

population, social structure and strategic behaviour: an essay on polyandry, fertility and change in limi panchayat

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One of the fundamental goals of anthropological research in Nepal must be to generate data, explanations and recommendations which can be used by policy makers to improve the quality of life of the inhabitants without causing either long or short term degradation of the environment. In particular, the socio-economic systems of existing hill and mountain populations must be stabilized in their environments so that current patterns of population growth, out-migration and ecosystem degradation do not continue or become exacerbated and systems based on sustained yields instituted. One essential element in any such endeavor is an understanding of cultural demography, i.e. the study of the interface between sociocultural and demographic factors. Particularly important for this task is an understanding of the mechanisms by which environmental (both social and physical) inputs affect population growth and the effects of population increase (or decrease) on the ecosystem. Unfortunately, with only one or two notable exceptions (MacFarlane 1976, for example) this dimension of cultural ecological research has not received adequate attention among anthropologists working in the Himalayas. In this report I shall discuss some facets of this complex relationship and illustrate its significance for interpreting and planning development by means of an example from N.W. Nepal.

The paper employs two complementary perspectives. The first is concerned with "coping" behavior and focuses on how actors attempt to obtain individual and social objectives through the use of social and material resources. In the words of John Bennett (1976:847), this approach

. . . focuses on human actors who try to realize objectives, satisfy needs, or find peace while coping with present conditions. In their coping, humans create the social future in the sense of generating new problems or perpetuating old ones and may even modify the biological constitution of the population in the process . . . By analyzing the factors that guide the choices of strategies, one gains knowledge of the possibility and direction of change and the relation of human behavior to the milieus.

The second perspective focuses on the operation of components of ecosystems with particular emphasis on the role of social and cultural factors in such systems. Both these approaches will be used to examine the manner in which fraternal polyandry is part of a negative feedback loop regulating population size to resources and how recent political economic factors are affecting the traditional marriage system with important and potentially disruptive consequences for the population in question.

The data presented here was collected by the author in Limi Panchayat, Humla District, N.W. Nepal during field studies undertaken in 1974 and 1976. Limi is a high mountain valley with contiguous pasture areas occupying together approximately 150 square miles. The valley itself runs northeast to southwest and contains three villages, all of which are over 12,000 feet in elevation. The pasture areas range from about 13,000' to 17,000' with pastoral encampments being found as high as 15,600'. While politically a part of Nepal, the people of Limi are linguistically and culturally Tibetan².

As in most areas of Tibetan culture, the largest kinship unit in Limi is the corporate family. Marriages are usually patrilocal and normally either monogamous or fraternal polyandrous (two or more brothers sharing one wife). Contrary to practices in Tibet, bigenerational polyandry (father and son sharing a spouse) is not permitted. Plural polyandry or polygyny (two or more brothers sharing more than one wife) is encountered, albeit infrequently. Also unlike standard Tibetan practice is the fact that bilateral cross-cousin marriage (marriage, for a male, to his mother's brother's daughter or father's sister's daughter) is esteemed in Limi, whereas in Tibet it is considered incestuous. Such cross-cousin marriages may be polyandrous or monogamous.

Polyandry is the ideal form of marriage in families with more than one son and significant agricultural fields. In Tsang, one of the Limi villages, for example, 20 of the 52 marriages recorded were polyandrous. Of the 32 monogamous marriages, seven were in instances where a family had only one son, 23 were cases where brothers split off from previously consummated polyandrous marriages, and two were cases where brothers split up before marriage, each of them marrying monogamously.

Before discussing why the people of Limi marry polyandrously, it is important to understand the demographic consequences of this type of marriage. Fraternal

polyandry in Limi functions as a very important and effective mechanism of population reduction, although one which is unperceived by the inhabitants. It reduces both the number of females exposed to conception risk, and the extent of exposure of others and thereby reduces population growth.

The 20 polyandrous marriages in Tsang included 54 males and 23 females,³ yielding an average of 2.35 males per female. If we assume that without polyandry each of the 23 females would have had one husband, there are, then 31 "excess" males who are absorbed by polyandry, i.e., who will not seek a separate bride. This is 21% of the total males in Tsang and 33% of the males from 10 to 54 years of age.

Polyandry, however, does not reduce the fertility of individual females. The Tsang village data summarized in Table I shows that the average number of living children is 2.9 for monogamously married women and 2.7 for polyandrously married women⁴. This difference is so small, given the sample size, as to be insignificant. However, polyandry does have very important effects on fertility when viewed from a population or aggregate point of view.

Table I. Average Number of Living Offspring in Polyandrous and Monogamous Marriages

Age	Monogamous			Polyandrous		
	Number of females	Number of offspring	Average per females	Number of females	Number of offspring	Average per female
15-19	0	0	0	1	2	2
20-24	5	3	0.6	5	7	1.4
25-29	7	14	2	2	2	1
30-34	5	16	3.2	7	14	2
35-39	4	13	3.3	1	4	4
40-44	4	18	4.5	1	6	6
45+	8	33	4.1	4	22	5.4
Total	33	97	2.9	21	57	2.7

Without the intervention of cultural or biological mechanisms to reduce the number of females, one would expect that a marriage system such as just described would generate a sizable number of "surplus" unmarried women and in Tsang there are no intervening mechanisms. There is no infanticide of any kind and no polygyny (one man having, by himself, two or more wives)⁵. In fact, there were more females than males (76 to 68) in

the reproductive age bracket. Not surprisingly, we also found a significant surplus of unmarried women. In Tsang, 31% (or 21 out of 67) of the females of child-bearing age but over 20 (20-49) were unmarried. This figure would be even higher if we were to include 18- and 19- year-old females, but, since they still have a fair chance for marriage, they have been omitted.

The proportion of unmarried females in each age category is indicated in Table II. These proportions are extremely high for a preindustrial Asian society where virtually 100% of adult females marry.

Table II. Number of Living Offspring per Married and Unmarried Female and the Proportion of Unmarried Females

Age	Total Number of females	Number of married females	Number of living offspring for married females	Average Number of living offspring per married female	Number of unmarried females	Number of living offspring for unmarried females	Average Number of living offspring per unmarried females	Proportion of unmarried of total number of females
15-19	16	1	2	2	15	0	0	0.94
20-24	15	11	10	0.91	4	0	0	0.27
25-29	12	8	16	2	4	3	0.8	0.33
30-34	17	12	30	2.5	5	1	0.2	0.29
35-39	8	5	17	3.4	3	3	1	0.38
40-44	8	6	24	4	2	4	2	0.25
45-49	7	6	28	4.7	1	2	2	0.14
50+	17	15	58	4.1	2	2	1	0.12
Total	100	64	213	3.32	36	15	0.41	0.36
Total for ages 20+	84	63	211	3.34	21	15	0.71	0.25

The unmarried females in Tsang either (1) continue to live at home (eight cases), (2) establish their own separate households (seven cases), or (3) work as servants for others (three cases). There is mild social stigma for females who do not get married but there is no ostracism or social isolation. They comprise a named social category (morang) which has lower tax and corvee responsibilities than the other polyandrous and monogamous family units.

Not being married, however, is not synonymous with exclusion from the reproductive pool. Extramarital relationships, if discreet, are tolerated and therefore a number of the so-called unmarried women do in fact have offspring. Actually, half of the women in this category had one or more children. However, it is essential to note that the number of offspring per "unmarried" female is far lower than that of married women. The average number of living children in 1974 for married women was 3.3 per woman, whereas the average for the unmarried women age 20+ was 0.7 per woman (see Table II). As there is no infanticide and no significant difference in diet or style of life, the explanation of this difference is assumed here to be frequency of coitus, although data are not readily available.

Aside from factors such as the need for discretion and the difficulty of privacy, there are several important economic motives which seem to restrain frequency of coitus for the unmarried females. From the male's point of view, illegitimate children are expensive. The genitor is jurally responsible for his children, illegitimate or not, and is required to provide a variety of items such as a yak, clothes, a sword, and often even some plots of land. There is a great deal of open discussion among males (particularly the younger ones) about the risks of having affairs with unmarried women and this must certainly act as a restraint on the cautious and the poor. From the woman's point of view, children are also difficult to support. The payments made by the genitor are insufficient to sustain a child and unmarried females do not have enough land even to support themselves, let alone their children. They make up their deficits partly by weaving cloth and selling it but mainly by working for others. There is, therefore, a limit to the amount of deficit a woman can overcome, since she can only weave so fast and work so many days. My contention is that after the second child, and perhaps even after the first, the economic pressures become so great that unless there is some unusual source of income available,

unmarried females voluntarily either assume a celibate role or have intercourse at most only on infrequent occasions. One well-to-do man in Tsang has an open relationship with his unmarried neighbor. He supports her and openly treats her children like his own. He is able to dispense with normal discreetness because his wife many years ago had an illegitimate child and thus, quite literally, forfeited her right to object to his actions. It is significant to note that in this case the unmarried woman (who is 40 years of age) has four living children. This is above the average for married women and the only example of an unmarried woman with more than two children. In any case, regardless of the cause of this significantly lower rate of children for the unmarried women, its consequences are obvious for the overall population picture. Polyandry effectively restricts 31% of the reproductive-age females over 20 from full participation in childbearing and thereby depresses population growth. However, the adaptive significance of polyandry goes beyond this. My further contention is that fraternal polyandry in Limi is part of a negative feedback process which operates to adjust, to a degree at least, population size to resources. As an introduction to the discussion of the nature of this feedback loop, a brief comment is necessary on the reasons that the villagers themselves have for practicing of polyandry.

Individuals in Limi certainly do not embark on polyandrous marriages to reduce individual or aggregate fertility levels. No amount of questioning indicated that any of the subjects saw any connection between polyandry and fertility, and the fact that scholars have also not seen this connection is corroborating evidence for the elusiveness of this relationship. The inhabitants of Limi also do not marry polyandrously because they enjoy sharing a wife with other siblings or because of any deeply rooted motivational value such as "sibling solidarity". As we shall see, a variety of interpersonal tensions and conflicts are not uncommon in polyandrous alliances⁶.

The subjects' own explanation of their preference for polyandry is highly materialistic. They choose fraternal polyandry to preserve the productive resources of their family units (primarily land and secondarily animals) across generations. Polyandry is perceived and consciously selected as a means of precluding the division of a family's resources among its male heirs. Since land is scarce, most families having less than 1 acre of arable land, the people of Limi consider the

maintenance of this land intact, i.e., without being split into smaller and smaller parcels, a critical factor in sustaining a satisfactory standard of living, though not necessarily essential for sheer survival.

Polyandry achieves this goal by providing an intrafamilial milieu in which discord is minimized by the presence of only one wife on each generational level and thus only one set of heirs. It avoids the development of a situation in which nuclear family units within the family consisting of a brother, his wife, and children compete with each other. The fact that there is only one wife and one set of children (heirs) is believed to be a major deterrent to serious conflict and fission.

The need for labor is another important-and perceived-advantage of polyandry. While minimizing the risk of division of the family estate, polyandry concentrates labor in production units (corporate families) in a manner the traditional European primogeniture structured stem family did not. This is economically important since the typical agri-pastoral-trade economy of areas like Limi requires labor activities simultaneously in widely different locations for maximum economic productivity. For example, some of a family's females might remain in the village to do agricultural work all summer. One male might stay with the animals in the pasture areas, another might be in Humla trading, another in Purang (Tibet) buying salt, and still another in the village doing craft work such as making wooden tent pegs, beams, horse and bovine saddles, and the famous Limi wooden eating bowls. Fraternal polyandry, like the joint family, concentrates labor in family corporations but does so in a manner analogous to stem families in that it reduces greatly the possibility of partition of the corporation's estate.

The people of Limi consider the maintenance of the family estate intact a critical factor in sustaining a quality of life associated with families of substance and social standing. Fraternal polyandry is the mechanism they use to accomplish this.

This economic dimension, however, is oriented toward social advantage rather than toward subsistence per se. Mary Douglas, in an article dealing with population regulation (1966:268), has cogently argued this point with respect to population, and the same holds true for polyandry. As she put it:

". . . they are more often inspired by concern for scarce social resources, for objects giving status and prestige"

In other words, polyandry is selected not for "bread and butter" motives -- fear of starvation in a difficulty environment -- but for the Limi equivalents of oysters and champagne.

All situations where multiple brothers are present clearly do not result in polyandrous marriage. Very poor families with little land and few, if any, animals, generally undergo fission each generation since their subsistence derives primarily from wage labor or craft production. There is no "estate" of substance to conserve and individuals are as competitive individually as in sets of male siblings.

Polyandry, furthermore is not without problems. Because authority (among brothers) is customarily exercised by the eldest brother, younger male siblings have to subordinate themselves with little hope of changing their status. When these young brothers are aggressive and individualistic, inter-sibling tensions and difficulties often occur. Similarly, tension in polyandrous families may concern the relationship between the wife and her husbands. While the cultural ideal in Limi calls for symmetrical treatment in terms of affection and sexual access, deviations from this ideal occur and generate intra-familial tensions, if not outright conflict. Such "deviations" are particularly common when there is a sizable difference in age between the partners in the marriage. Thus, while polyandry provides an answer to one type of culturally perceived problem (albeit one which the subjects see as critical) it does generate other types of problems. Deviation from the "polyandric ideal", therefore, is manifested not only by the very poor but also by those younger brothers whose intra-familial conflicts are unbearable.

More important than these categories, however, are those cases where individuals could -- in terms of interpersonal relations -- easily remain together with their brothers yet individually might prefer more personal freedom and independence. They comprise a critical category since the more these males decide to precipitate fission (and marry), the higher will be the overall fertility for the populations.

The choice facing all younger male siblings is whether to trade-off personal freedom and independence for economic security and social prestige. Young siblings who are not forced by internal conflict to initiate fission must, before splitting, assess their potential for attaining satisfactory income and social status within some reasonable period. They must examine the opportunity costs of polyandry vis-à-vis going it alone.

Inheritance norms are crucial to an understanding of this assessment of opportunity costs. On a de jure level, Tibetan inheritance norms traditionally permit the partition of the family estate among its male members. Each male in the corporation theoretically has demand rights to an equal share of land and animals. But on a de facto level, the system operates almost as if there were impartible inheritance.

Let us examine a hypothetical family consisting of a father, mother and three sons (five members) where one son decides to separate. Ideally, this son should receive a share equal to $1/4$ or $1/5$ of the estate with the rest of the members retaining $3/4$ $4/5$ of the property and the corporate identity. This latter point is important. The preservation of the identity of family corporations is a central value and in cases of fission the members remaining in the "natal" unit retain the original identity and rights whereas the departing individual established a new unit which is usually relegated to a lower status level if one exists. In Tibet, e.g., "taxpayer" serfs who split become "dü-jung" and in Limi the "throng-pa" become "mi-re". Family corporations, therefore, not only possess estates comprising land and animals but also determine social status and differential rights and obligations. However, in contrast to this expressed "partible" ideal, the covert assumption and behavioral reality is that those members staying with, and maintaining, the family corporation get the major share of the estate. In a case such as that mentioned above, the departing son might receive only $1/8$ of the land and then mostly land of poorer quality. If the father and elder brothers were antagonistic toward him they might well give him less. Litigation, while possible, requires ready capital and political skills normally not possessed by the younger brother and is not initiated often. Consequently, the actual operation of inheritance in Limi and Tibet results in a system in which maintenance of the economic integrity and viability of the perennial corporate family takes precedence over the theoretically equal demand rights of males.

Since inheritance is not likely to generate economic independence for younger brothers, what other alternatives might be available to a son/brother contemplating fission. The obvious avenue for acquiring wealth and status, viz. opening new fields, building up herds and entering into traditional trade, are all unlikely to be perceived as highly viable options.

Most of the plateaus and valleys of Tibet and the northern frontier of Nepal are extremely arid and require adequate and reliable sources of irrigatable water for the sustenance of agriculture. In many areas this is simply not available, but even in areas such as Limi where it is theoretically possible, opening new agriculture fields is still a dubious alternative. The soil in Limi and Tibet is extremely rocky and boulder-strewn and requires an immense effort to clear even a small plot, let alone construct permanent terracing. Furthermore, such newly opened land has far lower productivity than established fields and is difficult to work since it is inevitably far from the main village-field area.

Animal husbandry offers more potential but is also an unlikely alternative. To make herding profitable the neolocal couple (the partitioning brother and his new spouse) would have to devote virtually full time to it during both summer and winter. More critical, however, is the fact that animal herding is extremely risky. Animal mortality does not operate "on the average" and it would not be unusual for a couple's initial (inherited) herd to die, or be decimated during the first winter. A recurrent saying in Limi is that "land doesn't die the way animals do". Yearly fluctuation is great and it is the small herders who are most vulnerable to these climatic and disease vagaries.

Similarly, trade is an unlikely avenue. Traditional trade patterns primarily involved salt and wool, both of which required substantial capital in the form of numerous yak or sheep for transportation. For reasons discussed above, such animals would not be available in sufficient number to enable a young brother to successfully enter traditional trade patterns.

Under what circumstances, then, might younger males perceive the opportunity costs of fission not prohibitive? Traditionally, there are very few indeed. The most important would be when arable land and/or animal herds became available at minimal or no cost. I am referring here to situations where natural calamities

eliminated the membership of one or more family corporations. Epidemics, floods and land-slides would have been the most likely catastrophes. But, since these would have been few and far between, it seems highly unlikely that there would have been frequent occasions when sizable defections from the polyandrous model occurred over and above those prompted by unbearable internal discord and those initiated by the poor.

The consequence of this diachronically was that the estates of corporate family units were for the most part, conserved in-tact over generations, and a land-to-people ratio was maintained that is higher for the upper peasant strata than for the poor since the former would have had less offspring per male (due to polyandry) and thus higher productivity on a per-capita basis. In Tsang, for example, the high strata families (membership in which is hereditary) comprise only 25% of the total families and about 40% of the population but upwards of 60% of the arable land.

Recent political events, however, have created a very different set of opportunity costs. The Chinese acquisition of Tibet in 1959 and the resultant flight of tens of thousands of Tibetans to India has had a major impact on Nepalese border areas such as Limi. The effects of these international events on Limi are far too complicated to discuss in depth here, but some comment must be made because some of the changes have led to increased family fission which has produced an increasing rate of population growth which in turn threatens both the economic and environmental stability of the area.

Traditional trade in Limi was centered on Tibet and the Nepalese and Bhotia people who live in the Humla Valley south of Limi. There was no trade with India and Kathmandu. Post-1959 Chinese policies in Tibet changed this by ending the laissez-faire policy of the traditional Tibetan government under which Limi people could trade in Tibet when, where and with whomever they pleased. The Chinese restricted trade to officially designated Trade Marts and then only with government personnel in government shops. Concomitantly, a new market emerged in India. The presence of thousands of Tibet refugees in India triggered an upsurge of interest in Tibetan culture and as an off-shoot, a demand for Tibetan jewelry and artifacts among Westerners. It also opened a new market for the wooden eating bowls traditionally made in Limi but previously sold entirely in Tibet.

As this trade developed, it very quickly became apparent that profit from the sale of artifacts and jewelry not only was very great but required little initial capital. Such items could be purchased in Tibet at relatively low prices during the summer months and then carried to India and Kathmandu during the winter. Parallel to this, the post-1959 years saw the value of the wooden bowls made in Limi increase greatly as the wealth of the Tibetans in India and Kathmandu increased. In 1976, for example, the profit from the yearly bowl output of one person when converted to the amount of grain it could purchase, was equal to the grain yield from the average amount of land held by lower strata peasant families (the "mi-re").

Another consequence of the Chinese control of Tibet was the sudden influx of inexpensive or even free animals. After 1959, a substantial number of Tibetan nomads from just north of the Limi-Tibet border fled into Nepal bringing their herds of yak and sheep. Since these animals could not survive well in the next ecozone reasons, these nomads generally sold their herds for whatever they could get. Sheep, for example, sold at that time for 12-13 rupees (today an adult sheep in Limi sells for almost three hundred rupees). Animals that could not be sold were often simply abandoned.

This opportunity enabled a number of younger brothers to acquire enough animals (e.g. 30-40 sheep and 5-6 yaks) so as to reduce the opportunity costs of going it alone and lessen the threat of a bad winter bankrupting them. It also greatly expanded the size of the Limi herds and is an important factor in the current economic success of the area.

Given these new opportunities, it is not surprising to find that roughly 25% of the younger brothers in Tsang actually left their natal family corporations and established neolocal independent family units during the period from 1960-1970. This defection brought females into the reproductive pool who otherwise would have been excluded and is playing a major role in stimulating noticeable population growth. If this pattern continues or becomes exacerbated, fraternal polyandry could be further reduced and Limi could very well undergo population growth which would seriously alter its delicate economic-environmental balance and result in serious environmental degradation. There is already some evidence that this is occurring with respect to the pasture areas and forest land. The real

question concerning the future of Limi, then, is whether this is a temporary expansion of population due to the short term emergence of new resources and opportunities, or whether it is the beginning of a new pattern of marriage, family and reproduction. If it is the latter, then the economic future of Limi is dubious indeed.

CONCLUSION

A basic goal for anthropologists working in the Himalayas in the coming years must be to provide data regarding the manner in which different populations are socially and ecologically adapted to their environments and the dynamics of the change process they are undergoing. An understanding of these is a prerequisite for the satisfactory planning of optimum development with sustained yields since developmental planning must take into account not only "technical" feasibility but also "social-cultural" feasibility. The complex nature of the interplay of social, economic and ecological variables in the on-going process of change and adaptation have been briefly illustrated in this paper via a discussion of the conditions under which fraternal polyandry is selected and rejected and the consequences of its rejection for population growth and, ultimately, the quality of life and environment.

With respect to polyandry, this paper has argued that whenever resources or opportunities become available which do not require heavy input of ready capital and which, for an individual, holds open the promise of becoming a person of substance and standing in the community, younger siblings will defect from polyandrous marriage in significant numbers. Population growth, therefore, will increase since more females of reproductive age will be placed in roles of high conception risk. Traditionally, this functioned as a type of negative feedback pattern which could quickly expand or contract population growth depending on type and availability of productive resources. Limi is currently undergoing the expansion phase of this cycle and, as mentioned above, the critical question is whether the fissiparous tendencies will become exacerbated with even further new inputs. Tourism, e.g., looms as one such conceivable new input since the completion of the STOL airport at Simikot reduces the trip to Limi by about 10 days. Tourism in sizable numbers could stimulate further defections from polyandry since it would create new jobs (such as cook, porter, guide) that

require no capital but could be profitable. While other projected advantages of tourism in areas such as Limi might override the negative consequence of increased population growth, if it is to be encouraged, plans should be developed to accommodate the anticipated population increase. For example, efforts could be made to increase the amount of cultivated agricultural land by improving and expanding irrigation canals, or local personnel could be trained in family planning methods. The latter is not far fetched for there is considerable interest in Limi in regulating the number and birth-space of children.

In conclusion, this paper has tried to illustrate, very cursorily to be sure, the efficacy of using decision-making and micro-systems approaches and has tried to illustrate how such a combined approach is efficacious for understanding on-going social dynamics and for permitting informed assessment of the consequences of planned and unplanned system inputs.

FOOTNOTES

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2. See Goldstein, 1975 for an overview of Limi Panchayat.
3. The discrepancy between 20 polyandrous marriages and 23 females is explained by the presence of three marriages which consist of two or more brothers and two wives.
4. These averages are somewhat lower than the total average in Tsang, 3.3, because a number of dubious cases (with respect to polyandry vs. monogamy) have been excluded.
5. There is however, no cultural prohibition of polygyny and it does occur in Tibetan society, albeit infrequently.

6. See Goldstein, 1971, 74, 75, 76 for more detailed discussions of polyandry.

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