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Catherine Panter-Brick
Oxford University

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Catherine Panter-Brick
Department of Biological Anthropology
Oxford University

This paper describes patterns of childcare in a Tamang community in north-west Nepal (Salme village, Nuwakot district). The Tamang provide an excellent opportunity to examine howwomen's work outside the home may affect childcare strategies, and the impact that parental behavior may have on child well- being. Tamang women make a substantial contribution to the household economy (Acharya and Bennett, 1981), devoting a considerable portion of their time to outdoor subsistence work. Long absences from home pose special problems for children who are left behind by their working mothers.

An assessment of this situation must address three main questions: first, how much actual work will women do outside the home during the child-bearing period; second, how do women organize their childcare responsibilities, and in particular, do they take children to the work-place; third, to what extent do existing childcare strategies have positive or negative consequences for child health.

The workloads of Tamang women during pregnancy and lactation, and the combination of ecological, demographic, and social factors which constrain or facilitate childcare, have been described elsewhere (Panter-Brick, 1989). The impact of women's work on nursing duration and frequency has also been examined in detail (Panter-Brick, 1991), while a more specific examination of childcare patterns in relation to infant nutritional status and mortality is in preparation. This paper integrates existing findings into an overview of women's work, childcare strategies, and child well-being. It presents a subset of data summarizing Tamang women's activities, and several case studies on Tamang children, using anthropometric and demographic data as indicators of child health.

Work and childcare patterns

The Tamang are agro-pastoralists settled in the foothills of the Himalaya (Toffin, 1976). Relatively isolated and self- sufficient, the community of Salme is a large, nucleated village of 1540 people who live on a steep mountainside, rising from 1350 to 3800 metres in altitude. Villagers face the challenges of difficult terrain, poor soil productivity, small and dispersed fields; fortunately, they can draw upon abundant local resources in land, cattle, meadows and forests. Whereas other communities in Nepal are constrained by shortages of land and forested areas, Salme families are, in the main, limited by manpower available within the household. Tamang families prefer to live in small nuclear or stem families (Fricke, 1986), which restricts the size of the adult workforce, although there is a pool of labor available at the village level.

Labor constraints operate in different ways according to the time of year. In the winter, Tamang families have light agricultural workloads but cannot afford to lag behind in their tasks. Men and women have many outdoor subsistence responsibilities: several crops are planted at different altitudes to ensure multiple harvests over the course of the year; cattle are taken to graze and are penned at night in fields to provide dung and urine for soil fertilization; fodder and wood for fuel and timber must be cut. To minimize travel time, villagers will stay overnight in mobile cattle shelters on the mountainside. During the monsoon, the focus is shifted entirely to urgent agricultural tasks: finger-millet and rice are transplanted on mid- and low-altitude fields with the onset of rains. The Tamang manage to be self-sufficient in foods, provided families keep to a tightly coordinated timetable during the year, and

work long hours in the monsoon. Both conditions require the full employment of a household's labor force, and high mobility on the mountainside.

Women continue to work during pregnancy until the time of delivery. After a brief period of seclusion (one week), they resume their habitual activities, carrying the baby on their backs to the place of work. Childcare responsibilities do not excuse a woman from her work in subsistence. Indeed, Tamang communities are said to value a woman's capacity for physical work over and above her potential for bearing children (Acharya and Bennett, 1981). Although fathers and grandparents make a contribution to childcare, the mother assumes the main responsibility for the child, at least while it is breastfed, because family members will separate during the day-time to work in different areas on the mountainside. The potential conflict between a woman's responsibilities in subsistence work and childcare merits consideration, since childbearing can make economic activities more difficult, while the need to work restricts the time for maternal care. While Tamang women have light workloads in the winter, they have very little spare time during the monsoon.

Table 1 shows the time spent by Tamang women in major subsistence and household activities in two contrasting seasons of the year, comparing non-childbearing and pregnant/lactating women (time-allocation study from Panter-Brick, 1987). In late winter (January-March), pregnant/lactating mothers spent an average of 3.3 hours/day in outdoor subsistence activities, including agriculture, husbandry, forest work and travel, as compared to 5.4 hours/day for other women. The difference of 2.1 hours/day is significant, representing time that mothers will spend indoors in household and family-related tasks. In contrast, during the monsoon season (July-September) there is a striking similarity of work patterns between women, with both groups devoting 8.2 hours to subsistence effort. Thus mothers spend less time outside the home in the winter, when the demand for labor is low, but work as hard as other women in the monsoon, when tasks essential to the household's economic survival must be completed urgently (Panter-Brick, 1989).

Child well-being

Does the Tamang mother's working put her child at risk? As Gubhaju suggested in 1985, on the basis of overall mortality rates from the Nepal Fertility Survey (NFS, 1976), women's farm work in the hills "probably does not interfere with their caring for an infant". Infants are carried everywhere by the mother, and breastfed on demand well into their second year. In the case of the Tamang, flexible work schedules and the integration of nursing with the rest periods normally taken in the fields ensure that the health of young infants is not prejudiced by their mother's activity (Panter-Brick, 1991). However, since women leave older children behind, toddlers over 3 years of age may be deprived of adequate attention. We can expect the monsoon to pose greater risks to the health of these children, both because high temperatures and humidity make for a highly unsanitary environment, and because mothers are busy in the fields and able to devote little time to care for children left at home.

An example may help to illustrate this situation. In July 1983, two mothers left home as usual around 8.30 AM, to transplant finger-millet in the fields. One carried a 7 month- old baby, while the other had left her 34 month-old child in the village, with leftovers from the morning meal. There were several reasons why the older child was not taken along. The fields were at some distance from the village, and the boy, weighing 7.7 kg, was considered too heavy to carry. The mother knew she would return home with a load of grasses for the water- buffalo. She was also 6 months pregnant, and had recently weaned the child. To reach the fields, the women had to negotiate a treacherous section of washed-out trail and a river in full spate, swollen by the monsoon rains. Since the wooden bridge had been carried away, they crossed the river by stepping from stone to stone and wading thigh-high through its waters. The women worked all day, ate in the fields, and returned home at about 7 pm; the 3 year-old child was found waiting alone by the door of the house (which was locked), his older siblings scattered about the village and his father still at work. The mother rekindled the fire, smoked awhile to rest from the journey, then settled down to prepare a meal for herself and her family. By the time dinner was ready the child was asleep, and missed the evening meal, an event often observed during the monsoon by the nutritionist working in Salme (Koppert, 1988). Thus a mother's absence from home has consequences for both the quantity and quality of foods eaten by older children. The reduced frequency of cooked meals and the tardiness of some evening meals limits the amount a small child can

eat, especially where staple foods consist of a bulky cereal gruel with high cellulose content and low energy density. Moreover, foods leftover for the child to eat in the daytime are easily contaminated by bacteria, increasing chances of recurrent diarrhoea. The age-groups showing the poorest nutritional status in the Salme community are the children 3 to 6 years of age (Koppert, 1988).

Given their marginal food intakes and recurrent illnesses, it is not surprising that some children show slow growth rates, especially in the monsoon (Koppert, 1988; Nabarro, 1984). In 1983, I undertook monthly anthropometric measurements of Salme children under 5 years of age. Data for three children of the same age (born in the year/month of T: pre/asoj, September 1980), are shown in Table 2 for the month of August. The first child is the above-mentioned 3-year old, who was neglected by his mother once she became pregnant. He had lost 400g of body weight since July, and showed clear signs of clinical malnutrition (an unusual case in Salme) coupled with severe growth stunting (a common occurrence). The second boy, the fifth child of a family with well-spaced births, was fairly short in stature, but in good physical health. The girl, the tallest among them, was an only child who benefited from her mother's undivided attention; however, there was serious concern for her health, because she was experiencing such acute diarrhoea and heavy worm infestation that her anus was severely inflamed. Five years later, when I returned to Salme, all three children were alive and well. The first boy had not caught up in size, and the growth differentials between the children were maintained. It is clear that the recurrent stresses of the monsoon season, which include adverse environmental conditions and reduced maternal attention, contribute to the development of the short, stout adult physique typical of the Tamang.

Mortality rates also increase dramatically during the rainy season, the major causes of deaths being respiratory infections and diarrhoea. In Salme, chest infections in the winter, diarrhoea (T: wakne fiakne) in the summer, and general fevers (T: kirpa mang) were reported as the main natural causes of child mortality, and local descriptions of children who died as "emaciated" (T: kharbi) or "swollen" (T: tangbi) would in many cases implicate malnutrition (Koppert, 1988:205-212). Supernatural causes were also cited, specifically an evil spirit (T: mhang) or poison (T: men); Holmberg (this issue) provides a vivid illustration of the folklore surrounding a child-devouring demon.

Death rates for Salme are high: 17.5% for 0-1 year-olds and 9.6% for 1-5 year olds, totalling 27.1% for all children under age five (Table 3). Infancy is the most critical period (2/3rd of deaths from 0-5 years occur in the first year of life); this applied to Nepal as a whole, and is primarily a result of unhygienic living conditions and an absence of medical treatment. Interestingly, mortality is sensitive to the length of previous birth interval. Tamang women average remarkably long birth- spacing (37.7 months in Salme), mostly because nursing 1 and 2 year-olds at the place of work will prolong amenorrhoea. Death rates for children under five decrease significantly from 29.6% to 18.5% when birth intervals are greater than 36 months; this is due to a two-fold drop in infant mortality. The 1-5 year-old death rates are unaffected, probably because only the "fittest" children have survived the period of infancy.

The reasons why long birth interval reduces infant mortality are certainly complex (Hobcraft et al, 1985; Gubhaju, 1986). Another case study illustrates why long birth intervals are beneficial for children and facilitate the integration of mother's work and childcare responsibilities. Two brothers, Purne and Rikta, were born in January 1979 and September 1982 (the year/month of T:luk/pus and khi/asoj). When Rikta was born, Purne was 33 months old, the age at which most mothers wean their children. In this case, a grandmother took charge of the older boy, offering him her dry breasts as a temporary consolation for the loss of his mother's milk. Had the birth interval been much shorter, the older sibling would have been weaned at an earlier age. In this case, even without the help of other caretakers, it was relatively easy for the mother to cope with both a newborn and a 3 year-old: it was too cumbersome to take both children along to the place of work, but the latter was considered old enough to be left behind. During the winter, when family members are geographically dispersed and women work outdoors for relatively short periods of time, the mother often chose to leave the two brothers behind in the cattle shelter while she carried a load of grain, fodder or firewood. The youngest was secured in a bamboo basket, and the older child left by his side (see photograph on the cover of this issue).

In conclusion, there are a number of considerations which influence Tamang childcare practices. The most important is the priority given to subsistence work and the nature of women's tasks. Some activities facilitate childcare, eg watching cattle graze, while others which make it difficult, eg carrying

a heavy load. Moreover, seasonal variation in work patterns influence the duration of a mother's absence from home. In the winter, workloads are light, and although family members cover many different areas of the mountainside, travel time is minimized with the use of mobile cattle shelters. In the monsoon, workloads are heavy, requiring a full day's work each day in the fields, and the rains make travel particularly difficult. Another major consideration for women is the transportability of children, which varies directly with their age and body weight. Tamang mothers are well able to care for infants at the workplace, but increasingly leave older children behind, who are both too heavy to carry and too young to walk. Caretakers other than the mother (siblings, parents, neighbors) are not always available, since family units are small, and adults are dispersed or busy with urgent tasks. Three to six year-olds are left behind with minimal supervision; they lose weight and their growth slows down as a result of repeated nutritional and infectious stresses during the monsoon. However, they have already survived the critical period of infancy, when the majority of deaths occur. While there is reason to be concerned for the health of Tamang children, for infants it is more directly a question of survival, whereas for toddlers, the issue becomes one of nutritional well-being. Clearly, spacing births over three year-intervals is essential to Tamang childcare practices.

A radically different childcare strategy from the one described for the Tamang is adopted by Tibetans living in Nepal at high altitude. Working mothers leave even young babies with other caretakers, although wealthier women stay at home as the household can cope without their labor. This practice is one reason for the very high infant and child mortality rates recorded for this group (Levine, 1987): 22.6% for 0-1 year olds and 31.7% children overall, as compared with Tamang rates of 17.5% and 27.1% (Table 3). Health risks to both young and older children would increase from a reduced opportunity to breast- feed, and the contamination of supplementary foods.

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Table 1: **Tamang women's work in the winter and the monsoon**

Average time spent in outdoor subsistence and indoor household activities by non-childbearing (N=19) and pregnant/lactating women (N=15 in winter, 32 in monsoon)

Women	Non-childbearing Hrs/day	Pregnant/Lactating Hrs/day	DIFF. Hrs
	LATE WINTER SEASON		
Agriculture	1.3	.7	.6
Husbandry	1.0	.7	.3
Forest-work	.3	.2	.1
Travel	1.4	.8	.6
Work outdoors	4.1	2.5	1.6
Rest	1.4	.8	.6
TOTAL OUTDOORS	**5.4**	**3.3**	**2.1**
Domestic work	2.7	3.7	-1.0
Family care	.8	1.5	-.7
Walk about	.2	.2	.0
Work indoors	3.7	5.4	-1.7
Rest	2.3	2.7	-.4
TOTAL INDOORS	**6.0**	**8.1**	**-2.1**
Total observed	11.4	11.4	.0
	MONSOON SEASON		
Agriculture	5.1	4.9	.2
Husbandry	.7	.3	.4
Forest-work	.0	.0	.0
Travel	1.0	1.0	.0
Work outdoors	6.7	6.3	.4
Rest	1.5	1.9	-.4
TOTAL OUTDOORS	**8.2**	**8.2**	**.0**
Domestic	1.9	1.7	.2
Family care	.7	1.1	-.4
Walk about	.2	.1	.1
Work indoors	2.8	2.9	-.1
Rest	1.7	1.6	.1
TOTAL INDOORS	**4.5**	**4.5**	**-.1**
Total observed	12.7	12.7	.0

A description of tasks is given in Panter-Brick (1987; 1989).

Table 2: **Growth differentials of three Tamang 34 month-olds in the monsoon** (Salme, August 1983)

	Sex	Weight kg	Height cm	Weight/ Height	Arm circum-ference cm
		Tamang children mentioned in text:			
1.	Boy	7.3	70.5	0.10	12.4
2.	Boy	11.1	79.1	0.14	15.3
3.	Girl	12.5	85.3	0.15	15.7
		Mean (SD) of all measured 34 months-old in Salme:			
	N=8	8.0	80.4	0.13	13.6
		(1.6)	(5.1)	(0.03)	(1.3)

Table 3: **Mortality for Tamang children under five years of age Deaths per 100 live births (%)**

	Infant 0-1 yr	Child 1-5 yr	Overall 0-5 yr
Tamang (Salme)[1]	17.5	9.6	27.1
Birth interval<36 mth	21.1	8.5	29.6
Birth interval>36 mth	9.1	9.4	18.5
Nepal (NFS 1976)[2]	16.6	11.2	25.9
Tibetans[3] (Ladog in Humla)	22.6	10.0	31.7

[1]Koppert (1988)

[2]Hobcraft et al (1984)

[3]Levine (1987)