the rich conceptual palette of our theory and some others not commonly visited by scholars in the area; for this reason the frequent references to Engels, Wolf, Scott and their ilk in the last few pages of the aforementioned chapter.

Fortunately, these kinds of views are not unnatural to the evolutionary field; as I said before, I would prefer to describe them as prescribed by my specific subject. Furthermore, it could not have been done differently in my opinion, since to put a

population's cooperative processes aside from their ecological, historical and economic circumstances would be to ignore how real people conduct their real lives. It was not even necessary to invent any theoretical artefact to try and reconcile those two persuasions labelled as evolutionary biology and historical materialism; it was already envisaged. It was only necessary not to overlook the so-called phylogenetic or historical cause in their social context (Tinbergen 1963 as cited by Barret et al 2002; Hinde 1975; Krebs and Davies 1981 [2004]); Lehrer 1996); now, I will discus this and the other more relevant points.

8.2 AN OPERATIONAL DEFINITION AND AN INTEGRAL

CHARACTERISATION OF COOPERATION

When I first chose communitarian cooperation as the subject for research I had a rather general concept about cooperation; however, I conceived the phenomenon to be a voluntary process where some people contribute at the same time as others, in a similar fashion towards a shared goal which promotes their mutual well-being. Along with some authors (Watkins 1986; Brandon et al 2008), I still persist in this understanding, but now I know it to be only an operational definition which does not by a long stretch reflect the profound depths of its meanings. In an Indian community, such as Huehuetla, three levels of collective interactions were observed and an assembly of different kinds of synchronized help was recorded; in addition disparate causes, motivations and mechanisms were taken into account to explain the cooperative spirit of their dwellers, the Kgoyomes.

Thinking about the wide complexity of the issue, in the data collection stage I asked my subjects for information about different issues including economics, family reproduction, social activities, cultural concepts, personal behaviour and beliefs from

different perspectives: i.e. that of women and men, reproductive and nonreproductive individuals and single and partnered people, encompassing up to three different generations.

In the process of researching this thesis, the subject matter broadened out from the original objectives of the study: questions related to helping at the nest behaviours, mate choice or bequeathing procedures, for instance. Even where I could not go into depth, the collected information seemed sufficiently valuable to be included, although not easy to sort out. A rich database was now ready, from which I could either provide a mass of stories or commit myself to unravelling the data according to a composite approach in which different levels of analyses were included, using the varied conceptual tools of distinct disciplines as instruments to comprehend the richness of the cooperative phenomenon. In fact I did both things; the former, evidently, and now this thesis is my attempt at the second alternative.

In a practical way, I have tackled a variety of items ranging from the individual attachment to moral values to the dyadic couple engagements, and from exchanges within families to communitarian service customs. At times it was necessary to penetrate into conventional psychologies and even into some social disciplines; however, I have always kept evolutionary sciences as the guiding light.

It was necessary to deal with some issues of the Kgoyomes' lifestyle with which I am not ostensibly familiar, so as to put into better context the population's cooperative work; in so doing, I was appealing to the increasingly widespread opinion among current scientific researchers that encourages disciplinary boundaries to be widened and in particular, various economic and social theories, to be combined with psychology and other behavioural sciences, as Gentis *et al* argue (2005, see their Preface and Introduction chapters; also Loewenstein 1999; and

Greiner 1998). No area of knowledge must be avoided as forbidden territory; rather, where any discipline became helpful for exploring an issue and providing a much better understanding of a phenomenon, then it should be employed, as I attempted to do; in this case with the impact of the economic circumstances underlying the ethnic group's material life-history.

It was worth taking this route since it yielded such precious clues for shedding light on the creation of a communal economic structure which in its turn promoted the creation of a homogeneous social conformation (see especially Chapters I and VII in this thesis), its attendant culture and a set of moral values crystallised into *el costumbre*, which is transmitted to, internalised and reproduced by the individuals (see Chapter V above).

8.3 TINBERGEN'S METHODOLOGICAL THEORY

However, what was decisive was setting out the findings on a firm conceptual foundation, which were Tinbergen's four central questions for ethological research. So as not to get mixed up about the levels of explanation for the different factors promoting cooperation, I adopted the "four why" as a guide to try to avoid falling back on an eclectic range of fallacies, especially when it comes to differentiating the reasons for help given and received between parties.

When analysing the data, multiple causes which explain cooperative phenomena were acknowledged according to their preponderance: in accordance with Tinbergen's levels, some were characterised as derived from others which are considered primary; the possible relationships of cause and effect between them were identified and their general ranking of importance was respected. Ultimate causes, that is to say, the functional, historic or phylogenetic causes, were considered as

supporting proximate mechanisms and ontogenetic events, as well as facilitating their operation, moulding their manifestations, even determining their presence (Tinbergen 1963 as cited by Barret et al 2002 and Krebs and Davies 1981 [2004]; Hinde 1975; Lehner 1996 [1979]; Medicus 2005).

Likewise, querying the ultimate causation was more commonly directed at the level of the population, while the proximal causation more often was associated with the level of the individual. With respect to ultimate function, it was crucial to differentiate, in particular, nepotistic links from potential reciprocity as factors of altruism, according to whether or not there was a genetic relationship between the parties. Incidentally, a very interesting proposal made by Humphrey (1997), which swims against the tide by recognising that kin-selected altruism must in many cases render not only a genetic harvest but in addition a high degree of material reciprocation, found support in my results. This was indicated in chapter VII at the time, and is highlighted below.

On the other hand, although not entirely usual in the evolutionary area, in this study transcendental importance was given to the phylogenetic or historical cause; that is to say, the similarity in the material conditions of subsistence throughout history for the absolute majority of the ethnic group was credited with moulding communitarian attitudes which did not disregard kinship but rather, disregarded the absence of kinship, due to their massive convergence of interests. In other words, it is emphasised that sharing a historical trajectory of similar economic conditions was an ultimate cause for the origin of pro-social patterns of behaviour massively followed by the people.

8.4 ECONOMY AND SOCIETY: BASIC LAYERS OF THE HUMAN ECOLOGY

The social history which members of this ethnic group share is based on the similarity of their material conditions, and this same shared history is a factor which promotes conformity with the cooperative attitudes. More to the point, since a very long time ago the social relations whereby the population distribute the produce of their farm work form the basic conditions for their subsistence. When Kgoyomes exchange labour, supply produce in kind or give away money to their families and receive the same from their counterparts, reciprocate help to non-relatives and offer support to the community with the usual return; in short, when they cooperate, they are mutually solving their production and reproduction needs. At the same time, they are reinforcing their social foundations and such relations become socio-ecological factors determining, along with some other structural elements, their way of life. In addition, social relations also assist in shaping their cultural institutions and individuals' psychological standpoints.

The idea is part of the postulates stated by Marxist authors over the last century and a half (Marx 1859; Engels 1877). Nowadays, when these kinds of sociological contributions no longer represent any direct challenge to the powers that be (Attali 2008), perhaps one can take advantage of their enduring validity without suspicion of fuelling any propaganda. Anyway, my succinct reformulation of the evolutionary historical or phylogenetic level consists, firstly, in focusing on collective behaviour as the crucial part of the ecological setting (see Davies 1974, including the *Introduction* and *Social Behaviour* chapters; West-Eberhard 1983; Dugatkin 1997; Van Schaik 1996; Sinha 2005) and in situating it in historical time. That is to say, that by channelling the group's efforts to adapt to the material conditions of life, the same collective behaviour becomes a factor which determines the group's

behavioural course. In the case of all highly socialised species, their social context is even more crucial; in the case of such an eminently socially-minded species as the human species, the group experience is even more of a decisive factor. (Humphrey 1974; Byrne & Whiten 1888, Introduction and several chapters edited by them; Dunbar 1993, 1995b and 2006). Cooperative processes, selected as social tools, must necessarily have been present and remained at the very core of humans' ascent towards a social brain and throughout the evolutionary course of the species.

This inspiring idea that societal life-history is both origin and means reached its peak in theories such as *ecological inheritance* and *niche construction theory* (Laland et al 2000; Odling-Smee et al 2003; Day et al 2003), which argue that organisms have always modified the natural world and humans have not only physically but also socially modified it. Furthermore, from what was previously stated it follows that a human population is in itself a niche constructed through the ages on the basis of intense interactions, personal links and societal structures which then become the predominant environment and the force acting upon it to shape it; that is, behaviours, including cooperation, have constituted the tools for human evolution.

Nevertheless, going back to Marxist principles, these alert us that real knowledge of a society must come from a concrete analysis of its specific conditions, as if plotting time and societal dimensions on a graph. In that vein my job was to find out what were the relevant conditions which promoted cooperative behaviour. In the Kgoyomes' case these corresponded mainly to the traditionally communitarian mode of subsistence, which is still widespread and their shared material condition, judging by the fact that:

- a) 90.5 % of sampled subjects are petty-proprietors of the plot where they live and produce their staples
- b) 93.2 % of the subjects live in a precarious situation with the equivalent in cash for each family of one Mexican Minimum Official Wage
- c) Practically 100% depend for subsistence on agricultural produce from their farm-plots or kitchen-gardens, which their families generate by acting as a productive unit.

This aforementioned approach only sounds relevant once the ultimate historical level of explanation is recognised jointly with the functional one as being of primary importance; by logical consequence the proximate causes might be subordinated to them in the long-term context of evolution. In particular, the two other levels, i.e. phenotypic behaviours and mechanistic patterns can only be explained in the context of this ethnic group's life-history. This procedure means at some point setting aside the phenotypic gambit. When the circumstances of a study afford it, many authors recommend avoiding the phenotypic gambit, not only in the area of genetics, but also with any other trait of unknown or disputable heritability (Roff 1992). For those authors it is better to avoid gambits, in general, for any characteristic of a life-history (Hadfield et al 2007) and instead aim to explore details of a population relevant to the phenomenon. In the case of this study, the choice was taken not to sideline the economic situation as if it were a trivial matter, but rather to identify its relevant characteristics precisely because of its evident pre-eminence as a fundamental determinant. The results shown above now underpin the conclusions.

The point is that even whilst recognizing the extreme plasticity and high prosociality of the human species (Dunbar, Barret & Lycett 2005; Borgerhoff-Mulder 1996 [1998] and 2003), abstract conjectures about human nature must not be relied upon to account for the strong cooperativeness of a particular population unless one wishes to run the risk of falling into irrelevant truisms or inadequate assumptions. In this study, the Kgoyomes' shared material conditions and convergence of interests were pinpointed as the premises for explaining pro-cooperative attitudes.

In summary, to explore basic economic aspects from the Kgoyomes' historic or phylogenetic domain meant to uncover the common origins and ultimate causes for the massive cooperative processes reported in the different chapters, due to their unquestionably coincident interests and fellowship of aims.

8.5 The multiply integrated KGOYOMES' COOPERATION SYSTEM

Taking an overall view of cooperation among the Kgoyomes, I would sketch its structure as an interactional system in which are integrated manifold levels of help flowing from various actors and groups, with four different types of motives (in the terms of Tinbergen's model) and assorted expressions (many times assembled, ranging from nepotistic aims, to different types of reciprocity) and mechanisms including *servicio*, *apoyo* and *mano-vuelta*. On top of that, an assortment of concerted efforts by each gender makes up the final picture.

As complex as life, all these components synchronise and intertwine in the day to-day cooperative actions, producing particular components or combinations as far as levels, agents, causes and effects are concerned. Hence, the more ambitious the explanation and more components implicated, the more complicated the job and prone to error. In an effort to avoid making mistakes in the terms discussed by other authors (van Schaik and Kappeler 2006; West et al 2006), in this work the meanings of three basic elements are made explicit: (i) help is the very thing which on being given constitutes a benefit to the needy and a cost to the donor; (ii) helping behaviour is helping in motion and it brings together into a process the fulfilment of underlying causes, the agents' goals, and the procedures for performing and channelling help from sources to targets; (iii) the total effect of behaviours for helping through interactions and exchanges may be conceived of as a behavioural structure named cooperation; if cooperation is reiterated as a habit, it potentially becomes a cooperative system.

This study has encompassed manifold levels of participation as far as signalled agents implicated in the helping process are concerned: (i) the individual, (ii) the intersexual dyad, (iii) the nuclear family, (iv) the extended family and (v) the community; each with specific interests and issues about the nature of the social link which are reported discretely for the sake of clarity. However, this by no means rules out the constant and plentiful flow of lively contacts between one agent and the others, as I have consistently emphasised within the chapters.

8.5.1. THE INDIVIDUAL LEVEL OF PARTICIPATION

This study had purported to clarify some of the personal reasons why individuals became involved in cooperation tasks, taking the moral component as a key premise; following are some of the most important conclusions which can be considered among the ontogenetic causes of cooperative inclination and pro-social sentiments in general. Concretely, sampled subjects, non-reproductive, almost all young and unmarried showed a strong orientation towards a set of five influential concepts about what is valuable in life. Their answers account for more than 80 % of the subjects' choices, namely 'life', 'money', 'love', 'nuclear family members' and 'health'. Cross-sexual choice patterns did not vary, only the nuances: males chose 'father', females chose 'mother', for instance.

Firstly this means that such inspirational values might orient their behaviour towards a suitable cooperative attitude. Important to note is that those values were equably shared irrespective of sex or any other condition. In other words, subjects showed a resemblance in holding common long-term goals proper of a homogeneous group, as corresponds to this real ethnic group. Secondly, it reflected a conceptual consensus between the sexes who were well-focused on investing their efforts with prospective counterparts in converging aims. These individual characteristics appear to constitute fine phenotypic equipment to generate cooperative behaviours within the couple and the family, and to consolidate close affiliation to extended groups as well.

8.5.2 The pair of partners

It was not gender perspective for its own sake which encouraged this study to split most of the issues into the double path of the sexes. While it did indeed prove productive, having the gendered view as a guide (sometimes the only one) was essential as an initial indication of the dimensions of a problem, given the exploratory character of many of the queries. Moreover, it was valid to search for evidence of difference in the genders' cooperative behaviours and uncover its meaning. Last but not least, this double view was aimed at testing the union of the sexes as a first step by the population in securing its lasting survival, since the intersexual relationship is a constant symmetry found throughout each aspect of human life-history and crossing over the "four why" of behavioural causes explanation.

At the level of the inter-sexual dyad, strong parallels in the mate choice preferences of men and women were found regarding attractive traits. Subjects of both sexes adhered to a basic repertoire of physical, behavioural or social traits judged as the most attractive in a prospective partner, the predominant choices centred on being 'hard-working', 'pretty/handsome', and 'faithful'.

It was necessary to turn to socio-ecological factors to explain the sense of attractiveness among Kgoyomes, which is more comprehensive than solely physical appearance or social expertise. Specifically, men's top priority in a woman was the 'hard-working' trait, the most fitting attribute for forging a living in such a rigorous environment. Similarly an explanation of the strong attraction of prettiness for male subjects —not far behind that of male handsomeness for females— is that it might be understood as a function of good health and capacity for work in a partner, with whom one will need to work shoulder to shoulder to keep a couple and later a family safe from destitution and ruin.

A similar logic may be employed to understand the cross-sexual prioritisation of 'faithfulness' in a partner, i.e. one who will always dedicate the fruits of their labour towards the family and not become distracted by other sentimental commitments. With some secondary variants this reduced set of traits commanded the preferences of the overwhelming majority in cross-sexual, intersexual and intrasexual samples, showing consistent and significant differentiation from the rest of the traits and correlation between the sexes.

When it came to examining the intersexual dynamic for preferred traits there were few differences in patterns; from the many statistical tests applied, many coincidences emerged which centred on industriousness, faithfulness, handsomeness/prettiness and respectfulness as male primary and secondary

preferences. An extended agreement between the sexes was demonstrated and slight differences were observed, but only of degree, not of kind: men comparatively adhering more to prettiness, women to faithfulness; nevertheless counterparts showed significant preferences for the same traits. As a consequence, the sexes' rankings showed a high incidence of correlations and constitute a finding of transcendental importance because it identified a clear convergence of both feelings and goals and empathy and sympathy between the sexes, in the terms of Humphrey (2007).

Interestingly, there was not much distance between the sexes' intersubjectivity (Humphrey 2007) or capacity for efficiently mind-reading the preferences of counterparts, in their efforts to display their own most attractive traits before a suitor.

This strong trend for inter-sexual affinity was corroborated when the traits were organised into categories in the way previous authors had done. The Kgoyome trait repertoire was compared to the classifications of Waynforth and Dunbar (1995) and those of Buss (1990 and 1999) as prepared by Workman and Reader (2004). I first validated the equivalence between these two categorisations, and this is shown in Table 5.13. Next I organised the Kgoyome traits according to their equivalence with the categories of Waynforth and Dunbar (1995) with the help of the latter author. Although the ranking made by the Kgoyomes does show some coincidence with the samples used by Buss and by Waynforth and Dunbar, in general these are rather isolated incidences (see Table 5.14 Chapter V). The three samplings – that of Buss, of Waynforth and Dunbar, and my own of the Kgoyomes – are shown in the columns while the preferences, expressed in percentages, are distributed across the rows showing six groups of categories: social attitudes / interests; physical attractiveness; social skills; commitment / fidelity; sexual behaviour; resources / wealth. It can be

seen that there is considerable variation between the three samples. More to the point, there is also considerable variation within the first two samples, whereas in the Kgoyome sample there is total affinity between the sexes who prioritise resources/wealth, social attitudes/interests, physical attractiveness, commitment/fidelity, sexual behaviour and social skills in that order.

Perhaps it is no surprise that given their precarious material situation, suitors select resources/wealth in first place as the set of categories on which they base their search for a life-partner. As an aside, this marks a clear coincidence with those seminal fathers of historic and cultural materialism previously cited about the determinacy of material conditions on social systems and individual actions. As was the case with individual moral values, the gendered view shows us that the dyads from which prospective marriages and then nuclear families will originate also demonstrate a massive similarity of preferences, on top of an intra-sexual coherence. This is so much so as to permit the assortative selection of a partner, a valuable tactic giving rise to greater affinity between partners. The figures contained in the text throughout the ethnographic and data chapters illustrate the dyadic strategies of the partners for carrying out many tasks; often they complement each other's actions, sometimes they emphasise or reiterate their counterpart's efforts, other times they substitute them or sometimes even diverge from them in order to create more options; regardless, each spouse usually contributes effort in a way which maximises team-work. That is reciprocity of the most direct kind, simple but relevant, which could be detected by virtue of differentiating the behaviour for each sex, in tune with the statement with which this section started.

8.5.3 COOPERATION IN THE NUCLEAR AND THE EXTENDED FAMILY

Chapter VI, which deals with cooperation within the family, is the longest in this work; by contrast, it is one which, in my opinion, requires least discussion given its descriptive character and the great deal of quantitative evidence offered to support the statements contained within it. Furthermore, meeting the aims specified for this part of the study was made easier by the transparency with which cooperative processes are carried out at the level of the household. Anyway, the variety of forms they take was rich and the results unequivocal.

Cooperative acts carried out by the household were easy to distinguish and record during fieldwork, and so the task of analysis consisted of, firstly, describing the discrete characteristics of each of these cooperative acts, i.e. the quantity, frequency, timing and other quantitative values, in order to gauge their dimensions; secondly, specifying the precise relationship degree between the donors and beneficiaries in order to classify the motivation for help and the terms under which it was given; thirdly, calculating the helpfulness of these acts in terms of the extent to which they alleviated the family's needs. Finally, putting together a complete picture, one that does not overlook the effect of synergy that normally occurs when everyone is connected to the community level.

Seen as a life-history in progress, the individual moral values, the personal virtues embodied in and preferred by partners as attractive qualities, and the edifying prescriptions directed at prospective families by traditions like *el costumbre*, for example, are firm antecedents seen reflected in the subsequent family's closeness. Every sort of profitable consequence might be predicted in light of the aforementioned altruistic tendencies. By way of brief recap, among the deeds worthy of mention we have found at the level of the family / household:

(i) Verification of the absolute responsiveness to relatedness degree from every sample through every test applied to the data. By this it is meant that when deciding to benefit someone by supplying help and choosing a target to become involved with in cooperative deeds, the kinship link differentiation was determinant. One of the findings was an emphatic corroboration of the nepotistic drive as the basic explanation for an indisputably direct relationship of solidarity between members of the same family i.e.: the closer the genetic relationship the greater the help channelled and the more intense the cooperative liaisons between individuals.

Notwithstanding, as an exception to this rule, it must be said that only the most distant kin lost out to the kind of social and religious ties which among this population are usually very strong. In other words, only the strongest socio-cultural relationships could displace relatives from an individual's help-pool, as was seen to be the case with the most distant kin.

(ii) The general trend, however, as far as parents' treatment of their children is concerned, was that they undoubtedly shared out help and resources on the basis of an equitable criterion disregarding sex, age, sibship order, the reproductive status of grown-up children or any other condition. Tiny disagreements reported here are nonsignificant.

(iii) Special comment is warranted regarding the criteria for bequeathing their farm-plot, homestead and other valuable assets. Specifically, the average age for an inheritor coincides with reaching the age of majority and the legal right to become a deed holder. Perhaps because in this specific case the assets to be bequeathed are so vital, i.e. the household's dwelling and the means for cultivating their sustenance, there was no room for exceptions and the actual inheritors or inheritors-to-be were all among the closest family members.

Even so, women found a way to reconcile kindred interests by including some lateral but close relatives such as nieces, nephews and cousins among inheritors. In such cases, particular circumstances would dictate the specific terms, but, as a general trend, men were more selective and rigorous at applying the kinship filter.

Women for their part more rigorously applied the sex filter when choosing an inheritor, and most frequently chose female subjects as their heirs: as was clearly seen, women preferred a female inheritor for every asset, including the farm-plot, disregarding traditional stereotypes like men-farmers, hence men-proprietors, and other patriarchal roles.

Men, however despite more frequently choosing a son as the heir of the farmplot, then showed a progressively increasing preference for daughters to inherit the rest of the assets, i.e. house, allotment and cash. In particular, fathers chose daughters by a huge margin to safeguard the household's possessions. Given that, in folk parlance, women are more cautious than men in taking risks with money and material resources in general, it would appear Kgoyomes rely on the female gender to protect their means of living and production, thus exemplifying the *cargo principle*, a legendary rule from the merchant navy during the XVII-XVIII centuries: the ship most heavily-laden with valuable cargo sailed more slowly, setting the pace for all the other guard ships. This very evocative metaphor can be employed in a general fashion when discussing the reproductive resources of the sexes in evolutionary terms.

(iv) In the choice of inheritor, there was an understandable preference for privileging those who had evidently given most help in the past, i.e. the children, or close relatives where there were not any children, and in a quest for harmony within

the household, both parents affirmed having bequeathed in equal shares to each child or relative as a guarantee of future concord.

(v) Kgoyome nuclear families behave as economic units organized to meet their own needs. Thus, they keep on producing the main staples for the members' sustenance; but then, as a secondary goal, households partially irradiate some benefits to a varied range of both close and distant relatives, affines, neighbours and friends; in return they also receive them. During this process some trends were observed: firstly, a sex-bias among family members for channeling slightly more help towards same-sex relatives, a bit more frequently the case among women. Secondly, slight propensities for giving more help towards particular age-groups and kin groups: specifically children and old people, and relatives from the maternal branch.

Without doubt, the aims of the study were achieved by verifying plentiful expressions of strong cooperative behaviours and nepotistic attitudes among members of the nuclear family and of a cohesive and altruistic nature such that they pushed beyond the boundaries of the extended family and reached out towards the neighbourhood, the hamlet and the community in large.

By way of a summary, some of the most important findings are brought together in Table 8.1, below. Among issues of note is the extended practice of 'helping at the nest' behaviours, expressed in five different ways, interesting because of the very early starting age, massive coverage and multifunctional purpose. For lack of more punctilious reports among other human populations on these particular points (Turke 1988; Flinn 1989; Emlen 1984, 1995 and 1997; Bereczkei and Dunbar 2002; Hames and Draper 2004), this of the Kgoyome people might be considered as a crosscultural epitome.

Other issues highlighted in Table 8.1 are the continuing provision of help to the household by married subjects who went to live apart from the parental home and the particular case of migrants sending home remittances. In addition, some figures about the bequeathing process are put forward.

Special comment is merited by the peculiar but common case stated in Chapters VII (in section 7.1.1 and thereafter) and earlier in this chapter, of close relatives engaged in authentic acts of rather direct reciprocity. The help both given and received, as well as the cooperative processes maintained with various people, often overlapped the divisions established by classic papers in the evolutionary literature, to such an extent that categorising an action as either pertaining to kin selection or to a reciprocal exchange becomes a dilemma, since there was both a pay-off and a kinship link in the midst of the interaction.

In evolutionary terms this pair of factors is viable for stabilising altruistic patterns without one excluding the other, bearing in mind Humphrey's (1997) appeal to conceive altruism as a continuum ranging from kin selection to direct and indirect reciprocity and even mutualism. I have found a concrete set of samples reported in Chapter VI which endorses the statement by Humphrey and shows that those who give help to their families may also engage in direct reciprocity with them. Usually relatedness precedes reciprocity and many times a return of help from a relative may be indirect and optional; that is, help had combinable motives, the nepotistic together with patterns of reciprocity. For that reason, in the aforementioned section 7.1.1, a category labelled 'interface of nepotistic cooperation and reciprocal altruism' has been included in Table 8.1, mid-way between the two classes of patterns.

Regarding the classes and forms of help listed in Table 8.1; the entries in the cells are taken from the text, figures and tables of the relevant chapter sections of this work.

For simplicity, the columns indicated by a letter (a-d) concern the magnitude of categories, and the rows indicated by numbers (1-11) correspond to cooperative behaviour forms. I have tried to summarise the magnitude of cooperativeness using some very simple indicators such as coverage, duration, intensity and starting age: 'coverage' means the percentage of subjects or cases performing the behavioural variable or receiving the benefits from it; 'duration' is the time invested in the behaviour or activity (in years, months, days, as appropriate); and 'intensity' is the effort necessary for the act to be physically performed, or amount of discrete tasks.

8.5.4 COOPERATION IN THE KGOYOME COMMUNITY

In a historically aggressive landscape like that of the Kgoyomes, for an endangered population to prevail might mean either that every family unit becomes entrenched in their self-regarding redoubt, like the Marxist expectations of the small-holding peasants (see Chapter I and Chapter VII). Or else it might mean that families engage in weaving a fabric of structural solidarity, on the basis of their convergence of material interests and millenarian identity and designed to protect themselves as an ethnic population.

To this question, communitarian life in Huehuetla may be put forward as an explicit answer. Egocentric practices and sophisticated indulgences do not have much room; on the contrary, life is made-up of lively religious worship, civic commemorations, ethnic commemorations, family parties, tasks for the household, political meetings, school assemblies, youth games and activities, well-attended traditional rituals, ordinary daily work, even gossip on the rural paths; group conversations in public premises, bartering of produce, massive exercise of customs,

running errands, asking favours, constant collective labour and a long etcetera, openly shared by everyone.

On this particular issue, I would not only argue that the concrete facts fail to endorse the Marxist statement above, but, taking the very same premises as Marx himself, I argue that they actually contradict it (1885 [2001]; 1971 [2001]; Marx 1859; Engels 1877): despite their rural peasant existence, the material conditions of life for the Kgoyome population which is Indian and communitarian, have been the basic social promoters for cooperation among them.

Table 8.1 Some of the more conspicuous classes and forms of help in the community								
	Forms of help	Coverage (a)	Duration (in years) (b)	Intensity (averages) (c)	Starting age (d)			
Kin selection	Helping at the nest I: juvenile facet aged 5 to 16 (1)	95.9 % of children enrolled by age 16	Mean = 15.66	Increasing with age: 15 kind of tasks; 5 days-week; up to 10.2 hours a day; 4 beneficiaries each	From age 5; 58.4 % enrolled by age10			
	"Classic" helping at the nest II: youthful facet age 16+ Supplying goods to household (2)	59.6 % of non- reproductive offspring are family's main providers in kind and cash	69.9 % intended to continue it for 'years'; 18.7 % intends it 'for life'	Everyday, everything				
	Helping at the nest III: Postponing the marriage age and the nest departure (3)	31.41 % stay unmarried, living in the parents' house, working for the household		Everyday, everything	21.25 for men, 19.16 for women			
	Helping at the nest IV: Staying at the nest with the spouse after marriage (4)	68.8 % of couples do so	From 1 up to 35 years (or to death); Mean = 8.27 years	Couples live totally integrated with the original family				
	Provisioning: 26.3 % of offspring married and living apart keep providing for their original household (5)	66.2 % of sample receive help	Long lasting	Receiving full provision: 39 % half = 18 % A small part = 41 %				
	Migrants sending money to the household (6)	1 member is a migrant sending money	81.2 % in first year; 66.7 % in second	\$784.93 each three months				

Interface - A mid- step between kin selection and reciprocal altruism	Parents bequeathing land and chattels (7) Apoyo received from relatives (8)	Heirs who received a fair share: 71.4 %; less: 26.2 %; more: 2.4 % Helped men: 62.6 %; women: 77.4 %	As long and as much as necessary	All kinds of help: in kind, cash and workforce	Age of the inheritors Mode: 18; Mean: 21.39
Reciprocal altruism: direct and indirect	Apoyo (as received from non- relatives) (9) Servicio (Mainly offered to the community) (10)	Helped men: 37.4 %; women: 22.5 % 68 % of informants, at an age of 39.71, at least for one year have been enrolled	Daily workforce sessions: 7-8.5 hours 1-65 years: mean = 14.55;	All kind of help: in kind, cash and workforce Week-days in sessions of 9 hours; 11 slight-hard tasks; 1-45 assisted people	From 13.32 years old henceforth
Mutualism	Mano-vuelta rounds; 2- 15 people (11)	68.1 % of the subjects enrolled	Piecemeal, from 1 day to 2 weeks each term	1.72 rounds per person a year	From 14 years old henceforth

The population's way of life has been firmly rooted in a robustly communal framework, thanks to which all households, exceptions apart, came into collective and individual ownership of their land, however small and fragmented, and will continue in possession of it; at the same time all share the same socio-economic structural conditions, including forms of labour organisation, income levels and techniques of production; as a result, there is a full convergence of interests.

All the other reasons in the previous levels being considered, from the individual to the communitarian, Kgoyomes have actually opted for the second alternative: for constructing a complex structure articulated by helping mechanisms such as *apoyo, servicio, mano-vuelta, sistema de cargos* and some others, not labelled with such resonant names, such as simple regular help given without any hope of return; also indirect, non-contingent, delayed reciprocity interactions complementing the array of altruist instruments.

There, cooperation is the totality of pro-social behaviours fulfilling the social space cemented by all the actors recruited in the different levels of individual, inter-sexual dyad, nuclear family, extended family and cohort of allies, which all join to create the shared links of reciprocation.

Finally, cooperation is the system, whereby varied and secure sources of help, habitually fulfilling complex and composite functions, are integrated into a multiple interconnected process. With all the aforementioned, plenty of evidence has been demonstrated to support the initial objectives of this thesis of an outstanding case of cooperative behaviour, that of the Kgoyomes from Huehuetla.

Cooperative ties are unsurprisingly stronger in the intimate lap of the nuclear family and weaker and less frequent when reaching further beyond it. By virtue of some linking element it should be feasible to extrapolate this mechanism onto wider circles. One might think of a massive socialisation of the effect of altruism, as Darwin contrived it "... to the welfare of

others. (...*since*) As man advances in civilisation, and small tribes are united into larger communities, the simplest reason would tell each individual that he ought to extend his social instincts and sympathies to all the members of the same nation, though personally unknown to him. This point being reached, there is only an artificial barrier to prevent his sympathies extending to the men of all nations and races." (Darwin 1994 [1871]:100-101; also cited by Wright 1994:372).

8.6 FINAL POINT: A COOPERATIVE SENTIMENT TO TRANSCEND FROM THE WELFARE OF THE TRIBE TO THAT OF THE NATIONS

Researching in the field of cooperation has allowed me to become acquainted with some theoretical proposals dealing with viable evolutionary paths towards the socialisation of altruism (Grusec 1991) for the survival of 'the most humanised' and everyone, to gain access to a successful stay on the planet living in good quality standards and the globalisation of happiness. In my opinion that, after all, is what evolutionary science is all about.

In the trajectory of biology there have been several seminal claims in direction of the expansion of welfare 'from small tribes to the men of all nations' by virtue of social instincts and human sympathy by Darwin himself (1981 [1871]). Trivers conceived, among many other things, the idea of a mental structure to detect cheaters and to extend honest reciprocal altruism as a means for it. More recently, Alexander (1979 and 1987; Nowak and Sigmund 1998 and 2005) conceived of massive indirect reciprocity as the necessary (moral) level for improving society through reputation building. In tune with Huxley senior, Williams aimed his modern cry of rebellion against the immorality of nature (1995). Sober & Wilson and some others have elaborated on the mechanisms around group selection for pro-social cohesion to be extended and selfishness to be defeated (Sober & Wilson 1998; Wilson 2007).

Gintis, Fehr, Boyd, Richerdson and their fellows considered the expansion of strong reciprocity by means of altruistic punishment and strategies for cultural selection (Gintis, Bowles, Boyd and Fehr 2005 and 2007; Fehr et al 2002). Lastly, Humphrey (1997 and 2007) purports to comprehend intersubjectivity to understand the social mind as a device to provide the possibilities for an altruist continuum.

In my opinion, evolutionary psychology and behavioural ecology must encompass all these proposals and some others into a coherent synthesis to make understandable everything that has been processed about altruism, cooperative behaviours and pro-social attitudes and to disseminate it towards local societies and universal society.

In the particular case of the Kgoyomes, my personal opinion is that their next step in search of a higher level of integration would logically be to seek better unity between the Highland Totonacas as the basis for the reconstitution of the Totonaca nation, starting with a union of the ethnic population spread out across twenty municipalities in the states of Puebla and Veracruz, on the basis of linguistic, religious, and cultural backgrounds and similarities in their economic situation, premises which make the task less difficult. Urged on by the aggressive policies of national and local governments, in the last two decades the long march in that direction appears to have been started by them.

For my part, I have understood that the cooperative phenomenon is a synthesis to which every level, from the individual up to the community, contributes in many different but complementary ways; if we all want to improve cooperation to enjoy its fruits, everyone must take part at every plausible level.

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APPENDIX A - QUESTIONNAIRES

Folio:
A. DATOS GENERALES
1. Fecha Encuestador:
 2. Comunidad y municipio donde se realiza la entrevista 1. Cesik 2. Lipuntahuaca 3.Huehuetla Centro 4.Kuwikchuchut 5. 5 de Mayo 6. Putaxcat 7. Chilacoyo del Carmen 8. V. Guerrero 9. Xonalpú 10. Putlunichuchut 11. Leakgaman 12. Chilocoyo Gpe. 13. Dimas López Otra
 Nombre (o número de identificación)
4. Lengua original 1. Totonaco 2. Español 3. Náhuatl 4. Otra 99. No sabe/no contestó
5. Sexo: 1. Hombre 2. Mujer
6. Edad:años
 7. Religión: 1.Católica 2.Evangelista 3.Étnica 4.Otra 5.Ninguna 99.No sabe/no contestó
 8. Estado Civil (Si contesta 4 o 5 pasar a la pregunta 9^a) 1. Solter@ 2. Casad@ 3. Unión Libre 4.Viud@ 5.Separad@ 99.No sabe/no contestó
 9. ¿Tiene usted novi@? (sólo para los que contestaron 1) 1. Sí, Cuánt@s 2. No ¿Por qué? 1. No lo sabe 2.No hay información 3. Ayuda a su mamá 4. No quiere 5.No le han hecho caso 6. No se complica la vida 7. No es bueno 8. Por falta de dinero 9.No le gusta 10. Ya esta comprometido 11.Se siente bien así 12. No le dan permiso 13. Está estudiando 14. Otra 99. No sabe/no contestó
 9a. (En caso de que este sea su segundo matrimonio por viudez, separación o multipariedad) ¿ Tuvo usted otra pareja antes de su actual esposa? 1.Sí 2. No. 99. No sabe/no contestó
9b. ¿Cuántas hijos son de su anterior matrimonio?
10. Reproductividad: ¿Tiene usted <u>hij@s</u> ? 1. Sí 2. No 99. No sabe/no contestó 10 ^a ¿Cuántos hijos hombres tiene? ¿Cuántas hijas mujeres tiene ? Total
 11. ¿Tiene <u>niet@s</u>? 1. Sí 2. No 99 No sabe/no contestó 11^a ¿Cuántos nietos hombres tiene?¿Cuántas nietas mujeres tiene ?Total
12. Ocupación: ¿A qué se dedica?1. Trabaja2.Estudia3.Dedicad@ a labores del hogar4.Es desemplead@

5. Ayuda a su familia 99 No sabe/no contestó 13. Ayudantía: (Anote según convenga) Diario o casi del diario ayuda a su familia: 3.cuidando a sus hermanos 1. Con las Labores del hogar 2. Con las labores del campo 4. Cuidando a sus padres 5. Cuidando a otros familiares 99. No sabe/no contestó 14. ¿Cuántos años tenia cuando empezó a ayudar a su familia haciendo tareas como cuidar a sus hermanos menores, moler nixtamal, echar tortillas, acarrear agua, leña, etc? 14^a ¿Ya dejó de ayudar a su familia? I. Sí 2. No, hasta la fecha les sigo ayudando 14^{b} . En qué medida les sigue ayudando? 1. Totalmente 2. A medias 3. Sólo un poco 14^c. Durante cuántos AÑOS ha ayudado usted a sus padres o familiares? años 14^d¿Cuál es el motivo por el que ya no ayuda ni siguiera un poco a sus papás? v.\.- l 1. Por que ya soy casad@ 2. No tengo recursos 3. Me aparté y vivo lejos de mis padres y familiares 4. A mi espos@ no le gusta que le dé cosas a otros 5. Mis padres y hermanos no necesitan que les avuden 6. Es por descuido y se me olvida darles ayuda 7. Otra razón (especificar) 15. ¿A quién ayudaba usted más cuando empezó a ayudar? 1. Mamá 2.Papá 3.Otro familiar ¿Quién era? 16. Ya no ayuda a sus padres ahora, pero anote si lo hizo en el pasado durante: años 17. Alguien de la familia sale del municipio a trabajar? 1. Sí ¿Quién? _____ 2.No 17ª. ¿A dónde va o se fue a trabajar? 1. Otra comunidad 2. a Puebla 3. Otro estado 4. A Estados Unidos 99.No sabe no contestó 18.¿Manda dinero a la familia? 2. No ¿Cómo cuánto? ¿Cada cuánto tiempo? 1.Sí 15^a.. Ya no manda pero mandaba en un principio 1. Sí 2. No 99. No sabe/no contestó 19. Residencia: ¿Con quién (es) vive? 2. Con mi espos@ 1. sol@3. Con mis hij@s 4.Con mis padres 5. Suegros 6. Con mis herman@s 7. Con algun@s amig@s 8. Con algunos familiares 99. No sabe/no contestó 20. El lugar donde vive usted es: 1.Casa propia 2.Casa de mis padres 3.Casa de mis parientes 4. Casa de mis amig@s, no-parientes 5. en el seminario, convento o casa religiosa 6.Casa Rentada 99. No sabe/no contestó 7. Otra 21 ¿Piensa tener hij@s en el futuro? 2.No ¿Por qué? 1.Sí 1. No quiere tener hijos 2. No alcanza el dinero 3 .Ya tiene hijos 4. Por la edad 5. Esta cara la vida 6.Ya tiene los hijos que quiere 7. Por problemas de salud 8. Su esposa esta operada 99. No sabe/no contestó 9. Ya no da el campo alimentos 10. No esta preparado 21^a. ;Cuántos hij@s le gustaría tener en el futuro? Cuántos hombres? ;Cuántas mujeres? 22. ¿Cuántos años ha estudiado usted? (1) Ninguno (2).1, 2, 3, 4, 5, 6 de Primaria (3). 1, 2, 3 de Secundaria (4) 1, 2, 3, de Preparatoria (5) 1, 2, 3, 4, 5 de carrera Otros estudios (¿Cuáles?) (6). Biología (7) Conafe (8) Enfermería (9) Herrería (10) Alfabetización (11) Catequista (12)Promotor del IMSS 99. No sabe/no contestó

23. ¿Qué otros conocimientos, oficios, o habilidades relacionadas con labores del hogar, del campo, negocios, empleos o artesanías sabe usted?

 Sembrar (café, 	vainilla, etc.)	 Carpintería 	3.Hacer artesanía	as 4.Co	cinar
5.Tejer					
6. Bordar	7.Panadero	8.Partera9.Costu	irera	10.Planchar	11.Albañilería
12. Aserrador 16.Chofer	13.Herrería	14. Electricista	15.Trabajadora o	lomestica	
17. Computación	18.Ninguno	99. No sabe/no c	contestó		

24. ¿Dónde o con quién aprendió? (Para los tres se aplica el 99. No sabe/no contestó)

Donde aprendió	En qué municipio o ciudad	Quién le enseñó
1. En su trabajo donde24	1. Huehuetla que	1. Hermano quien
2. Hogar (casa)	2. Zacapoaxtla	2. Su mamá
3. Sol@	3. Zaragoza	3. Maestro
4. Escuela ó grupos de la escuela	4. Puebla	4. Un tí@ y/o primo
	5. Ciudad de México	5. Hogar
5. Conocido	6.Extranjero	6. Paisano
		7. Amigos
6. Otra:	7. Otra:	8. Otros:
		9. Su papá

25. Usted que orden de nacimiento ocupa entre sus herman@s:

¿Cuánt@s contándol@ a usted? cuan	Usted en que lugar nació nacio		
1. Hijo único 2. Segundo 3. Tercero	1. Hijo único 2. Segundo 3. Tercero		
4. Cuarto 5. Quinto 6. Sexto	4. Cuarto 5. Quinto 6. Sexto		
7. Séptimo 8. Octavo 9. Noveno	7. Séptimo 8. Octavo 9. Noveno		
10. Décimo 11. Más del décimo	10. Décimo 11. Más del décimo		
99.No sabe/no contestó	99.No sabe/no contestó		

25b. Por favor, díganos algunos datos de sus herman@s:

Herman@s del entrevistad@	Sexo de los Herman@s 1.Hombre 2. Mujer	¿Vive? 1. Sí 2. No	Edad	Escolaridad (especificar el grado máximo de estudios) 1. Primaria 2. Secundaria 3. Prepa 1.2.3.4.5.6 4. Lic. Completa 5. Otra Carrera 6. No aplica 7.Ninguna 99. No sabe/no
May@r				
Segund@				
Tercer@				
Cuart@				
Quint@				
Sext@				
Séptim@				
Octav@				
Noven@				
Décim@				
Décimo primer@				
Décimo segund@				

26.¿Usa usted el sistema mano-vuelta (al menos una vez al año)?

1. Sí, ¿Cuántas veces al año? _____ año26

2.No

99.No sabe/no contestó

B. (I/III). HOMBRES Y MUJERES, MAYORES DE LA EDAD PROMEDIO DELMATRIMONIO (EPM) Y MUCHO MAYORES, REPRODUCTIVOS (PADRES Y ABUEL@S), APAREJADOS (CASADOS O JUNTADOS)

1. ¿Cuántos años tenía usted cuando se casó o comenzó usted a vivir con su pareja?	años
1 ^a . ¿Cuántos años tenía la pareja de usted en ese tiempo?	años
2. ¿Cuántos años tenía usted cuando nació su primer hijo?	años

3.Por favor, escriba en los espacios, el sexo y la edad de cada uno de sus hijos: (Para Todos se aplica el 99. No sabe/no contestó)

<u> </u>	A		/	-		
Hijos del entrevistado	Sexo de los Hijos 1. Hombre 2. Mujer	¿Vive? 1. Sí 2. No	Edad:	¿Está saludable, en general? 1. Sí 2. No	Enfermedades (que padece y/o de la que murió) 1. Mal del aire 2. Dolores de estomago 3. Dolores de cabeza 4. De los huesos 5. Gripa (catarro) 6. No aplica	Escolaridad (especificar el grado máximo de estudios) 1. Primaria 2. Secundaria 3. Prepa 1.2.3.4.5.6 4. Lic. Completa 5. Otra Carrera 6. No aplica
May@r						
Segund@						
Tercer@						
Cuart@						
Quint@						
Sext@						
Séptim@						
Octav@						
Noven@						
Décim@						
Décimo primer@						
Décimo segund@						

4. (Sólo en el caso de que la persona entrevistada sea mujer) ¿Le dio usted el pecho a sus hijos? 1. Sí

2. No 99. No sabe no contestó (OJO: insista en la respuesta)

Hij@s que se les dio pecho	Edad	Hij@s que se les dio pecho	Edad
1 dio1	Ed1	7	Ed7
2	Ed2	8	Ed8
3	Ed3	9	Ed9
4.	Ed4	10	Ed10
5	Ed5	11	Ed11
6	Ed6	12	Ed12

5. ¿El/la mayor de sus hij@s nació en casa por

	En que lugar nació		En que lugar nació
Hij@s	 En casa asistida por partera En clínica con médico 99.No sabe/ no contestó 	Hij@s	 En casa asistida por partera En clínica con médico 99.No sabe/ no contestó
Mayor		Séptimo	
Segundo	· · · · · · · · · · · · · · · · · · ·	Octavo	
Tercero		Noveno	
Cuarto		Décimo	
Quinto		Décimo primero	
Sexto		Décimo segundo	

6. ¿Algunos de sus hij@s murieron al nacer o siendo bebés?

1. Sí ¿Cuántas mujeres murieron? _____ ¿Cuántos hombres murieron? _____ homm 2. No

7 ¿Antes de casarse, vivió usted todo el tiempo en casa de sus padres?

99. No sabe/ no contestó 1. Sí cuantían_____ 2.No

8. ¿Al casarse, 1. Sí, permanecieron usted y su pareja viviendo en casa de los padres de usted

2. Fueron usted y su pareja a vivir a casa de los padres de su pareja

3. Fueron a vivir aparte ni con sus padres ni con sus suegros

9. ¿A los cuántos años después de casarse se apartaron de sus padres/suegros?

10. Después de casarse, ¿cuáles eran sus deberes/obligaciones?

2. echar tortillas 1. Las mismas 3.Llevar comida 4. acarrear agua 5. Cuidar algún adulto 6. Labores del hogar 7. Bordar 8.Cuidar a los niños 9. Moler 10.Ayudar en el campo 11. Sacar panela 12. Hacer artesanías 13. Trabajar más duro 14. Mantener a la familia

15. Otros 99. No sabe/ no contestó

11a. ¿Considera usted haberse preparado bien para la llegada de su primer hij@?

1. Sí 100% 2. No, 0% 3. sólo en parte y ¿Qué porcentaje

11b. En comparación con el primer@, ¿para la llegada de su segund@ hij@. considera haberse 1. Sí preparado mejor? 2. No

12. Al estar próximo el nacimiento de su primer hij@:

	¿Había usted reunido dinero suficiente	¿Disponía usted de tiempo exclusivo y tenía
	para pagar los gastos necesarios?	usted la paciencia y buen trato para ser
Hijos del		buen padre/madre?
entrevistado		
	1. Sí 2.No	1. Sí 2.No
	99. No sabe/ no contestó	99. No sabe/ no contestó
May@r		
Segund@		
Tercer@		
Cuart@		
Quint@		
Sext@		
Séptim@		
Octav@		
Noven@		
Décim@		
Décimo primer@		
Décimo segund@		
13.) Qué edad tenía	usted cuando su primer niet@ nació?	años

13.¿Qué edad tenía usted cuando su primer niet@ nació? _

14. ¿Qué edad tenía su espos@ cuando su primer niet@ nació? _____ años

15. ¿Cuántos años tenía usted cuando su último niet@ nació? ____

16. ¿Cuántos años tenía su espos@ cuando su último nieto nació?

Niet@s	Sexo 1. Hombre 2. Mujer	¿Vive? 1. Sí 2. No	Edad:	¿Está saludable, en general? 1. Sí 2. No	Enfermedades 1. Mal del aire 2. Dolores de estomago 3. Dolores de cabeza 4. De los huesos 5. Gripa (catarro	Escolaridad (especificar el grado máximo de estudios) 1. Primaria 2. Secundaria 3. Prepa 1.2.3.4.5.6 4. Lic. Completa 5 Otra Carrera 6 No aplica 99. No sabe/no contestó
May@r						
Segund@						
Tercer@						
Cuart@						
Quint@					· · · · · · · · · · · · · · · · · · ·	
Sext@						
Séptim@						
Octav@						
Noven@						
Décim@					······································	
Décimo		<u> </u>			·	
primer@						
Décimo			-			
segund@						
Décimo Tercero						
Décimo Cuarto					·····	· · · · · · · · · · · · · · · · · · ·
Décimo Quinto						
 ¿Recuerda Primero Séptimo 8.0 contestó 18b ¿De cuán hijo único hermanos Seis herma 12. N 	2.Segun Octavo ttos herman 2. Un he nos 8.Siete h	do 3 9.Novenc os que tuvo ermano 3 nermanos	Tercero 10. ? Dos herma	4.Cuarto Décimo 1 anos 4.Tres h rmanos 10.1	5.Quinto 1. Más de 10 9 ermanos 5.Cuatro hern Nueve hermanos 11.Diez	
19. ¿Sabe usta 1. Primero 7.Séptimo 8.0 contestó 20b¿De cuánt 1. hijo único hermanos 7.Seis hermar 11.Diez herm 21. ¿Vive su 21a. ¿Cuántos 21b. ¿A qué e	2.Segun Octavo tos hermanos 2. Un he nos 8.Siete H anos padre? s años tiene?	do 3 9.Novenc que tuvo ermano 3 nermanos 12.Más de 1		Décimo I anos 4.Tresh	5.Quinto 11. Más de 10 99.No ermanos 5.Cuatro hern Nueve hermanos testó 99.No sabe/no c	
23. ¿Vive su 23a. ¿Cuántos 23b. ¿A qué e 24. ¿Sabe usto	s años tiene? dad murió?			2.No s?	99.No sabe/no c	ontestó

^{17.} Por favor, escriba en los espacios algunos datos de sus niet@s:

1. Padre	años;	2. Madre	años	99.No	sabe/no
contestó					

25. ¿Recuerda usted alguna costumbre especial o extraordinaria de los Totonac@s relacionada con tener o criar a los hijos, que quiera usted contarnos? (Dejar que el entrevistado narre alguna anécdota)

26. ¿Antes de formar su propia familia, vivió usted en la casa de otra familia a la cual le prestabaalguna clase de ayuda (en tareas del hogar o del campo, por ejemplo)?1. Sí2.No99.No sabe/no contestó

27. ¿Que clase de retribución recibía usted por esa ayuda?

1. Comida	2.ropa	3.calzado	4.alojamiento	5.medicinas cuando se enfermaba
6.cuidado	7.enseñanzas	y conocimientos	8.apoyo para ir a l	a escuela 9.un pedazo de terreno
10.una casa	o jacal	11.dinero	12.animales	13.alguna clase de herencia
14.consejos	y apoyo moral	115.buena compar	iía 16.otras	99. No sabe/no contestó

28. ¿A quiénes ayudaba usted?

1. a sus padres	2.parientes cercanos	3.parientes lejanos,	4.patro	nes	
5.vecinos o amistades	6.a otras personas	7.Hermano@	99.	No	sabe/no
contestó					

29. ¿Cuántas personas eran las que usted ayudaba o a quienes prestaba servicio?

30. ¿Qué edad tenían las personas a quienes ayudaba?

1. Eran mayores de 602.de entre 40 y 59 años3. de entre 20 y 39 años4. de entre 13 y 19años

5. eran niñ@s 6. eran bebés 99. No sabe/no contestó

31. Podría usted especificar cuáles eran las cuatro principales actividades de ayuda que usted hacía para ellos:
1. Cortar café 2.Labores del hogar 3.Fiscal 4.Labores del campo 5.Sacar panela

6. Llevar comida mimas	7.Vender alime	ntos 8.Chapear	9.Hacer to	ortillas	10.Las
11.Traer Leña y/o 99.No sabe/no con	0	r animales	13.Moler	14. Cuidar a m	is hermanos
32. ¿Recuerda cuár 1. hombres		onas eran intas mujeres?	_recue32a	99.No sabe/no c	ontestó
33. ¿Cuántos años	vivió usted ahí ay	yudándoles?			
34. ¿Qué edad ten	ía usted cuando e	mpezó?; ¿Q	ué edad tenía us	ted cuando dejó	de ayudarles?
casa y a atender a	la familia de uste) Alguien en alguna d? Por ejemplo a rec cargar a los niños, e 99.No sabe	oger leña para la		
5. tí@s en primer § 10. Otro 11. Hij@s	2. hermanos grado 6. abuel(s 12. Patro	3. primos en primer 2 7. parientes nes 99.No sabe adamente le ayudab	s lejanos 8 e/no contestó	3. amig@s	9. vecin@s
36. (Sólo para los	hombres casados del campo o neg	s) Alguien en alguna ocio? Por ejemplo,	a temporada le h	a ayudado en e	l trabajo de la
5. tí@s en primer § 10. Otro	2. hermanos grado 6. abuel(3. primos en primer 2 7. parientes 99.No sabe/no conte vadamente le ayuda	s lejanos 8 estó	3. amig@s	9. vecin@s
C. (I/III). HO DEL MATRIN	MONIO (EPM	UJERES, MAY I) Y MUCHO M ADOS/CASADO	IAYORES, N	O REPROD	UCTIVOS
4. Las mujeres se v	nicas 2. Solo n van a la ciudad	ne case por la iglesia 5. Quiere seguir estu 8. No ha encontrado	idiando (5. No se auiere c	omprometer
1. Ší).No sabe/no con no es seguro 2		antener a una
1. Sí 3ª. ¿Porqu mujer		tenido usted relacion 2.No 99 1. El sexo n	No sabe/no con	testó 2. No puede m	antener a una

1. Nunca 2.Un sabe/no contestó	a vez al año) las razones p	3. Una vez	aciones sexuales? al mes 4. Una v ha tenido relacion	ez a la semana	a 5. Diario 9	99.No
5. ¿Piensa tener 1. Sí 5ª¿Por qué?			uturo? 99.No sabe/no	contestó		
 6. ¿Cuál es su opinión ac 1. Enseñar a los demás a escuelo 4. Enseñarlos a trabajar contestó 	ser padre	2. Poc	ler ayudarnos en e			a la be/no
 7. ¿Cuáles son las tareas 1. Cortar café 6. Llevar comida 9 12. Cuidar animales 1 	en las que u .Labores del .Hacer tortil 3.Moler	sted ayuda a s hogar las	us padres? 4.Labores del (10.Las mimas 99.No sabe/no	campo 5. 11.Tra contestó	.Sacar panela er Leña y/o agi	ua
 ¿Qué tan importante pi Imprescindible Nada importante 	2. Muy im	portante			importante	
9. ¿Cuántos días a la se semana. 2) ¿Y cuántas ho			ayudar a sus padı	res/familia?	día	s a la
 ¿A cuántas personas Ninguna a cuatro personas personas a ocho personas 	2.una sola 6. cienco j	persona personas	3. a dos person 7. a seis persor	nas	. a tres persona 8. a	
 11. ¿En su opinión, la aya calidad de vida de el 1. En nada 2. Casi 6. Totalmente 99. No sabe/no contestó 	los?		familiares en qué 4. Regular		_	stante
12. ¿Cuánto tiempo más 1. años 2. meso		seguir ayuda . semanas	ndo a sus familiar 4. días	es? 5. mientras	s viva yo	
6. mientras vivan ellos	9	9.No sabe/no	contestó			
13. ¿En su opinión, una p brinda a sus pariente		ayuda merece	una retribución p	or esa ayuda q	lue	
1. Sí	2.No	99.No	sabe/no contestó			
14, ¿Qué clase de retribu1. comida 2. aloja6. ropa y calzado 7. respeti	imiento 3	. una parcela	de tierra 4. una	narcar más de a casa o jacal, o sabe/no conte	5. dine	ro
4. ayudarse uno al otro	crecer a los	hijos 3. Esp	ecificar			be/no
contestó 16. ¿Y las desventajas? (OJO:Insistir	en la respuest	a)			

1. Ninguna trabajar	2. No se esta maduro	3.Frac	aso familiar	4. No se	e esta prepar	ado para
	nómicos 6. Dejar de e	estudiar	7. Especifica	ar	99.No	sabe/no
	ejor edad para casarse es 2.Para las		mejor17b			
18. ¿A partir de q 98. Nunc	ué edad una mujer ya ca 99.	se considera No sabe/no o		iedada?		
19. ¿En su opinió 98. Nunc	n, cuál es la edad en q ca 55.	ue un homb No aplica		era solterón o c No sabe/no cor		
1. Lo mejor sería	n, como debe ser la vi que viviera con sus p que viviera con amig	adres		sería que vivie	ra sola	
21. ¿Una mujer se 1. Sí contestó	olterona, debe pedir pe 2.No			ıbajar la respuesta	99.No	sabe/no
22.¿Debe ella ten 1. Sí contestó	er el permiso de sus pa 2.No	•	•	n amistades? 1 la respuesta	99.No	sabe/no
23 ¿Debe tener el 1. Sí contestó	la permiso para salir ; 2.No			la respuesta	99.No	sabe/no
24. ¿En su opinió 1. Sí contestó	n, una mujer solterona 2.No		ue tenga hijos? pivalencia en la		99.No	sabe/no
25. ¿En su opinió 1. Sí contestó	n una mujer solterona. 2.No		ue tenga relacio bivalencia en		99.No	sabe/no
26.¿En su opiniór 1. Sí contestó	n, es bueno que un hor 2.No		-	nes sexuales? la respuesta	99.No	sabe/no
27. ¿En su opinió 1. Sí contestó	n es bueno que un ho 2.No			la respuesta	99.No	sabe/no
28. ¿En su opinió 1. Sí	n, usted considera que 2. Debe vivir solo 3. ₁			-	idres? be/no contes	ó
29. ¿Cómo imagin 1. Seguirá solter(hijos? 5. Casado con hij	-	ad@ 3. sin		hijos cuant29a	a	¿cuántos
-	algún impedimento fís	ico para tene	er hijos? sabe/no contes	tó		
	e que se case usted y te para ayudarles en las 99.]		ogar o del cam		ie alguien	

 2. No

 31^a ¿Por qué?______

 1. Hace falta quien le ayude
 2. Que tenga una mejor atención

 3. Para ayudar en el campo mejor
 4. Los padres pueden hacerlo
 5. Se debe ser una familia

 6.Otra ______
 5. Se debe ser una familia

32. ¿Cree usted que uno viene al mundo para tener <u>hij@s</u> y convertirse en padre/madre como una misión en la vida?

1. Sí 2.No 99.No sabe/no contestó

33. En su opinión ¿Cuál es la conducta más apropiada durante la soltería? (Elige una opción en cada renglón)

33^a. Es conveniente que los hombres: -No tengan relaciones sexuales: 1. Estoy de acuerdo 2. Estoy en desacuerdo 99.No sabe/no contestó 34. Se conserven vírgenes hasta el matrimonio: 1 Estoy de acuerdo 2. Estoy en desacuerdo 99.No sabe/no contestó 35. Tengan novias antes de casarse: 1. Estoy de acuerdo 2. Estoy en desacuerdo 99.No sabe/no contestó 36. Vayan a fiestas, bailes, paseos y se diviertan con amigas: 1. Estoy de acuerdo 2. Estoy en desacuerdo 99.No sabe/no contestó 37. Vayan a fiestas, bailes, paseos y se diviertan, pero sólo con amigos: 1. Estoy de acuerdo 2. Estoy en desacuerdo 99.No sabe/no contestó 38. Es conveniente que las mujeres: 1. Estoy de acuerdo 38^a-No tengan relaciones sexuales: 2. Estoy en desacuerdo 99.No sabe/no contestó 39. Se conserven vírgenes hasta el matrimonio: 1. Estoy de acuerdo 2. Estoy en desacuerdo 99.No sabe/no contestó 40. Tengan novias antes de casarse: 1. Estoy de acuerdo 2. Estoy en desacuerdo 99.No sabe/no contestó 41. Vayan a fiestas, bailes, paseos y se diviertan con amigas: 1. Estoy de acuerdo 2. Estoy en desacuerdo 99.No sabe/no contestó 42. Vayan a fiestas, bailes, paseos y se diviertan, pero sólo con amigos: 1. Estoy de acuerdo 2. Estoy en desacuerdo 99.No sabe/no contestó 43.En su opinión ¿Cree usted que es verdad que las mujeres son más exigentes y se fijan meior que los hombres a la hora de escoger a sus novios o esposos? 1. Sí 99.No sabe/no contestó 2.No 44. ¿En su opinión, son las mujeres las menos dispuestas a tener relaciones amorosas/sexuales, o son los hombres? 1. Sí 2.No 99.No sabe/no contestó 45. ¿Por qué opina usted de esa forma? 1. Porque pueden quedar embarazadas 2."Se creen mucho" 3. Las mujeres no tiene información 4. Es mal visto por la comunidad 5. Tiene miedo de las consecuencias 6. sufren mucho 7. Las mujeres son más concientes 8. El costumbre lo prohíbe 9.Por la promiscuidad de los hombres 10. No les interesa el sexo 99.No sabe/no contestó 46. En su opinión, los hombres son más insistentes que las mujeres y buscan más parejas para tener relaciones sexuales más seguido? 1. Sí 2.No ¿Por qué? 1. Les gusta tener muchas mujeres 2. Les gusta la diversión 3. No sufren las consecuencias 4. Así son los hombres 5.El costumbre se los permite 6. Todos son iguales 7. Así les enseñaron desde niños 99.No sabe/no contestó

47.En su comunidad ¿Qué es lo que ocurre?

1. El hombre escoge a su novia o esposa 2. La mujer escoge a su novio o esposo 3. Los dos se escogen mutuamente 4. Ninguna de las anteriores 5. otra persona escoge a las parejas ¿Cómo? ocu47b 1. No se quiere tener parejabbbb2.Los padres lo hacen 3. Se va a la casa de la muchacha 4. Por dialogo con las familias 5. Se va conociendo a la muchacha 99.No sabe/no contestó 48.. En su opinión ¿En su comunidad, una muchacha puede libremente rechazar a un pretendiente? 2.No ¿Como? opib488b 1. Rechazarlos 1. Sí 2. Decirle que no lo quieren 3.No aceptar la propuesta 99.No sabe/no contestó 49. ¿Cuáles son aquéllas cualidades deseables en una mujer que quiere convertirse en novia de un muchacho? 1. Que sea guapa 2. Que tenga dinero 3.Que sea Fiel 4. De sentimientos sinceros 7. Respetuos@ 5. Amable 6. Trabajadora 8.Solter@ 9. Virgen 10.Que no tome 11.Educad@ 12.Trabajador@ 13. Que .me quiera 14.Honesta 15. 16.Placer 17.Piel Blanca 18.Bondados@ Sociable 19. Otra 20. Responsable 21. Sincera 22. Ninguna 99.No sabe/no contestó 50. ¿Cuáles son aquéllas cualidades deseables en un hombre que quiere convertirse en novio de una muchacha? 2.Que tenga dinero 3.Fiel 1. Guap@ 4.Ninguna 5.Sentimientos 6. Amable 7. Respetuos@ 8.Solter@ 9. Virgen 10.Que no tome 11.Educad@ 12.Trabajador@ 13. Que me quiera 14. Honesta 15. Sociable 16.Placer 17.Piel Blanca 18.Bondados@ 20. Otra _____ 19. Familia hogareña 21. Responsable 22. Sincera 51. En orden de importancia relacione los siguientes valores: 1. La vida, 2. El dinero, 3. Los hij@s de usted (cuando los tenga), 4. Nietos (cuando los tenga), 5. el amor, 6.el sexo, 7. el poder, 8. la salud, 9 .la virtud, (para ir al cielo) 10. sus parientes 11. el placer (darse buena vida), 12.su mamá, 13. su papá, 14. sus herman@s, 15.El trabajo 16. Dios 17.Espos@ 18. La Nación 19. El costumbre 20. Su tierra 99.No sabe/no contestó 21 Otras Orden de importancia Valor Orden de importancia Valor

Primero	Décimo primero	
Segundo	Décimo Segundo	
Tercero	Décimo Tercero	
Cuarto	Décimo Cuarto	
Quinto	Décimo Quinto	
Sexto	Décimo Sexto	
Séptimo	Décimo Séptimo	
Octavo	Décimo Octavo	
Noveno	Décimo Noveno	
Décimo	Vigésimo	

F. INFORMANTES CON CARGO DE AUTORIDAD ETNICA, CIVIL O RELIGIOSA

1. Por favor marque en los paréntesis la respuesta que corresponda a la vida real en el Totonacapan:

- 1. los recién casados usualmente van a vivir a la casa del novio
- 1. los recién casados usualmente van a vivir a la casa de la novia
- 2. entre los Totonacos existe la costumbre de la primogenitura
- 3. entre los Totonacos existe la costumbre de la último genitura
- 4. el padre es el que decide a quién le hereda sus bienes
- 5. la madre también toma parte en la decisión de a quién se heredan los bienes
- 6. el padre toma la opinión de su esposa, pero es él quien decide a quién hereda
- 7. es común heredar equitativamente (herencia fragmentaria) a todos los hij@s
- 8. es común heredar sólo a un hijo (herencia unitaria)

2.¿ En su opinión, cuántas casas en promedio tiene un hombre Totonaco? 1. Ninguna 2. Una 3.Dos 4. Tres 5. Cuatro 99.No sabe/no contestó 3. ¿ En su opinión, cuántas esposas tienen los hombres Totonacos? 1. Ninguna 2. Una 3.Dos 4. Tres 99. No sabe/no contestó 4. En su opinión cuál es la edad adecuada para que se case un hombre? 6. ¿En la familia Totonaca, quién tiene mayor autoridad? 1. E hombre 2. La mujer 3. Ambos por igual 4.Otra persona ¿Quién? 99. No sabe/no contestó 7. ¿En la familia Totonaca, quién toma las decisiones acerca del destino de los hij@s? 1. E hombre 2. L mujer 3. Abos por igual 4. Otra persona ¿Quiénes? 99.No sabe/no contestó 8. En orden de importancia relacione los siguientes valores: 3. Los hij@s de usted (cuando los tenga), 1. La vida, 2. El dinero, 4. Nietos (cuando los tenga), 5. el amor, 6.el sexo, 7. el poder, 8. la salud, 9 .la virtud, (para ir al cielo) 10. sus parientes 11. el placer (darse buena vida), 12.su mamá, 14. 13. su papá, sus herman@s. 15.El trabajo 16. Dios 17.Espos@ 18. La Nación 19. El costumbre 20. Su tierra 21 Otras

99.No sabe/no contestó

Orden de importancia	Valor	Orden de importancia	Valor
Primero		Décimo primero	
Segundo		Décimo Segundo	
Tercero		Décimo Tercero	
Cuarto		Décimo Cuarto	
Quinto		Décimo Quinto	
Sexto		Décimo Sexto	
Séptimo		Décimo Séptimo	
Octavo		Décimo Octavo	
Noveno		Décimo Noveno	
Décimo		Vigésimo	

H. HOMBRES Y MUJERES SOLTER@S SIN HIJ@S

\$1,200	y \$400 3. Entre \$401	o, más o menos (en dine y \$800 4. Entre	
5. Entre \$1,201 y \$2,000 6. F 8. Entre \$4,001 y \$5,000 9. N	atre \$2,001 y \$3,000 7. En ás de \$5,000 al mes	tre \$3,001 y \$4,000	
 2. ¿Y en especie, para el autoconsumo (a kilos de maíz al año. b kilos de frijol al año c kilos de café al año 	naíz, frijol, café, hortalizas,	etc.)?	
3. ¿Le da usted a alguien una parte o ap obtiene? 1. Sí 2. M			
 4. (En caso de haber contesta menos, y a quién (es)? 	lo Sí) ¿Qué tanto les da u	sted al mes, en promec	lio, más o
Dinero: 1. Nada, \$0 ingres	s 2. \$ Entre \$1 y	v \$400 3. Ent	re \$401 y
\$800			·
4. Entre \$801 y \$1, \$3,000		1 y \$2,000 6. Entre	\$2,001 y
7. Entre \$3,001 y \$ 9. Más de \$5,000 a 5. Ese dinero se lo doy como a	mes 55. No aplica	01 y \$5,000	
	-	s hermanas mayores	
4. Mis hermanos mayore		•	Mis
hermanos			
	is sobrin@s 8. Mis t		
prim@s 10. Ot aplica	os (especificar e	l parentesco)	55. No
6. ¿Y en especie, para ayudarle akilos d bkilos d ckilos d	maíz al año. frijol al año	da como donativo?	
a kilos d b kilos d c kilos d	maíz al año. frijol al año café al año		
a kilos d b kilos d c kilos d 7. Ese producto (maíz, frijol, c	maíz al año. frijol al año café al año fé) se lo doy como apoyo a:		
a kilos d b kilos d c kilos d 7. Ese producto (maíz, frijol, c 1. Mi mamá 2. M	maíz al año. frijol al año café al año fé) se lo doy como apoyo a: i papá 3. Mi	s hermanas mayores	hermanos
a kilos d b kilos d c kilos d 7. Ese producto (maíz, frijol, c 1. Mi mamá 2. M 4. Mis hermanos mayore menores 7. Mis sobrin prim@s	maíz al año. frijol al año café al año fé) se lo doy como apoyo a: i papá 3. Mi 5. Mis hermanas r @s 8. M	s hermanas mayores nenores 6. Mis is ti@s	9. Mis
a kilos d b kilos d c kilos d 7. Ese producto (maíz, frijol, c 1. Mi mamá 2. M 4. Mis hermanos mayore menores 7. Mis sobrin prim@s	maíz al año. frijol al año café al año fé) se lo doy como apoyo a: i papá 3. Mi 5. Mis hermanas n	s hermanas mayores nenores 6. Mis is ti@s	9. Mis
a kilos d b kilos d c kilos d 7. Ese producto (maíz, frijol, c 1. Mi mamá 2. M 4. Mis hermanos mayore menores 7. Mis sobrin prim@s 10. Otros 8. Cuando usted está en condiciones d vez, según	maíz al año. frijol al año café al año fé) se lo doy como apoyo a: i papá 3. Mi 5. Mis hermanas n @s 8. M (especificar el parentesco) hacerlo ¿a quiénes prefiere	s hermanas mayores nenores 6. Mis is ti@s 55. No apl	9. Mis ica
a kilos d b kilos d c kilos d 7. Ese producto (maíz, frijol, c 1. Mi mamá 2. M 4. Mis hermanos mayore menores 7. Mis sobrin prim@s 10. Otros 8. Cuando usted está en condiciones d	maíz al año. frijol al año café al año fé) se lo doy como apoyo a: i papá 3. Mi 5. Mis hermanas n @s 8. M (especificar el parentesco) hacerlo ¿a quiénes prefier 2. Parientes cercanos parentesco 5. Vecinos co	s hermanas mayores nenores 6. Mis is ti@s 55. No apl e usted ayudar? (Marqu on parentesco	9. Mis ica
 a kilos d b kilos d c kilos d c kilos d c kilos d 7. Ese producto (maíz, frijol, c 1. Mi mamá 2. N 4. Mis hermanos mayore menores 7. Mis sobrin prim@s 10. Otros 8. Cuando usted está en condiciones d vez, según su preferencia) 1. Herman@s 3. Parientes lejanos 4. Amigos si 6. Vecinos sin parentesco 	maíz al año. frijol al año café al año fé) se lo doy como apoyo a: i papá 3. Mi 5. Mis hermanas n @s 8. M (especificar el parentesco) hacerlo ¿a quiénes prefier 2. Parientes cercanos parentesco 5. Vecinos ca 7. Extraños 8. A p	s hermanas mayores nenores 6. Mis is ti@s 55. No apl e usted ayudar? (Marqu on parentesco nadie 99. No	9. Mis ica e una sola sabe/No
 a kilos d b kilos d c kilos d c kilos d c kilos d 7. Ese producto (maíz, frijol, c 1. Mi mamá 2. N 4. Mis hermanos mayore menores 7. Mis sobrin prim@s 10. Otros 8. Cuando usted está en condiciones d vez, según su preferencia) 1. Herman@s 3. Parientes lejanos 4. Amigos si 6. Vecinos sin parentesco contestó 	maíz al año. frijol al año café al año fé) se lo doy como apoyo a: i papá 3. Mi 5. Mis hermanas n @s 8. M (especificar el parentesco) hacerlo ¿a quiénes prefiere 2. Parientes cercanos parentesco 5. Vecinos co 7. Extraños 8. An acerlo ¿Prefiere ayudar a? ujeres 4. A nadie	s hermanas mayores nenores 6. Mis is ti@s 55. No apl e usted ayudar? (Marqu on parentesco nadie 99. No	9. Mis ica e una sola sabe/No Mujeres
 a kilos d b kilos d c kilos d c kilos d c kilos d 7. Ese producto (maíz, frijol, c 1. Mi mamá 2. N 4. Mis hermanos mayore menores 7. Mis sobrin prim@s 10. Otros 8. Cuando usted está en condiciones d vez, según su preferencia) 1. Herman@s 3. Parientes lejanos 4. Amigos si 6. Vecinos sin parentesco contestó 9. Cuando usted está en condiciones de 3. Me da igual que sean hombres o r 	maíz al año. frijol al año café al año fé) se lo doy como apoyo a: i papá 3. Mi 5. Mis hermanas n @s 8. M (especificar el parentesco) hacerlo ¿a quiénes prefiere 2. Parientes cercanos parentesco 5. Vecinos co 7. Extraños 8. A n acerlo ¿Prefiere ayudar a? ujeres 4. A nadie	s hermanas mayores nenores 6. Mis is ti@s 55. No apl e usted ayudar? (Marqu on parentesco nadie 99. No 1. Hombres 2. 99. No sabe/No cont 1. Niñ@s y menore	 9. Mis ica e una sola sabe/No Mujeres testó s de edad,

¿Por qué?_____

 11. Cuando usted está en condicione papá 	s de hacerlo ¿Prefiere ayud	dar a? 1. Pariente	es por parte de mi
2. Parientes por parte de mi man sabe/No	há 3. Me da igual	4. A nadie	99. No
contestó ¿Po	r qué?		
 12. ¿Cree usted que algún día le van 99. No sabe/No co (Si contestó Sí) ¿De qué forma? (Si contestó No) ¿Por qué lo hace 	ntestó	1. Sí	2. No
 13. ¿Tiene usted una parcela, terreno 1. Sí ¿Qué es o qué son? 2. No, no tengo nada 			
2. No, no tengo nada	99. No sabe/No contestó		
14. ¿Cómo adquirió usted esa propie	dad? 1. La compró	2. La heredó 3.	Se la regalaron
4. Con ella le pagaron una deud	a 5. De otra forma	¿Cuál?	Especificar
15. ¿Tenían tierras su padre y su mao 1. Sí 2. No	lre o alguna otra propiedao 99. No sabe/No co		a?
 13. ¿Ya repartieron la herencia sus p 1. Sí, ya la repartieron 3. Todavía no se sa 	2. No la han repartido, per	o ya nos dijeron cóm	no va a ser repartida
 14. (Si contestó 1 o 2) ¿Entre cuánto 1. Sólo entre los hijos hombres hombres y 			
mujeres por igual de mis	. Entre l@s niet@s	5. Incluyeron a otr@)s que no son hij@s
papás ¿	Quiénes?)		
15 (Si contestó 1 o 2) Sus padres h2. Sólo a l@s solter@ que tiene solter@s o l@s que no tienen	n hij@s 3. Parejo, a l@s c		
más a los que tenían poc@s 8. Le dieron más a l@s may 10. Le dieron más a l@s me	3. Le dieron más a b. Le dieron más a l@s que hij@s 7. Le die vores de edad 9. Le die	a los hombres e tenían más hij@s ron más a l@s que n ron más a l@s meno eron más a los que te	ores de edad
17. ¿A usted, qué tanto le tocó?1. Lo justo2. Menos55. No aplica	de lo justo	3. Más que a l@s ot	r@s
18. ¿Cuál cree usted que fue el criter	io que aplicaron sus padre	s al repartir la heren	cia?
19. ¿Y usted cuando llegue el mom heredarles	ento, imagínese cómo pie	ensa repartir sus pro	piedades, a quiénes

Mi casa para:	sa para:	casa	Mi	2.
---------------------------------	----------	------	----	----

- (especificar edad, sexo y parentesco del/ los heredero (s) del terreno)
- - (especificar edad, sexo y parentesco)
- 20. ¿Cuál cree usted que va a ser el criterio que aplicará al repartir la herencia que usted deje?

CUESTIONARIO SOCIOETNOGRÁFICO

Cuestionario número
Fecha de la entrevista:
Entrevistado: Edad Sexo: Hombre () Mujer ()
Cargo o señas del entrevistado:
1. Escenario nacional
1.1.1 ¿Se siente usted muy mexican@? Sí () No () No sabe ()
1.1.2 ¿Se siente usted poblan@? Sí (No () No ()
1.1.3 ¿Se siente usted Huehuetec@? Sí () No () No sabe ()
1.1.4 ¿Se siente usted muy Totonac@? Sí () No () No sabe ()
1.1.5 ¿Tiene usted otra denominación además de mexican@, poblan@, Totonac@,
etc.?¿En caso afirmativo, cuál es?
1.2 ¿De las anteriores cuestiones, cuál es la mas importante?
a) Ser Mexican@() b) Ser Poblan@() c) Ser Huehuetec@()
d) Ser Totonac@() e) Ninguna es más importante que otra ()
f) Todas son iguales de importantes () g) Otra respuesta () h) No sabe ()
1.3 ¿Cómo es el ambiente natural en que usted vive? ¿Le gusta? Explique por favor:
1.4 ¿Cómo es el ambiente social en que usted vive? ¿Le gusta? Explique por
favor:
1.5 ¿Cómo es un(a) Totonac@? Que lo haga especial, distint@ de los mestizos y otra
gente, por dentro y por fuera, explique por favor:
2. Base económica y política

2.1 ¿Cómo se gana usted la vida? Explique por favor cómo hace usted para mantenerse y mantener a su familia

- 2.2. Lo que gana usted con su trabajo ¿Le alcanza para vivir bien a usted y su familia?
- a) Sí, y hasta nos sobra bastante ()
- b) Sí, vivimos bien y nos sobra un poquito ()
- c) Ni nos sobra ni nos falta, tenemos lo justo ()
- d) No, no nos alcanza, me las veo duras ()
- e) Vivimos mal, nos falta hasta lo más indispensable ()

2.3 Cuando le llega a sobrar dinero, maíz u otros productos ¿Qué le hace usted a lo que le sobra?

¿Son iguales todos los seres humanos o hay diferentes clases?

- 2.5 ¿Son iguales tod@s l@s Totonaco@s o hay diferentes clases?.....
- 2.6 ¿Tienen l@s Totonac@s un gobierno propio? Explique:
- 2.7 ¿Quiénes tienen autoridad, mando o poder entre los <u>Totonac@s</u> para dar órdenes y resolver disputas?

3. Ley, usos y costumbres

- 3.1 ¿Usted actúa de acuerdo a lo que manda El costumbre?
 - a) Sí, siempre ()b) Sí, casi siempre () c) A veces sí y a veces no ()
 - d) No, sólo raras veces () e) No, nunca sigo la costumbre ()
- 3.3 ¿Cómo reacciona la comunidad con aquellos que se portan mal? Explique por favor: Denuncia civil: Justicia comunitaria indirecta: Justicia comunitaria directa:

4. Lazos de parentezco y residencia

4.1 ¿A quiénes considera usted miembros de una familia? Por favor elija, marcando con una X, qué otras personas viven con frecuencia con la familia, además del papá, la mamá y los hijos:

a) <u>Abuel@s</u> ()	b) <u>Tí@s</u> ()	c) <u>Prim@s</u> ()		
d) <u>Sobrin@s</u> ()	e) Nueras ()	f) Yernos ()		g) <u>Niet@s</u> ()
h) <u>Suegr@s</u> ()	i) <u>Cuñad@s</u> ()			
j) Medios hermanos/as () Sólo papá, m	amá e hijos ()			

4.2 Cuando una pareja se casa o se pide a la novia ¿Hay pago o dote? Explicar.....

4.3. De las propiedades del papá o la mamá ¿Quiénes tienen derecho a heredar?

- a) ¿Los dueños escogen libremente a las herederas?
- Sí () No, porque deben seguir algunas reglas ()
- b) Heredan sólo hijos e hijas () Pueden heredar otr@s que no sean <u>hij@s</u> ()
- c) Heredan sólo el hijo o la hija mayor () Heredan mayores, <u>median@s</u> y menores por igual ()
- d) Heredan sólo los hombres () Heredan parejo, hombres y mujeres ()
- 4.4. Al casarse, a dónde van a vivir los recién casados?a) A casa de los padres del novio ()
 b) A casa de los padres de la novia () c) Aparte de los padres y suegros ()

5. Ritos y creencias

5.1 Aparte de las ceremonias religiosas (católicas) ¿Cuáles otras ceremonias o ritos se celebran entre las comunidades? Explicar.....

Ninguna: rito de la siembra del maíz: Bendición de casas y obras:

- 5.2 Nombre, por favor, los dioses, santos y vírgenes más adorados y cuáles son sus dominios (Por ejemplo, qué dios, santo o santa gobierna o es dueñ@ del maíz o la milpa)
- 5.3 ¿Qué tan importante es el maíz para el pueblo Totonaco? Por favor de usted argumentos:

6. Artes y diversiones

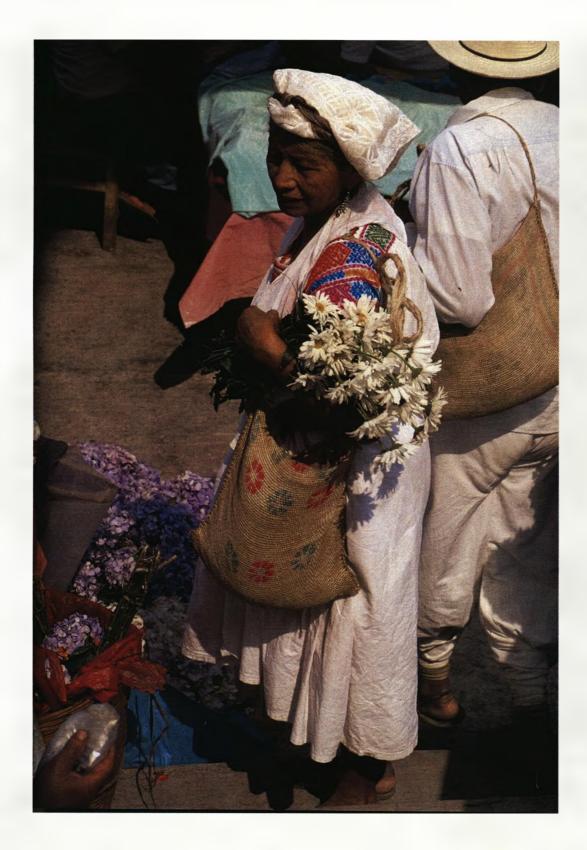
6.1 ¿Cuáles son las artes cultivadas por <u>l@s Totonac@s</u>? Explique por favor, mencionando de qué están hechas, dónde se aprenden, quién las hace, la técnica, etc;

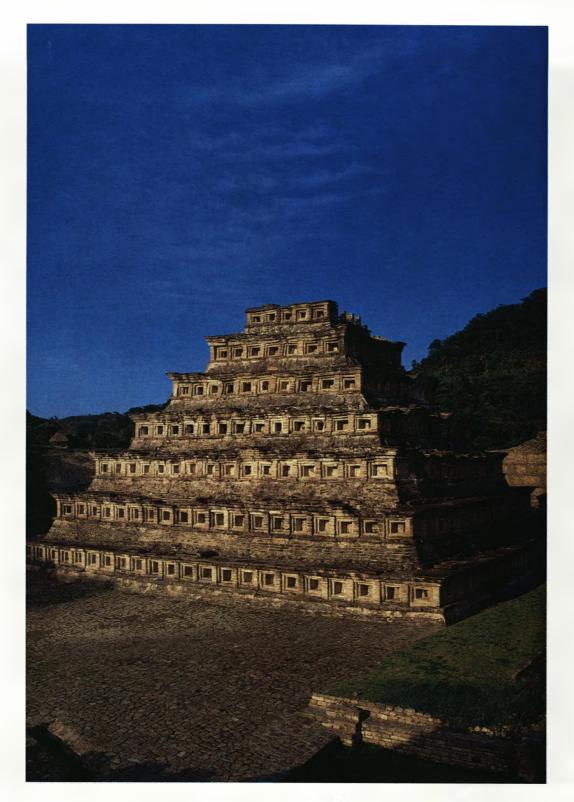
	Bordado:	Alfarería	••••	Música	Carpintería:
	••••••				
	Talla de madera .		Modelar cera .	•••••	Cestería
6.2 ¿Cuáles son las formas de divertirse de <u>l@s Totonac@s</u> ? Mencione dos o tres:					
	Platicar: pr	acticar un dep	orte:	fiestas sociales	:jugar:
	Pasear por las veredas: convivencia familiar: retozar en el río:				
	ir a la cantina:	•••••	ir a misa:		bordar:

APPENDIX B: THE COUNTRY, THE STATE, AND THE MUNICIPALITY

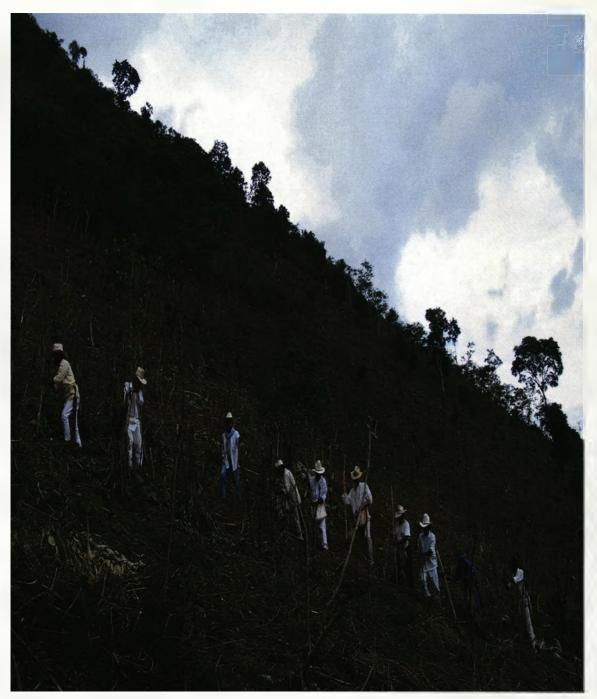


APPENDIX C PHOTOS C -1: TOTONACA WOMAN

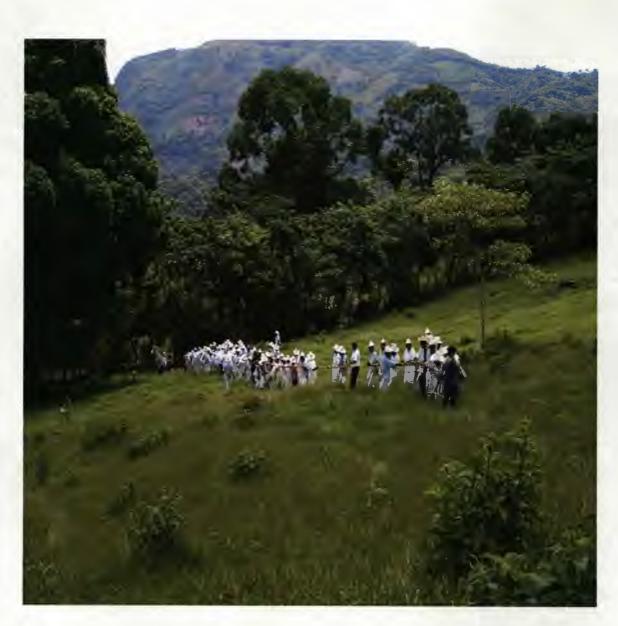




APPENDIX C-2: EL TAJIN PYRAMID



APPENDIX C-3:TOTONACA MEN AT *MANO-VUELTA* WORK (PHOTOGRAPHS C-3 AND C-4 COURTESY OF NICOLAS ELLISON)



APPENDIX C-4: TOTONACA MEN PULLING THE POLE FOR EL VOLADOR RITE AT Servicio Work.

L. Folio...

II. A. GENERAL DETAILS (FOR EVERY INFORMANTS)

III. Date...

- IV. Place and municipality where the interviewee is from.....
- V. Name or identity number.....
- VI. Mother LANGUAGE: a) Totonaco (), b) Spanish (), c) Náhuatl (), d) other ()...
- VII. SEX: a) male (), b) female ()
- 6. AGE: () years,
- 7. RELIGION: a) Catholic (), b) Evangelist (), c) Ethnical d) Other
 e) None ()
- 8. MARITAL STATUS: a) Single (...), b) Married (), c) Living with a partner without marriage (), d) widow/widower (), e) separated ()
- 9. Do you have a girl/boy friend? Yes () How many? (). No () why? ...
- 9a. (In the case of a second, [third] marriage because of widowhood or divorce. Note down here). Had you a different partner before this one? a) Yes (), b) No ()
- 9b. How many children from your previous spouse do you have? ()
- 10. (REPRODUCTIVENESS) Do you have children? a) Yes (), b) No ()
- 10a. (If yes) How many sons do you have? (), and daughters? () Total ()
- 11. Do you have grandchildren? a) Yes (), b) No ()
- 11a. (If yes) How many grandsons do you have? () and granddaughters? ()
 Total ()
- 12. (OCCUPATION) What do you do? a) work (), b) study (), c) housekeep
 d) I am unemployed () e) I just help to my family
- 13. (HELP) I use to help my family with... a) housework (),

b) farm work (), c) taking care of my siblings (), d) taking care of my parents (), e) taking care of other relatives ()

14. How old were you when you started to help to your family? ()

(4a), Are you still helping them? a) Yes () b) No, I gave up helping them ()

(14b. At what extent, do you help them? A) Totally () b) A half () c) A little ()

(14c, How many years have you helped to your family? ()

14d. (In such a case) What is the reason by which you don't help them anymore?

a) Because I'm married () b) I don't have resources () c) I live far from them () d) My partner doesn't like it () e) They don't need to be helped () f) Just carelessness ()

(15), To whom did you use mainly to help when you started to do it?

a) Mother () b) Father () c) Other person () specify

- 16. If you don't help to your family anymore, but you did it in the past; how many years did you do it? ...
- 17. Has anyone of your close family gone out of the municipality to work? (If any) Who? ...
- 17a. Where has he/she gone to work?A) To other community () b) Puebla city ()
 c) Other state () d) USA ()

18. Does he/she use to send any money to the family? a) Yes (), b) No ()

(If yes) How much money (In M. P.)? \$....

- 18b. With what frequency? ...
- 18c. (In the case he/she used to do it, but not anymore, note down here)

a) Yes (), b) No ()

- 19 (RESIDENCE) In my home I live... a) alone (), b) with my partner/spouse
 (), c) with our children (), d) with my parents (), e) with my parents-in-law () f) siblings (), g) with some friends (), f) with some relatives ()
- 20. The place where you live is... a) my own house (), b) my parents' house (), c) my relatives' house (), d) my friends' house (), e) in the seminary or nunnery ()
 f) Is it a hired house ()
- 21. Have you plans of having children in the future? a) Yes (), b) No (),c) Why?...
- 21a. (if yes) How many children would you like to have in total? () How many sons? () How many daughters? ()
- 22. (STUDIES/KNOWLEDGE) How many years have you studied? 1) None 2)
 Primary School ... years 3) Secondary School ... years 4)
 Preparatory school ... years 5) First degree 6) Other studies ... 7) Which ones?... years (specify) ...
- 23. Do you have knowledge, skills, trades or craft, related to house work, farm work or other jobs? Yes () No ()

23a. (If yes) Which are they...

4 24. In which location did you learn it?... Municipality/town...

 $\sqrt{24a}$. Who taught you about them or who was your trainer?...

25. (BIRTH-ORDER AND SIBSHIP SIZE) Are you only child or have you siblings? In such a case, how many siblings are, including you?...

25a. What is your birth-order?

25b. Please, tell us the next details of each of your siblings including those who have died after being 5 years of age: gender, survivorship, age, and schooling

26. Do you use to resource to the mano-vuelta system, at least once a year?

a) Yes, b) No ()

27. (If yes) How many times per year? ()

B. MALE/FEMALE, ELDER (PARENTS/GRANDPARENTS), COUPLED (MARRIED OR LIVING TOGETHER) REPRODUCTIVE PEOPLE

-)1. How old were you when you got married or began to live with your partner? Years ()
- 1a. How old was your partner at that time? Years ()
- 2. How old were you when your first child was born? Years ()
- 3. Please, write in the blanks the sex, age and other details of each of your children:
- 3.1. The first one: a) Male () or Female (), b) Is he/she alive? Yes () No () c) He/she is () years; months if he/she is an infant () months old, d) Is he/she healthy? Yes () No (), e) In such a case) What is his/her trouble? ..., f) Schooling...
- 3.2. a) Male () or Female (), b) Is he/she alive? Yes () No () c) He/she is () years; months if he/she is an infant () months old, d) Is he/she healthy? Yes () No (), e) In such a case) What is his/her trouble? ...,
 f) Schooling...
- 3.3. The third one: a) Male () or Female (), b) Is he/she alive? Yes () No () c) He/she is () years; months if he/she is an infant () months old, d) Is he/she healthy? Yes () No (), e) In such a case) What is his/her trouble? ..., f) Schooling...

3.12. The twelfth...

4. (Only women) Have you breastfed to your children? (Following are a table with as many rows as necessary from the older to the younger) a) Yes ()
b) No ()
4.1. How long have you breastfed each one? ... years ... months

5. Were your children born a) in your home assisted by a midwife () b) or in a hospital assisted by a doctor ()

6. Did any of your children die when were born or in the first five years of life?

Yes (), a) How many sons?... b) How many daughters?... No, neither ()

7. Before getting married, did you live all the time in your parents' home?

a) Yes () b) No ()

(8. Once you got married, did you... a) stay living in your parents' house? () b) went to live to your partner's parents' house? () c) went to live apart? ()

^{...}

(9. (Only for the two first above cases) How long did you stay living in your parents' (in taw) home? ...

julto. Please, can you detail, at that time, which were your house/family duties?...

11. Did you prepare the best conditions for your first child's arrival?

Yes, 100% () No, 0% () Just partially 50 % ()

- 11a. What percentage?...
- 11a. Compared to your first child, did you prepare better the conditions to receive to your second child? a) Yes () b) No ()
- 12. When you were next to your first-born child, had you have enough money to pay for the usual expenses a) Yes ()b) No ()
 - 12.1 Were you prepared with time and mental disposition to be a good parent? Yes () No ()
- 13. Please, tell us about each of your other children...

14. Have you got any grandchildren? If so, how old were you when the older one was born? ...

- 15. How old was your partner when your first grandchild was born?...
- 16. How long ago that your newly-born grandchild was born?
- 17. Please, write in the blanks some details of each of your grandchildren:
 - a) Sex, b) Survivorship, c) Age, d) Is he/she healthy, e) If not, what kind is his/her trouble of?..., f) Current schooling...
- 18. Please, cross the place of your father's birth order: 1^{st} (), 2^{nd} (), ..., etc.
- 18b. How many siblings were in his sib-ship, including to him? ...
- 19. Please, cross the place of your mother's birth order: 1st (), 2^{nd ()}, 3d ()..., etc.
- 20. How many siblings were in her sib-ship, including to her? ...
- 21. Is your father alive? Yes () No ()
- 21a. If yes, how old is he?...
- 21b. If not, how old was he when he died?...
- 23. Is your mother alive? Yes () No ()
- 23a. If yes, how old is she?...
- 23b. If not, how old was she when she died?...
- 24. At what age did your parents have got married? a) Father...years old,b) Mother...years old
- 25. Can you tell us some Totonacas' habit related to having children, parenting or taking care of them?...

- 26. Before forming your own family, did you live in a different family's house which you used to give some help to? Yes () No ()
- 27. Did you earn some pay-back or some kind of return for that help? a) Yes () No()
- 27b. If yes, what kind of return? a) Daily meal (), b) Clothes (). c) Footwear (), d) Accommodation (), e) Medicine when you were sick () f) Care (), g) Training (), h) Support for going to school (), i) Some piece of land, (), j) A house (), k) Money (), I) Domestic animals (), m) Any kind n) Advice and moral support, o) Companion, inheritance (),

of

p) Other ()...specify...

28. To whom did you use to help? a) Your parents, b) Close relatives (), c) d) Bosses, landlord, (), e) Neighbours and friends, f) Distant relatives. Other people, ()...specify..., g) Siblings ()

- 29. How many people did you use to help? Tick as convenient: (1), (2), (3), (4), (5), (6 or more)
- 30. How old were they? a) Older than 60 years old (), b) Between 40 and 59 of age (), c) 20-39 (), d) 13-19 () e) Children (), f) Babies ()
- 31. Which were the four main tasks did you use to do for them?...
- 32. How many were they females? () How many were they males? ()
- 33. How many years did you live helping there? ...
- 34. How old were you when you started to help them?...years old. And when you finished?.... years old.

(35.) (Just for women) Have you received some kind of help to attend to your house? (to gather some firewood, to carry along some water, to wash, to iron

for you, etc.). Yes () No ()

(35a. From whom? Specify:,,,,

(35b) How many hours per day approximately...

36. (Just for men) Have you received some kind of help to attend to your house, business or your farm work? Yes () No ()

36b. How many hours per day approximately?...

C. MALE/FEMALE, NON REPRODUCTIVE (MARRIED OR NOT) PEOPLE

- 1. Why have not you get married? ...
- 2. Do you think you will get married in the future? a) Yes () b) No ()

2a. Why?...:

- 3. In the past years did you have had sexual relations? a) Yes () b) No ()
- 3a. Why?
- 4. How frequent have you had sex? a) Never (), b) Once a year (),c) Once a month (), d) Once a week (), e) Everyday ()
- 4a. (If so) Which are some of the reasons for not having sex?...
- 5. Do you think to have sex in the future? a) Yes () b) No ()
- 6. What is your opinion about having children or to be a father/mother?...
- $\sqrt{7}$ Which are some of the tasks that you do to help your parents?...
- 8) How important do you think is to help your parents/family? a) Indispensable (),
 b) Very important (), c) Important (), d) A little important (),
 e) Not important at all ()
- 9. How many days per week do you (), and hours per day () do you
- > regularly dedicate to helping your parents/family?
-)10. How many persons are taking advantage of your help?...0, 1, 2, 3, 4, 5, 6, 7, 8, 10, more... (tick or write as convenient)
- (11. In your opinion, at what extent does your help improve your relatives' life quality? a) Nothing (), b) Almost nothing (), c) Very little (),
 d) Fairly (), e) Long enough (), f) Totally ()
-)12. How long do you plan to continue helping your relatives? a)Years (), b) Months, c) Weeks (), d) Months, e) Days, e) As long as I live, f) As long as they live
- 13. In your opinion, does a person who helps deserve some return for helping to his/her relatives? a) Yes (), b) No ()
- 14. (If yes) What kind of return? a) Daily meal, b) Accommodation, c) a piece of land (), d) a house (), e) money (), e) Clothes and footwear (), f) respect and gratitude (), g) Other things ()
- 15. In your opinion, what are those advantages of getting married at an early age?
 - 13. And what are those disadvantages (if any)?
 - 14. What is the best age for getting married?
 - a) For men ... years old, b) for women ... years old

- 15. Starting from what age, does a woman begin to be a spinster? years old
- 16. In the case of a man; is there an age when he becomes an "old bachelor"?
- 17. In general, how must the life of a spinster woman be? a) She must she live with her parents (), b) She must live alone (), c) She must live with friends ()
- 18. Must she have her parents' permission to work? a) Yes () b) No ()
- 19. Must she have her parents' permission to go out with just friends?
- a) Yes (), b) No (), c) Ambivalent answer ()
- 20. Must she have her parents' permission to have a boyfriend?
- a) Yes (), b) No (), c) Ambivalent answer ()
- 21. In your opinion, is it correct a spinster have a child?
- a) Yes (), b) No (), c) Ambivalent answer ()
- 22. In your opinion, is correct a spinster to have sexual relations?
 - a) Yes (), b) No (), c) Ambivalent answer ()
- 23. In your opinion, is correct a single male to have sexual relations?
- a) Yes (), b) No (), c) Ambivalent answer ()
- 24. In your opinion, is correct a single male to have a child?
- a) Yes (), b) No (), c) Ambivalent answer ()
- 25. Must he live with his parents? Yes (), b) It is better alone (),c) He might live with friends ()
- 29. How do you imagine will you be living in twenty years? a) Single (),
 b) Married (), c) With no children (), d) With children (), e) Married, with children
- 29a. How many children? ...
- 30. Do you have any trouble preventing you to have children? a) Yes (), b) No () (If yes) Which is it?...
- 31. In future, in the case you were married having children, would you agree somebody to be living in your home, taking care of your children and helping you with the house duties or farm works? a) Yes (), b) No ()
- 31a. Why? ...

32.. In your opinion, one is born to have as a destiny or a mission in life to have: children and becoming a parent? a) Yes (), b) No ()

33 In your experience, what is the more appropriated behaviour in a single individual?

33a. About men (Choose only one option per question):

Must not have sexual relations: a) I agree, b) I disagree ()

- 34. Men remain virgin until matrimony: a) I agree, b) I disagree ()
- 35. Men may have a girlfriend: a) I agree, b) I disagree ()
- 36. Men may go out with female friends, parties and have fun:
 - a) I agree, b) I disagree ()
- 37. 36. Men may go out only with male friends, take part in parties and have fun:a) I agree, b) I disagree ()
- 38. About women (Choose only one option per question):Must not have sexual relations: a) I agree, b) I disagree ()
- 39. Women remain virgin until matrimony: a) I agree, b) I disagree ()
- 40. Women may have a boyfriend: a) I agree, b) I disagree ()
- 41. Women may go out only with female friends, take part in parties and have fun:a) I agree, b) I disagree ()
- 42. Women may go out with male friends, take part in parties and have fun:a) I agree, b) I disagree ()
- 43. In your experience, is it true that women are more selective in choosing boyfriends and husbands? a) Yes (), b) No ().
- 44. In your experience, are women more reluctant than men to have sex or are the men in that way? a) Women (), b) Men ()
- 45. Why do you think it is in that way?...
- 46. In your experience, are men more eager for sex and philanderer than women ?
 - a) Women (), b) Men ()
- 46a. Why do you think in that way?...
- $\frac{1}{(47)}$ In this community, how does it really happen?
 - a) A man chooses his bride/wife (), b) A woman chooses her groom/husband (),
 c) Both choose each other, d) Neither of the last ones (),
 e) A different person chooses the partners
 - 48. In your experience, a woman from your community freely can reject a suitor?
 - Yes (), No ().
 - 48a. How is it?...

4

(49.)Which are the most attractive features in a woman who wants to become a girlfriend for a man? (In priority order choose from the first to your fifth option)

- 50. Which are the most attractive features in a man who wants to become a boyfriend for a woman? (In priority order choose from the first to your fifth option)
- 51. According to its importance, in priority order from the most important to the least, choose from the 20 following values the five most important...

H. MALE AND FEMALE INFORMANTS, NON REPRODUCTIVE (MARRIED OR NOT) IN THE CHANCE OF BEQUEATHING THEIR ASSESTS

- 1. How much are your monthly incomes of money (in Pesos)
- 2. In kind, how much is your annual maize production (in kilograms)?
- 3. In kind, how much is your annual beans production (in kilograms)?
- 4. In kind, how much is your annual coffee production (in kilograms)?
- 5. Do you give any support from your money or products to someone?
 - 6. (In case of an answer "Yes") How much money do you give away, monthly, in average?

 $\sim)(7,T)$ whom do you give that money?

- 8. (In the case of "Others") Please, specify your relationship:
- 9. In kind of maize, how many kilos do you give away to their support? (Every six-months)
- 10. In kind of beans, how many kilos do you give them away? (Every sixmonths)
- 11, In kind of coffe-beans, how many kilos do you give them away? (Every six-months)
- (12) Those products, to whom do you give away?
 - 13. (In the case of "Others") Please, specify your relationship:
 - 14. If you are able to choose, to whom do you prefer to give any support? (By kinship) (just one option)
 - 15. (In the case of "Others") Please, specify your relationship:
-) 16.1If you are able to choose, to whom do you prefer to give any support? (By gender) (just one option)

)(1) Why?

- 18. If you are able to choose, to whom do you prefer to give any support? (By age) (just one option)
-) 19. Why?
- 20. If you are able to choose, to whom do you prefer to give any support? (By parental branch) (just one option)
 - 21. Why?
- ightarrow 22. Do you expect someday they will give you back any help?

- 23. If yes, how will it be?
- 24. If no, why do you do it?
- 25. Are you the owner of any farm-plot, a piece of land, house or other property?
- 26. (If yes) What kind of property is it? (Number 1)
- 27. (Property number 2)
- 28. (Property number 3)
- 29. (Property number 4)
- 30 How did you acquire that property?
- 31. If in an indirect way, would you explain what indirect way?
- 32. Had your parents any property to bequeath to their offspring?
- 33. Did your parents bequeath you or have they already done a will that you know?

5)(34) To whom did your parents bequeath?

- 35. Would you mention them, please?
- 36. Did civil status and parenthood influence your parents to bequeath their children?
-) (37) Do you think your parents bequeathed fairly to their offspring?
 - 38. If don't, why don't? (First part)
 - 39. (Second part, in case of more information)
 - 40. (Third part, in case of more information)
-) $\langle \widehat{41} \rangle$ What about you, how much didiget at bequeathing?
- 42. In your opinion, which was the criteria applied by your parents when they bequeathed their property?
- (43) When the moment comes, which will be your general criterion to bequeath your farm-plot?
 - 43. a) If you are able to choose, to whom do you prefer to bequeath your farmplot? (By gender) (Just one option)
 - 43. b) How old is the person you have considered as your farm-plot inheritor? (By age) (Just one option)
 - 44. Which will be your general criterion to bequeath your house
 - 44. a) If you are able to choose, to whom do you prefer to bequeath your house?(By gender) (Just one option)
 - 44. b) How old is the person you have considered as your house inheritor? (By age) (Just one option)

- 45. When the moment comes, which will be your general criterion to bequeath your piece of land?
- 45. a) If you are able to choose, to whom do you prefer to bequeath your piece of land? (By gender) (Just one option)
- 45. b) How old is the person you have considered as your piece of land inheritor?(By age) (Just one option)
- 46. When the moment comes, which will be your general criterion to bequeath any second house?
- 46. a) If you are able to choose, to whom do you prefer to bequeath your any second house? (By gender) (Just one option)
- 46. b) How old is the person you have considered as your any second house inheritor? (By age) (Just one option)
- 47. When the moment comes, which will be your general criterion to bequeath any money you have?
- 47. a) If you are able to choose, to whom do you prefer to bequeath any money you have? (By gender) (Just one option)
- 47. b) How old is the person you have considered as your money inheritor? (By age) (Just one option)
- 48. When the moment comes, which will be your general criterion to bequeath any tools, a second piece of land or animals?
- 48. a) If you are able to choose, to whom do you prefer to bequeath any tools, a second piece of land or animals? (By gender) (Just one option)
- 48. b) How old is the person you have considered as your inheritor of any tools, a second piece of land or animals? (By age) (Just one option)
- angle 49. In summary, which will be your main criterion to choose your inheritors?