TAKING THE RISK OUT OF RISKY TRANSACTIONS

A FORAGER'S DILEMMA

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For the better part of our evolutionary history as foragers, the well-being of any individual rested heavily in the hands of others. With no grain in the larder, no meat stored on the hoof, and no money in the bank, humans had little option other than to build savings in the form of social ties that could be drawn on to cover unforeseen losses caused by environmental or social hazards. Relationships bearing mutual obligations were well distributed over the population, so that in times of hardship losses could be absorbed by others. In other words risk, the probability of loss, was pooled within social networks.

Though ties of mutual obligation can be used effectively to reduce risks, they generate risks of their own — those of defection, debt, or dominance. In this paper, I address the issue of how risky transactions are handled within forager social security systems. First, I will very briefly review some of the archaeological evidence for the evolution of kinship systems and the social security networks they form, suggesting that such ties are deeply rooted in our past. Then I will focus on two questions regarding risky transactions: (1) What is done in foraging societies to define the terms of relationships of reciprocal altruism in such a way that if
defection occurs, losses are relatively low? (2) Given that not all risks can be alleviated by carefully defining terms of relationships, how are partners chosen and relations monitored to remove as much risk as possible from risky transactions? To address the former, I will draw on material from a number of modern foraging societies. For the latter, I will examine the effects of social and biological kinship, relationship history, social sanctions, and emotional bonds in securing partnerships of reciprocity amongst the Ju'hoansi (Kung San) foragers of southern Africa. Data from 1974–5, when hunting and gathering constituted the dominant mode of subsistence and environmental hazards were high, will be compared with those from the 1996–7, when the Ju'hoansi were permanently settled at boreholes with insecurities in food and water supply alleviated by government and foreign aid programmes.

Forager social networks: a glimpse into the past

The evolution of socially defined kinship networks that opened access to the resources of people outside the family and outside the residential group had an important impact on the ability of hominids to expand into and survive in niches with harsh environments and high variability in natural resources. Losses due to fluctuations in natural resources, inability to find mates, and conflict could then be absorbed by a broader population, as people redistributed themselves over social and natural resources according to availability and need (Cashdan 1985; Myers 1988; Smith 1988; Testart 1982; Wiessner 1977, 1982, 1983; Vengowan 1983). With the advent of socially defined kinship, that is to say, the extension of kinship terms and nurturant behaviour from family members to more distant kin and to those related through marriage, support groups were no longer delimited by immediate family membership or physical cohabitation. Instead this wider definition of kinship allowed networks to be held "in the mind and heart", composed of kin of varying degrees of relatedness residing in different locations. Today all human societies have systems to classify kin by social means and the number of elementary systems of kinship classification systems is finite (Levi-Strauss 1969). In all human kinship systems, transactions bear risks; regulating these consumes much time and adds much spice to social relations.

Cognitive and behavioural prerequisites for systems of socially defined kinship that form and act to reduce risk include abilities to: (1) categorize and symbolize; (2) engage in relationships of delayed reciprocal altruism; and (3) treat less familiar individuals like family members even though their habits, behaviour, or ideas might seem foreign or even repellent. While kinship systems in and of themselves leave few traces in the archaeological record, there is some evidence regarding the evolution of the above capacities which might give some clues as to when socially defined kinship systems could have first entered the repertoire of human behaviour.

There is increasing evidence from the Lower and Middle Paleolithic indicating that hominids could have had the capacity to symbolize (Marshall 1990; see also Bednarik 1995 for a good, though controversial, summary). This has led to a revision of the view that the Middle to the Upper Paleolithic transition (between ca. 30,000 and 40,000 B.P.) was abrupt with the sudden appearance of modern humans and their capacity for sophisticated manipulation of symbols and complex language (Klein 1973; Mellars 1973; White 1982) in favour of a much longer and more gradual transition from the Middle to Upper Paleolithic (McBrearty and Brooks 2000; Hayden 1993; Lindley and Clark 1990; Rigaud 1989). Nonetheless, examples of symbolic behaviour in material remains that do exist from the Middle Paleolithic occur at low frequencies, and artefacts found exhibit little continuity or redundancy in form, suggesting that the social matrix in which they flourished had not yet coalesced. Only in the early Upper Paleolithic (Aurignacian) is symbolic and stylistic expression in non-lithic artifacts and pierced pendants used for self-decoration found in larger quantities and on a regular basis (Taborin 1993; White 1989, 1993). Since expression of personal identity or worth via style and self-decoration would hardly be needed in small face-to-face residential groups where individuals knew one another well, the advent of self-decorative artefacts in volume may be an indication of increasing positive self-presentation to outsiders via symbolic means rather than physical display.

The extension of familial or "altruistic" behaviour directed towards more distant kin most likely evolved very gradually. In the Middle Paleolithic the widespread distribution of raw materials from a source may suggest importation by intergroup exchange. By the early upper Paleolithic a very substantial body of data from both western and eastern Europe concerning the long distance movement of goods and valuables indicates that intergroup ties of reciprocity were indeed active (see Gamble 1982; 1986, pp. 331–8, and 1999). Though results vary by area, the general trend is from a virtual absence of imported raw material in the Lower Paleolithic to the regular importation of raw materials and shells in significant proportions from sources 100–300 km. away during the upper Paleolithic, as kinship networks expanded to become a critical part of human adaptation.

Finally, the construction of socially defined kinship networks must overcome the formidable barrier of acting against immediate self-interest in anticipation of delayed returns and treating those with whom one is not so familiar as close kin. It is in this context that indoctrinability, the predisposition to be inculcated with loyalties that run contrary to immediate individual interest, may have entered the human behavioural repertoire. Certainly all relations of social kinship found today rely on some form of indoctrination to instil feelings of obligation or loyalty towards persons outside the immediate family, often through ritual. The flourishing of art in the Upper Paleolithic may have been a part of private or public ritual to standardize norms and values between people or groups and thereby facilitate the interaction and exchange that reproduce kinship relations (Wiessner 1998). Barton et al. (1994, p. 201) have argued persuasively that:

Prior to the last glaciation, human populations appear to have displayed a very different response to environmental stress and loss of land area than is seen in the late Pleistocene. Europe, and presumably other middle latitude temperate regions of the Old World, were largely abandoned by human populations during glacial maxima in the Middle Pleistocene. In the Upper Paleolithic, however, social mechanisms...
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evolved that permitted the maintenance of higher population densities that in turn resulted in the appearance of extra-familial corporate groups.

There is a vast amount of archaeological data relevant to the above topics, and current interpretations are by no means definitive. However, it seems reasonable to infer, based on strong evidence that first appears in the Middle to Upper Paleolithic transition, the evolution of socially defined kinship networks and their risky transactions that, when structured appropriately, served to reduce risk.

The terms of forager ties

Designing the terms and obligations underlying social relationships to pool risk can do much to diminish investment, increase the probability of appropriate and timely reciprocation, and avoid incurring debt without compromising the effectiveness of such ties for covering serious losses. Certain common terms of relationships designed to do so characterize social systems of foraging groups throughout the world. The first is that the terms of exchange relationships within the population that pool risk approximate what Sahlins (1972) has called generalized reciprocity: that the one who gives to the one who is in need (provided that the need is real). Returns occur when the donor is in need and when the recipient has the means to give; they are not stipulated by time, quality or quantity but by need and ability to fill it. Such loosely defined terms, though most suitable for covering unpredictable losses, are not without problems: establishing who has what, who is in need, and if the need is real are issues that fuel a good part of the daily social action in forager societies. The ramifications of these terms are enormous. For one, they do not permit sanctions to be levied against a person who does not have anything to give for the moment. Second, they inhibit one person from putting another into debt, debt that may not be repayable for a long time if environmental or social conditions remain unfavourable. People have no obligation to reciprocate until they become have-have, and so the only way for “haves” to avoid exploitation is to conceal what they do have or cease work, become have-nots, and as such claim reciprocation under the guise of need (Lee 1979; Myers 1988; Wiessner 1982). It does not take long before the free rider gets the message.

Second, it is generally not the obligation of the receiver to voluntarily reciprocate, but the obligation of the giver to make the receiver want to do so, or to demand that he or she do so. Generosity is not defined as unsolicited giving but as giving when legitimately requested. Peterson (1993), in an excellent discussion of terms of sharing relationships for foraging societies, describes forager sharing as “demand sharing”. Social controls are built into demand sharing that nip stinginess or willful non-reciprocation in the bud, as people pester those who have, particularly if return is due.

Third, and related, social ties to reduce risk are structured, whenever possible, so that the cost of giving assistance is small relative to its benefit to the receiver. For instance, if the resources in the area of one family fall totally and they take refuge with kinsmen for an extended period, the cost for the host family of opening their resources to temporary use by kin is small in relation to the value of the assistance given to the visitors. Or, a piece of meat given from a large animal is usually of far greater value to the meat-hungry recipient than to the meat-rich giver.

Fourth, relationships in all forager risk-reducing kinship networks operate within a matrix of egalitarian relations. On the one hand, forager societies encourage individual expression and individual difference – the greater the range of abilities fostered in a population, the greater its potential to absorb losses. On the other, egalitarian ethics define all people as having more or less equal rights to status and resources, regardless of individual ability. Egalitarianism, in turn, has powerful long-term implications for the costs of reciprocity, for giving takes place with the knowledge that the recipient cannot use assistance received to gain disproportionate social, economic, or reproductive advantage, to usurp the resources of others, or otherwise dominate them. Those who seek to do so are quickly levelled.

The above terms of reciprocity, held within populations that pool risk, make their characteristic marks on forager economies by inhibiting competition and capital accumulation. They are found with remarkable consistency in forager groups from the Arctic to Australia and guide internal relations, though a wide variety of different relationships may exist with outsiders (Altman and Peterson 1998; Bahuchet 1990, 1992; Bird-David 1990; von Bremen 1991; Clastres 1972; Endicott 1988; Gould 1981; Griffith 1984; Harako 1981; Heinz 1979; Ichikawa 1983; Kent 1983; Lee 1979; Marshall 1976; Myers 1988; Sharp 1977, 1981; Silberbauer 1981, 1981b; van der Sluijs 1993; Sugawara 1988; Tanaka 1980; Turnbull 1965; Williams 1974; Woodburn 1982). Though effective for pooling risk, such terms cannot eliminate all risks from relationships. Fortunate may cause one partner to be a have and another have-not for extended periods of time. Cost to the giver might not always be low in relation to benefit to the receiver – in times of great hunger, resource sharing is always costly. Though society sees that assistance given is not used to achieve disproportionate economic or reproductive advantage, it still serves to increase the recipient’s welfare and relative success.

Despite the costs of risk-sharing, individuals cannot survive on their own as foragers, and the capable and incapable alike must remain in the system even if it is only to survive a few severe crises in their lives that would otherwise lead to death. How then are the unavoidable risks minimized?

Kin selection theory would predict that when risky relationships cannot be avoided, close kin would be favoured in direct proportion to their degree of relatedness, because by helping kin one receives both economic and genetic “pay-offs”. There are many statements in the forager literature that attest to the fact that kin are the ones most likely to engage in sharing and other forms of delayed reciprocity that serve to pool risk. However, it is difficult to infer from these to what extent biological relatedness plays a role, for human kinship systems permit familial terms to be extended to distant kin. Here I will address this issue and try to: (1) assess the effect of genetically based kinship on choice of partners; and (2) explore which fac-
tors, in the absence of close kin ties, help secure productive, long-term reciprocity between more distant kin.

Risk reduction among the Ju/'hoansi in the 1970s

The Ju/'hoansi or !Kung San of N.W. Botswana and N.E. Namibia have been well documented in the work of Biesele (1990, 1993), Howell (1979), Lee (1979, 1986, 1993), Lee and DeVore (1976), Marshall (1976), Stott (1981), Wiessner (1977, 1982), and Yellen (1977) amongst many others. Since at least the nineteenth century and particularly since the 1950s, Ju/'hoansi life has been altered with every decade as they increasingly entered into interaction with surrounding populations (see Wilmsen 1989 and Gordon 1992 for excellent discussions of prehistoric and historic San contacts with surrounding populations).

In the mid-1970s, the Ju/'hoansi of the Dobe-/Kae/kae area of N.W. Botswana were primarily foragers (Map 2.1). Eighty percent of subsistence was obtained from gathering, 12 percent from hunting, and 3 percent was acquired from neighboring agro-pastoralists (Wilmsen 1989, p. 240). Both meat and vegetables were widely shared. Settlement patterns within a band's area of land rights (n/a) consisted of dispersal into small scattered camps during the wet season and aggregation at large camps during the dry season. While food was plentiful in the mid- and late wet season, Ju/'hoansi suffered shortages in the drier months, particularly as overgrazing by the herds of neighboring agro-pastoralists destroyed bush foods. Environmental risks were high. Permanent waters were few and drought made many resources inaccessible for much of the year. Moreover, there were considerable fluctuations in the yearly production of wild vegetable foods (Yellen and Lee 1976) as well as variation in game movement and hunting success (Wilmsen 1989). Plant foods such as nutritious mongongo nuts and morama beans were unevenly distributed, being abundant in some areas and totally absent 20–30 km away. Other risks stemmed from demographic fluctuations in the small Bushman population (Howell 1979) and from conflict which was usually settled by dispersal. In the 1970s the Ju/'hoansi constructed far-flung social networks which opened access to the resources of others, so that unpredictable losses could be absorbed by the broader population. They did so through kinship and a system of partnerships called xaro (nxaro in former publications).

The !Kung kinship system and its relation to xaro works as follows. Ju/'hoansi first define their kinship universe through conventional kin terms, an "Eskimo" system of classification which reflects some aspects of biological kinship in that nuclear family members are distinguished from collaterals and the majority of in-law terms are distinct from consanguineous kin, except for wife's sister and brother's wife. Standard !Kung kinship terms are structured by relative age and generation, and each term carries with it a relationship of joking or respect that delimits eligibility for marriage and a range of permitted behaviour (Lee 1986). Kin terms can then be extended to more distant relatives who share their name or names of family members via the name relationship (Marshall 1976). The name relationship thus destroys the logic of standard kinship, and continues to do so as demographic events add ever new names to a person's kinship repertoire. The discrepancy between conventional kinship terms and those applied via the name relationship is resolved by a principle called "w"i" in which elders choose, amongst possibilities afforded by standard kinship and the name relationship, the terms that they wish to apply to juniors. Thus it is elders who have the potential to manipulate kinship. After these three principles of kinship, xaro comes into play (Wiessner 1994). Kinship terms and corresponding relations of joking or respect determine to a limited extent only who has obligations to whom; through xaro Ju/'hoansi further activate the responsibilities of kinship and specify with whom they want to have more binding commitments. For a xaro bond to be created, a consanguineous kinship link must be identified.

Xaro partners, as persons selected from the wide range of available kin, "hold each other in their hearts" and engage in a relationship with two components. The one is a roughly balanced, delayed, reciprocal exchange of non-food gifts - beads, arrows, tools, clothing - that gives information about the status of the relationship and reinforces emotional bonds. The second component of the xaro is an underlying relationship of mutual responsibility in many areas of life. A person has the right to call on a xaro partner in times of need, whether the need be precipitated by environmental failure, conflict, personal disability, or inability to find a suitable marriage partner. If the partner is able, he or she will assist. While xaro does serve to appease jealousies and reinforce sharing within a camp, its more important role is to open up alternate residences in neighboring or distant groups that can be
utilized for extended visiting in times of need. Ju’hoansi reciprocity in general and xaro in particular, are constantly monitored and defection corrected before it leads to serious strife. For example, in conversations lasting more than fifteen minutes recorded in August 1974, 59 percent involved availability of food in other areas, food procurement or food redistribution – who had what and did or did not give it to whom. Complaining is a fine art mastered with age, but when bickering and pestering reach an intolerable level, social harmony is renewed during the trance dance, a metaphor of sharing. Men and women gather in the evening to sing and dance in support of healers who enter into a state of trance, travel to the world of the spirits, fend off misfortune and bring back preventative energy (n/om) to share with all community members (Katz 1982, Katz et al. 1997).

As with kinship, Ju’hoansi spheres of xaro develop with age (Wissner 1982). A child is given xaro gifts by a maternal or paternal grandfather within the first six months of life to foster well-being. At the age of one to two, symbolic training for xaro begins when the parents periodically remove the child’s beads, and put them in the child’s hand to give to a relative, often inciting a tantrum. During childhood, children do xaro directly with parents, grandparents, or one or two maternal or paternal relatives with whom they have close bonds, while the parents may carry out xaro with others in the child’s name. Maternal and paternal relatives invest equally in children, and there is concern with constructing xaro networks for boys and girls alike. During adolescence, young people expand their spheres of xaro within the camp and with relatives in other camps. By the time of first marriage most Ju’hoansi have formed well-rounded sets of xaro partnerships. Should problems arise and the marriage shatter, each spouse has enough ties to stand on his or her own. Upon marriage, xaro ties are considered binding and a certain proportion of gifts received are expected to be passed on to the spouse who then gives them to his or her relatives, forming a link between the two families. If one spouse dies, the other may continue xaro directly with close affines of the deceased. As Ju’hoansi approach middle age they enter a stage of great vitality, mobility, and social influence, seeking marriage partners for their children, assisting their children during the early years of marriage, and taking over responsibility from their ageing parents. At this time they almost double their set of xaro partners. In old age, as their mobility and energy decrease and their eyesight wanes, elders hand over some of their partnerships to their children. Still, as masters in knowledge of kinship and land rights, they continue to receive many gifts. Upon death, a few possessions are buried with the deceased but most are taken and passed on to remaining partners with a request for return on the part of the children or grandchildren so that ties will not be broken.

During the 1970s, xaro networks distributed goods widely throughout the region, extending access to meat sharing to those outside a camp (Wissner 1981), and most importantly, opening up access to the resources and assistance of partners over a broad region. Xaro partnerships were well distributed over people living within a radius of 200 km of the study area and practising different ways of making a living – hunting and gathering, working for pastoralists, or residing in the settlement scheme of Tsumkwe set up by the South African administration which offered a store, school, clinic, possibilities for wage labour, and agricultural projects (Wissner 1977, 1982). !Kung regularly made extended visits to xaro partners when food in their home areas was short, when seeking refuge after conflict, for arranging marriages, or while looking for jobs, amongst other reasons. A survey of the visits made by 20 !Kung adults in 1968 and 1974 of one week or longer in duration revealed that the average !Kung made 1.5 extended visits a year with a mean duration of 2.2 months per visit. Eighty out of the 86 visits recorded (93 percent) were made to a camp in which a person or his/her spouse had a xaro partner (Wissner 1981, 1986). This means that for approximately three months a year, families lived from the resources of xaro partners, being hosted for the first few days and then hunting and gathering for their own living and participating in food sharing within the camp.

Reciprocity in xaro bears its own risks because individuals may be unable to be of assistance at any given time due to bouts of illness, absence from their own areas, shortages of resources, etc. Moreover, xaro relationships may be costly in terms of assistance given, resources shared, and time taken to maintain relationships and exchange gifts. For example, in the 1970s approximately five days per year per partner were spent making gifts for xaro or earning cash to buy gifts for xaro (Wissner 1986). Xaro is also a relationship that opens people to exploitation, something which is constantly monitored by gossip, or when gossip fails, by efforts to become a "have not" by either concealing goods or limiting production. Xaro exchange also bears social risks – to give a gift may bring great pleasure to the recipient but incite jealousy in others. For all of these reasons, numerous options are secured by distributing partnerships widely – in the 1970s the average !Kung had 14 – 16 xaro partnerships which included people of both sexes, a variety of ages, living at different locations, and having different skills (Wissner 1981, 1982). Within a person’s lifetime, the process of forming new partnerships takes at least five years before the relationship is considered solid; conversely, existing ones may dwindle if both parties lose interest. Breaking of partnerships by intentional non-reciprocation is unusual, but when it does occur it causes serious social strife.

**Xaro and kin selection**

Though hospitality of varying degrees, particularly the sharing of cooked food, may be extended to any kinsperson or even casual visitor, more binding relations and thus more risky ones fall within xaro. Following kin selection theory then, the probability of choosing partners should be proportionate to genetic relatedness. That is:

\[ P_{1/2} > P_{1/4} > P_{1/8} > P_{1/16} > P_{1/32} + \]

where \( P_{1/2} \) = the probability of doing xaro with an individual whose coefficient of relatedness, \( r \) (Hamilton 1964) is \( 1/2 \) or 50 percent. \( P_{1/4} \), \( P_{1/8} \), and \( P_{1/16} \) are defined similarly and \( P_{1/32} + \) is the probability of doing xaro with an individual whose coefficient of relatedness to ego is \( 1/32 \) or less.
The alternate hypothesis would be that the probability of doing xaro with people of all degree of relatedness is equal:

\[ P_{2\frac{1}{4}} = P_{2\frac{1}{4}} = P_{\frac{1}{4}2} = P_{\frac{1}{4}2} + \]

To test this hypothesis the number of xaro partners in each category of relatedness was counted and the number of individuals available for xaro in each category of \( r \) from \( r=\frac{1}{2} \) to \( r=\frac{1}{4} \) were calculated from ego's genealogy. Number of distant kin, \( r=\frac{1}{2} \), eligible for xaro had to be estimated. Since xaro required prior friendship and a putative consanguineous tie, it was not assumed that anybody in the surrounding population of some 2,000 was eligible. The average surrounding area contains 150-500 people, so it was estimated that a person knew at least 25 distant kin in his or her own area and 25 in each other surrounding area well enough to initiate xaro. Since knowledge of people in other areas increases with age and travel, an adolescent was assumed to know a minimum of 50 and maximum of 100 distant kin well enough to do xaro, adults with small children 50-150, and adults with mature children and older adults 50-200.

The data used to test this hypothesis came from a quantitative study of the xaro partners of 59 Ju/hoansi carried out in 1974-5 from the communities of /Kae/kae and Dobe in N.W. Botswana and Tsumkwe in N.E. Namibia. The genealogy of each person in the sample was collected and then he or she was interviewed about the terms and rights of xaro relationships, and how they were regulated. Then ego was asked to list all xaro partners and give their age, sex, current location, area of land rights, and kinship relation to ego. These interviews provided data on 956 partnerships. Subsequently, each possession of ego was listed with information about how it was acquired (in xaro, purchased, made, etc.), from whom, and in the case of gifts, the age, sex, location and kin relation of the giver.

The results presented in Table 2.1 give strong support to the kin selection hypothesis. For all age categories, the probability of choosing a genetically close xaro partner was greater than that of choosing a more distant one: the alternative hypothesis was refuted (Page's L trend test, one-tailed, \( p<0.001 \)). Kin with coefficients of relatedness up to \( r=\frac{1}{16} \) made up 54 percent of a person's xaro partners. Nonetheless, despite a strong tendency to favour kin, 46 percent of a person's xaro partners were distant kin.

That the vast majority of a person's xaro partners were not closely related in genetic terms is not surprising given the role of xaro in reducing risk. First, many people have few kin and must seek partners among more distant relatives. Second, though kin may be the best investment in genetic terms, if they are not capable of helping a person to absorb losses, they are not of great economic value as partners. Third, as the Ju/hoansi point out, it is close kin who are sometimes the poorest at reciprocation, for they know the strength of the family bond will allow for much leniency. Fourth, the success of xaro partnerships depends heavily on affective ties. Partners, kin or non-kin, who do not get along, can hardly live together for extended periods of time. This raises the questions of who were distantly related xaro partners and how were relations with them made more secure?

**Xaro, socially defined kin, and history**

The next logical step in looking at choice of xaro partners is to turn to the second principle of kinship, the name relationship. To see if choice of partners was preferentially structured by the name relationship, the names of ego and family members, mother, father, and siblings were obtained from ego's genealogy. (Ego and siblings in turn are generally named after grandparents or parents' siblings.) Relative frequency of names in the population (P1) was calculated from census data for 700 Ju/hoansi in the area and surrounding ones where most xaro partners were found. Expected frequencies were then calculated for each ego and each category of relationship and compared to actual frequency of these names in ego's set of xaro partners who are distant kin (\( r=\frac{1}{2} \)). The results, as given in Table 2.2, indicate that names of close relatives are found no more frequently in ego's set of xaro partners than in the population as a whole; Ju/hoansi did not appear to do xaro preferentially with name relatives. This does not mean that the name relationship...
relationship had no effect on Ju’/hoansi exchange relationships, for certainly it widened the sphere of potential kinship interaction, but that its impact on relationships with more binding obligations was not nearly as strong as genetic relatedness.

Who were distantly related partners? A closer analysis of this category reveals that 9 percent are with affinal kin. Though this appears to contradict the Ju’/hoansi claim that all xaro partners are consanguineous kin and that people do xaro only indirectly with affines via their spouses, in fact the contradiction is minor. Virtually all relationships in this category are between parents, siblings, or children-in-law or between step relatives who continued to do xaro after the death of the spouse who linked them.

Ju’/hoansi claim that the remaining relationships with distant kin (37 percent of all relationships) are largely ties that have been handed down from parents to children. Because genealogical knowledge is shallow and complete information often does not extend beyond grandparent’s descendents for both mother’s and father’s side of the family, they are unable to place them in their genealogies. However, for thirteen individuals in the sample for whom genealogies could be extended further, 16 percent of more distant partners could be identified on their genealogies as great-grandparents’ descendents and another 9 percent as great-great-grandparents’ descendents. In other words, they were relationships that had been transmitted over three to four generations. Certainly inheritance is well developed in passing on land from generation to generation, and the same inheritance concerns might motivate attempts to secure long-term ties which open access to the land of others.

Though one cannot argue that all xaro partnerships with distantly related partners are inherited, these figures suggest that history and inheritance are important factors in acquiring partners. There are at least two reasons for this. First, inheritance permits time-tested relationships to be continued—time-tested in terms of both the hospitality of the host group and the potential of the land owned by partners to have adequate complimentary resources when those in ego’s area are short. Second, ties with a long history of success cannot be easily replicated—Ju’/hoansi say that inherited relationships are therefore handled with the greatest care.

In summary, in the 1970s, xaro partners among the Ju’/hoansi were chosen to cover as wide a variety of losses as possible. The average person had 15–16 partners well distributed across ages, abilities, sex, and land. Risk of non-reciprocation due to inability on the part of specific partners was reduced by investing preferentially in more closely related kin than in more distant ones. When close kin were few or could not satisfy the needs of risk reduction, more distant kin were chosen, often via inheritance. Inheritance of partnerships assured that time-tried relationships were continued. Emotional ties with both close and distant kin played a crucial role in assuring reciprocity and great efforts were made continually to monitor relationships through discussion and immediate complaint. When disharmony rose to intolerable levels, the community was repaired through communal ritual.

Xaro in the 1990s

During the 1970s the Ju’/hoansi in the study population were entering a period of rapid change as the Government of Botswana stepped up programmes of rural development, amongst other initiatives. From 1976 onwards, people of the Dobe/KaeKae area became recipients of food rations, greatly reducing dependence on hunting and gathering and corresponding mobility. Simultaneously, the growth of herds of pastoralists made hunting and gathering a less viable mode of subsistence. Across the border in the Nyae Nyae area, a Bushman homeland was proclaimed in 1970 and people voluntarily moved to the new centre at Tsumkwe where the South African Government established a settlement scheme that promised secure water, food rations, wage labour, agricultural projects, crafts marketing, a school, a clinic and a store. By 1975, as many as nine hundred Ju’/hoansi, largely from the Nyae Nyae area, were settled at Tsumkwe in government-built concrete bungalows and in more traditional “villages” surrounding Tsumkwe.

With such dense settlement and new economic opportunities, social inequalities began to develop. The pendulum at Tsumkwe swung between a tendency to show off new found wealth, in contravention of egalitarian social norms, and attempts to restore harmony and equalize wealth through giving. Tsumkwe became both a magnet for its wealth and action and the dreaded “place of death” marked by jealousy, conflict, alcohol, and sickness. Xaro flourished at Tsumkwe to activate a wide range of kinship ties and redistribute wealth to appease, and when these tactics failed, families went to live with partners in Botswana for months at a time until tensions dissipated. In 1978 and 1979, Ju’/hoansi of the Nyae Nyae area moved to Tsumkwe to begin joining the South African defence force when bases were established in west Bushmanland, a formerly waterless region. Only about 10 percent of the population was employed by the defence force, mostly males of suitable age and physical condition, but others flocked to the vicinity of the bases to reap benefits – cash from the employed, schooling, medicine, well-stocked stores, electronic entertainment, and so on. Pay was very high by Ju’/hoan standards, and previously unknown amounts of money poured into the area to be circulated in xaro networks and spent on alcohol, clothing, household goods, radios, phonographs, bicycles, and livestock. This situation was to last for the next ten years.

In the early 1980s, small groups of Ju’/hoansi, repelled by the conditions at Tsumkwe, began to move back to their traditional lands. These initiatives received strong support from the anthropologists and film makers John Marshall and Claire Ritchie who together with the Ju’/hoansi founded the Nyae Nyae Development Foundation of Namibia. By 1992 over thirty groups had moved back to their traditional areas (Biese 1990; Lee 1993, Marshall and Ritchie 1984). The Ju’/hoansi formed the Nyae Nyae Farmer’s Cooperative in 1989, and drawing on funds raised by the foundation, were able to have bore holes drilled, provide their members with small herds of cattle at highly subsidized prices (Ritchie 1989), initiate agricultural programmes, promote Ju’/hoan literacy in their own language, and organize a crafts marketing programme. Wage labour, upon which many Ju’/hoan families had been
The nature of risk, both real and perceived, has thus been greatly altered with no new means of risk reduction such as storage practised on a regular basis. With such changes in the profile of risks and permanent settlement, one would expect a decrease in costly xaro ties with distant kin in distant areas and increasing reliance on partnerships with close kin that yielded both genetic and economic benefits. To test his hypothesis, data on xaro partnerships comparable with those recorded in the 1970s were collected for 60 Ju/'hoansi residing in three villages in the Nyae Nyae area (Map 2.1).^6

Tables 2.3 and 2.4 compare average number of xaro partners and their distribution for 1974–5 and 1996–7. The average number of xaro partners has decreased radically from 15.4 in 1974–5 to 6.8 in 1996–7 (Table 2.4), a change which is statistically significant (t-test, .01 level). The spatial extent of xaro networks linking individuals has also narrowed. While the average number of partners within a camp has increased very slightly, partnerships with those outside the camp have decreased radically and in proportion to distance (see Table 2.3). With more secure supplies of food and water, the high costs of maintaining ties at a distance are apparently greater than benefits received from such partnerships. To ascertain if reduction in xaro ties might be largely due to abandonment of xaro by the younger generation, participation in xaro by different age groups was compared for 1974–5 and 1996–7. Interestingly in 1974–5 adults with mature children had significantly more xaro partners than did adults with young children and old, partially dependent adults (ANOVA, p=.00), while in 1996–7 there were no statistically significant age differences in number of xaro partners by age category (ANOVA, p=.55). In

Table 2.3: Distribution of xaro partners by distance from ego in 1975 and 1997.

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Own camp</th>
<th>1–25 km</th>
<th>26–75 km</th>
<th>76 km+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number</td>
<td>55</td>
<td>91</td>
<td>123</td>
<td>245</td>
<td>51</td>
<td>510</td>
</tr>
<tr>
<td>Mean per person</td>
<td>2.6</td>
<td>5.5</td>
<td>7.0</td>
<td>1.5</td>
<td>14.6</td>
<td></td>
</tr>
<tr>
<td>Percent</td>
<td>28</td>
<td>48</td>
<td>48</td>
<td>10</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number</td>
<td>60</td>
<td>168</td>
<td>104</td>
<td>120</td>
<td>5</td>
<td>597</td>
</tr>
<tr>
<td>Mean per person</td>
<td>2.9</td>
<td>1.8</td>
<td>2.1</td>
<td>0.1</td>
<td>6.9</td>
<td></td>
</tr>
<tr>
<td>Percent</td>
<td>43</td>
<td>26</td>
<td>30</td>
<td>1</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Change since 1975</td>
<td>110%</td>
<td>51%</td>
<td>30%</td>
<td>6%</td>
<td>47%</td>
<td></td>
</tr>
</tbody>
</table>

n = number of Ju/'hoansi interviewed; total number = total number of xaro partnerships in each category; mean per person = mean number of xaro partnerships per person; percent = percent of all xaro partnerships in each category; change since 1975 = mean per person for 1997/mean per person for 1975.

(Dor 1975, only partners of 35 /Kae/kae Ju/'hoansi are considered as Nyae Nyae Ju/'hoansi were all settled at Tsumkwe as part of the South African development programme.)
Table 2.4 Genetic relatedness and choice of xaro partners in 1975 and 1997.

<table>
<thead>
<tr>
<th>Relatedness</th>
<th>1975</th>
<th>1997</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>r=1/4</td>
</tr>
<tr>
<td>Total number</td>
<td>49</td>
<td>149</td>
</tr>
<tr>
<td>Mean per person</td>
<td>3.0</td>
<td>1.5</td>
</tr>
<tr>
<td>Percent</td>
<td>20</td>
<td>10</td>
</tr>
</tbody>
</table>

n = number of Ju/'hoansi interviewed;  
total number = total number of xaro partnerships in each category;  
mean per person = mean number of xaro partnerships per person;  
percent = percent of all xaro partnerships in each category.

1996–7 Ju/'hoansi of all age categories were maintaining relatively narrow spheres of xaro.

Turning to kinship, as would be predicted from kin selection theory, reduction of xaro ties was related to coefficient of relatedness (Table 2.4). Though reduction of the number of partners occurred in all categories of relatedness, the greatest occurred with more distant kin. In 1974–5, 20 percent of the average person's partners were related by r=1/4 and 47 percent by r=1/6+, while in 1996–7 34 percent were related by r=1/4 and only 29 percent by r=1/6+ (both differences are statistically significant; t-test, p<.00).

In 1996–7 xaro still played an important role in the circulation of material goods, through percent of a person's possessions received in xaro declined proportionately with number of xaro ties. While in 1974–5, 69 percent of possessions were received in xaro, 16 percent purchased, 5 percent made, 9 percent received from non-Ju/'hoansi, and 1 percent received as spontaneous gift, in 1996–7, 34 percent of possessions were received in xaro, 30 percent purchased, 6 percent made, 14 percent received from non-Ju/'hoansi and 16 percent received as spontaneous gifts. Food sharing like circulation of possessions indicates continuing widespread sharing and reciprocity. Of 297 meals recorded for eight families at Xambo village between July 1996 and January 1997, 198 or 66 percent of meals were either furnished by others at their hearths or included food contributions from others (Wissner 1997). Other core principles guiding social relations continue to structure interactions: that the one who has gives to the one in need; that kinship and history have strong impacts on relationships of sharing and exchange; and that equality and respect of all Ju/'hoansi is staunchly defended. It is these factors that have allowed Ju/'hoansi to pool risk within the broader population for decades and probably centuries. As long as this matrix of relationships, norms, rights, and obligations central to risk-pooling persists, configurations of xaro partnerships can be reduced, expanded, or restructured to give Ju/'hoansi access to the resources of others in the population in accord with the problems and possibilities that the future will bring.

Concluding remarks

Risk pooling strategies similar to those described above are widely found within most forager societies known in the ethnographic record, though the system by which obligations are placed, xaro, is specific to the Ju/'hoansi and perhaps their neighbours the Nharo San (Barnard 1992). However, functional equivalents abound - meat-sharing, name-sharing, and wife-sharing partnerships among Inuit (Balikci 1970; Dumas 1972, 1984; Robbe 1989), tribal system sections and prescribed marriage in Australia (Yengoyan 1968), band alliances in the !Xo San (Heinz 1979), or in many forager societies lineage systems or other kinship relations (Babichet 1992; Endicott 1988; Griffin 1984; Henry 1941; Meggitt 1962; von Bremen 1991; van der Sny 1999). In all of these systems there is remarkable consistency in the following terms of relationships. (1) For all foragers internal relations depend on a matrix of egalitarianism and respect, so that assistance given cannot be turned to dominance or used to create indebtedness. (2) The terms of most relationships of mutual support for risk-sharing are that the one who has gives to the one who is in need, and that returns are not stipulated by time, quality, or quantity. (3) Giving is more often than not solicited by request; and requesting is a sign that one still cares (Marshall 1976). (4) Relationships are structured to make assistance given of little cost to the giver in relation to benefit to the receiver. (5) Control of defectors is exercised on a regular basis by the community and the metaphor of widespread reciprocity underwritten by religious ritual (Hayden 1987). (6) Genetically based kinship plays an important role in structuring reciprocity, and when kinship does not suffice, family relations and ethics are extended to more distant kin in the interest of social and economic security. The Ju/'hoansi data indicate that inheritance plays an important role in securing relationships through time, a factor that is rarely mentioned in forager ethnographies. Probably this is mostly due to the ideology of ethnographers, not foragers themselves. Foragers are seen as having "immediate return" economic systems (Barnard and Woodburn 1988, Woodburn 1982), and so questions concerning inheritance are rarely asked beyond those of land ownership. But it is likely that foragers, like all people of the world, are interested in passing on to their children that which has secured them throughout their lives, and that if the question is asked, foragers will be found to reproduce social ties over generations.

Foragers, who depended so heavily on social ties for their very existence over millennia, thus developed a complex social technology for pooling risk and for handling risky relationships. Throughout the course of history, with increasing population, inter-group competition and new techniques for harnessing energy and storing wealth, humans formed ever larger and more complex social groups. Membership in larger social groups confers many benefits, but the greater anonymity of such groups introduces even more risk into transactions. In
constructing larger social groups, some aspects of the forager repertoire of social technologies are expanded, for instance the bonding of larger groups by extending family terms and ethics to distant and non-kin (Eibl-Eibesfeldt 1989). Other aspects of forager relations are difficult to extend beyond small-scale face-to-face groups, for instance terms of relationships that structure giving on the basis of need and ability to provide, have and have not. Nonetheless, since developments build on what already exists, an understanding of forager tactics for dealing with risky transactions can provide a solid foundation for understanding subsequent developments – which aspects of these were abandoned, which preserved, and which expanded or transformed.

Note on the orthography

Patrick Dickens has published a standard orthography for the Ju/'hoan language in his English-Ju/'hoan, Ju/'hoan-English Dictionary (Rudiger Köppe Verlag, Cologne, 1994). This has been accepted by the Nya Nya Farmer's cooperative. Conforming to Dickens's orthography requires changing spellings so that they deviate from those used in my previous publications. Noteworthy changes are Tsumkwe, /Kae/ for /Xai/xai, and xaro for nxaro. !Kung has been replaced by Ju/'hoansi which is the dialect group of !Kung speakers to which the central !Kung belong. "Ju/'hoan" is both the singular and adjetal form.

References


Griffin, P.B. (1984), All food is shared: Agta forager acquisition, distribution, and consumption of meat and plant resources. Paper presented at conference on The Sharing of Food: From Phylogeny to History, Bad Honneberg, Germany.


Notes

1. The term "foragers" applies to hunter-gatherers who practise little storage, relying on social relationships to carry them through times of hardship. By contrast, complex hunter-gatherers, such as those found on the coast of North America, produce and store large surpluses. For discussion of different types of hunter-gatherer societies, see Binford (1980), Hayden (1990), Weissner (1996), and Woodburn (1992).

2. The data on visiting for 1968 were generously provided by Richard Lee.

3. I am grateful to Richard Sibly for assistance in formulating and testing these hypotheses.

4. This case study will be limited to the Nya Nya area of Namibia. Due to the current ban on anthropological research in Botswana, it has not been possible to follow developments at Dobe and /Kae/ke.

5. Scars remain from this time in the form of alcohol abuse and alienation, owing to the fact that the enemy whom they were hired to fight would soon become the builders of their new nation.

6. Comparable data were not collected for Dobe and /Kae/ke owing to a ban on San research in Botswana at the time of the study. However, the population is essentially one in respect of exchange. Some individuals in the 1966–7 sample were also subjects in the 1974–5 sample, and the majority of people in the 1966–7 sample were same names of those interviewed in the 1974–5 sample.