Abstract

This paper extends the author's earlier research on the proportions of the sexes among the juvenile population in rural India. In India, boys predominate in the juvenile population of the Northwest, but numbers of boys and girls are quite equal in the South and East. Here, census data, materials on mortality among children, and ethnographic data are examined for Pakistan (to India's northwest) and Bangladesh (to her east) and compared with findings on India. It is demonstrated that patterns in Pakistan bear many similarities to northwestern India, as those in Bangladesh to do eastern India. Nevertheless, some interesting differences are revealed which help shed light on the question of sex ratios on the entire subcontinent.

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Son Preference, Daughter Neglect, and Juvenile Sex Ratios: Pakistan and Bangladesh Compared

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Working Paper #30
August 1983

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Introduction

Culture shapes the size and composition of population everywhere. How it does so is a subject that has attracted attention from anthropologists (Lorimer et al. 1954; Spooner 1972; Polgar 1975; Nag 1962, 1973; Marshall and Polgar 1976). Sex ratios in a population are an important source of data which can illuminate sociocultural processes and problems related to gender. Unbalanced sex ratios can mean several things including sex-differential patterns of migration, mortality, or biased census records. It is never easy to distinguish the causes of sex ratio patterns; but considering several types of data, such as historic records or comparative ethnographic case studies, helps explain the factors behind the numbers.

The Northwest plains region of India stands out as a region characterized by high (preponderantly male) juvenile sex ratios whereas the South and East are areas of equal sex ratios.[1] Juvenile sex ratios above what roughly can be accepted as "normal" for district-size populations (even for the delimited juvenile population), that is, above 104.9, are found in one-third of India's rural districts, exceeding one hundred in number. These districts, forming a triangular area from Gujarat in the west to Bihar in the east, constitute a striking regional contrast between the Northwest and the South and East in the juvenile population. Juvenile sex ratios in India, according to the 1961 Census data, range from a high of 118.0 in Rajasthan's Jaisalmer district to a low of 90.0 in Orissa's Koraput district. Sopher (1980) and I have hypothesized that the division in India between the high sex ratio area in the Northwest and the rest of India constitutes a "great divide" between the cultural "masculinism" of the wider region stretching from Northwest India to Pakistan and on toward the Near East; while South and East India lead toward the cultural "feminism" that generally characterizes Southeast Asia. Recently Dyson and Moore (1983) have also explored the North-South dichotomy in terms of regional kinship, culture, and demography. They have urged that studies of countries beyond India be done for comparative purposes.

This paper looks at juvenile sex ratios in two countries bordering on India: Pakistan and Bangladesh. There are advantages in looking toward Pakistan and Bangladesh since these countries are, respectively, adjacent to India's high sex ratio area in the Northwest and her low sex ratio area in the East.

Sex Ratios and Mortality in India

Background

In The Endangered Sex (Miller 1981), I used a combination of data to study unbalanced sex ratios among children under ten years of age in rural India. To understand the reason for skewed juvenile sex ratios in rural India, I first examined some of the available data on sex ratios throughout the world and explored how culture acts to affect sex ratios, especially among children. I then focused on historic data for nineteenth-century India in order to investigate the connection between modern sex ratios in India and

the outright female infanticide practiced during that period. I found a regional and social pattern of female infanticide; it was most practiced in the Northwest and among the higher castes there. Next, I analyzed available data on sex ratio imbalances in twentieth-century India with special attention to sex ratios for the rural population under ten years of age. Here, too, I found a regional and social pattern very similar to that of the earlier practice of outright female infanticide. There appears to be a subtle transformation of outright infanticide into systematic neglect of girl children.

In the rest of the study I inquired into how and why the proportions of the sexes among juveniles in rural North India become imbalanced. The immediate mechanisms examined include the intra-familial distribution of critical resources such as food, medical care, and love. In attempting to explain the perseverance of the system through time, I proposed that, from an etic (analyst's) perspective, a low demand for female agricultural labor in areas of dry-field plough cultivation in the Northwest would create a devaluation of daughters, whereas the high demand for female labor in rice-cultivating areas would add to the value of daughters. Devaluation would promote neglect and higher death rates for daughters in the North as compared to the South. I juxtaposed the etic perspective with the emic (insider's) view which evaluates the variable burden or blessing imposed by the birth of daughters on the family according to the type of marriage payments prevailing: in the North large dowries must be paid for the marriage of daughters, especially in the landed classes, whereas in the South small dowries or even bridewealth are the common transaction. Other factors, such as the need for sons as heirs of family property or to perform ancestral rites, promote intense son preference which, though all-India in distribution, is much stronger in the Northwest. Son preference is the compelling force in the entire system, with daughter neglect the necessary concomitant result.

Skewed Sex Ratios and Mortality in India

For studying sex-differential death rates of children in rural India, the best data would be high quality mortality statistics for the nation based on a complete census of every village. We are far from having such data for any country in the developing world and are thus forced either to not study the problem because there are no "good" data or to resort to other kinds of data. I chose the latter option. My basic data were derived from 1961 Census of India figures on the numbers of boys and girls recorded in the rural populations of all 323 rural districts in the nation at that time. Others before me had looked at state-level sex ratios for the total population (Visaria 1961; Kelly 1975). My analysis of juvenile rural sex ratios by district corroborated what they had found: a distinct scarcity of girls relative to boys in the northern plains region and a more equal number of boys and girls in the South and East.

Visaria (1961) attributed the northern imbalance to higher rates of female than male mortality--without separating juvenile from adult sex ratios, thus allowing maternal mortality to be a prime suspect. Kelly (1975) narrowed the problem to children in her analysis of Punjab and Kerala and

argued that most of the North Indian sex ratio imbalance is already present in the juvenile years and is caused by higher mortality of girls. Kelly relied on data from several local studies that had gathered demographic information over a period of many years and which revealed distinctly higher mortality rates in the northern state of Punjab and more equal rates in the southern state of Kerala.

Following the work of Visaria and Kelly on India's regional demography and Sopher's work on regional cultures of India (1980), I mapped the district-level juvenile sex ratio data for 1961 and also looked at independent studies of childhood mortality. The picture that emerges from the various data sources is consistent. The scarcity of girls reported in the census corresponds with longitudinal evidence of higher mortality for girls in the North: where juvenile sex ratios are high, mortality data show girls to be disadvantaged.

Sex ratio data, nevertheless, are only indirect evidence of sex-differential mortality; and they possess weaknesses that high-quality, direct mortality data would not. Criticisms of using census data on sex ratios to understand Indian mortality fall into two general categories: first, those which deny the usefulness of sex ratio data because of the underenumeration problem; second, those which deny their validity because of the age misreporting problem. I will discuss each of these in turn.

Since the time of the earliest censuses of India, carried out in the nineteenth century, underenumeration of females has been invoked as the cause of the reported scarcity of females in North India (see the review of this history in Miller 1981:58-67). Ink continues to be spilled over the question, even though it seems that Visaria should have settled the dispute for all time: in discussing the results of the 1951 and 1961 census post-enumeration checks, he concludes that, while females are generally more often underenumerated than males, "the estimated differential in the degree of undercount cannot explain the reported excess of males in the various states or in India" (Visaria 1961:15). He provides percentages of the underenumerated population by sex and the unadjusted and adjusted sex ratios of the population for various regions of India in 1951. The differences in all cases are slight, and there is no greater error in the counting of females in the North than in other regions.

Furthermore, analysis of the population under ten years of age frees us to a large extent from this criticism. Underenumeration of females in India, according to Schwartzberg (1981), is a "normative error," a systematic underreporting created by cultural values fostering reluctance to report the existence of daughters. Although I have never read a detailed explanation of the normative error that might be involved in this case, I assume it to be that families are unwilling to report nubile daughters because they soon should be married, and a family may be delaying the marriage arrangements in order to save for a required dowry. Female children under the age of ten have not yet attained the age where such worry would begin to distort statistics.

Errors of the second type, systematic age misreporting, are broadly separable into two categories (following Edmonston 1981): digital preferences and constant age bias. Digital preferences refer to the reporting of children's ages at selected terminal digits, often zeros. Constant age bias refers to reporting which shifts the age distribution of the population up or down. The latter is more of a concern here, because there is no evidence that male/female digital preferences vary according to sex.

Constant age bias patterns for reporting of males and females in South Asia is a problem that merits detailed field analysis. As with underenumeration, age misreporting for females can result in census data biased by a "normative error" that is particularly strong around the time of a daughter's marriage. The hypothesized patterns are: pre-menarche daughters would be reported as younger than they are since they are still classified as girls; post-menarche daughters unmarried and still living at home also would be aged downward to avoid admitting failure at arranging a marriage and possibly contributing to further difficulties in arranging an aging daughter's marriage; a newly married bride, resident in her husband's home, is likely to be reported as younger than she actually is (since she was said to be younger when marriage arrangements were made) or as older (since she is now classified as a married woman), especially if she has borne children.

The several possibilities for systematic age misreporting of females in South Asia have led some researchers to abandon the age data as useless, while others propose the imputed weakness of the data as an explanation for non-western or otherwise unexpected patterns that the data exhibit. In the adult age-levels, misreporting may be an unsurmountable problem, but it is not so for the population under the age of ten. The cultural bias toward age misreporting of daughters would have the effect of putting females aged 10-14 into the 5-9 year-old category; yet such downward heaping cannot be demonstrated with population data. There is no excess of girls in the 5-9 year-old category, although such an excess would be expected according to the age misreporting hypothesis.

Additionally, even stronger evidence of the general accuracy of the juvenile sex ratio data comes from longitudinal studies that have gathered data on juvenile populations. These studies corroborate the sex ratio data: in the North as many girls as boys simply are not alive to be counted. The careful censuses of the Harvard-directed Khanna study, carried out in seven villages of Ludhiana district in the Punjab of North India over a period of fourteen years, clearly show that boys outnumber girls and that girls' death rates are much higher than boys' (Wyon and Gordon 1971). To say that the North Indian census data on the juvenile population are of poor quality because the sex ratio is imbalanced is to deny that the scarcity of girls is a fact. To try to "correct" the sex ratio through sophisticated demographic manipulations is to distort the data.

There is a growing group of scholars, Indian and non-Indian, from a variety of disciplines including anthropology, economics, demography, and sociology, who agree that North Indian daughters are severely handicapped in their life chances relative to sons. Several scholars early on suggested

higher mortality rates for females than males in the overall population of India (Visaria 1961; Bardhan 1974; Dandekar 1975), and also among children (Kelly 1975; Wyon and Gordon 1971). Using other data sets, scholars from several disciplines now have come to the same conclusion (Rosenzweig and Schultz 1982; Simmons 1982; Dyson and Moore 1982; Cowan n.d.). Nationwide sex ratio data, sample survey data on childhood mortality, longitudinal population records in several locations, and ethnographic evidence all point to inequalities in mortality as the prime cause of unbalanced sex ratios. Like a quilt made up of dozens of seemingly unrelated bits of cloth, a coherent and unmistakable pattern emerges when the pieces of evidence are stitched together.

Juvenile Sex Ratios and Mortality in Pakistan and Bangladesh

Sex Ratio Data

My earlier work on juvenile sex ratios in rural India was based on the 1961 Census of India since that census was the most complete one available to me at the time of my research (the 1971 Census of India did not have complete district-wise data on female labor participation, an important part of the analysis). Administered by a different nation, the 1961 Census of Pakistan will provide an important source of data on age patterns in two countries adjacent to India, Pakistan and Bangladesh.[2] Comparison of juvenile sex ratios by district in the Indian Census and the Pakistan Census will inform us as to whether the juvenile sex ratio patterns of India cross over the borders and thus imply broader cultural bases than are apparent in Indian culture. In comparison to predominantly Hindu India, examination of juvenile sex ratios in Pakistan and Bangladesh, both predominantly Muslim countries, will illuminate the demographic role that religion might play.

The juvenile sex ratios of Pakistan and Bangladesh are very different (Table 1). In the 45 districts for which data are available in Pakistan, the range extends from a low of 100.4 in Bannu District to a high of 117.0 in Sibi District. For the seventeen districts of Bangladesh, the range extends from a low of 99.7 in Bogra District to a high of 105.1 in Noakhali district. The sex ratios of Pakistan are very similar to those of districts in neighboring Indian states, Rajasthan and Punjab, while the sex ratios of Bangladesh are very similar to those of districts in the neighboring Indian state of West Bengal.

There are no regional contrasts among juvenile sex ratios within Bangladesh; variation within the country is narrow with only one district having a sex ratio over the "normal" limit of 104.9--Noakhali at 105.1.[3] Within Pakistan, the variation is greater with eight districts out of the total forty-five districts having sex ratios under 104.9: Dera Ismail Khan (100.4), Zhob (102.8), Rawalpindi (103.1), Tatta (104.3), Chagai (104.4), and Mardan and Campbellpore (104.7). Thirty-seven districts, more than eighty percent, have "suspicious" sex ratios. There is a regional concentration of districts in Pakistan with the highest sex ratios (between 111.4 and 118.0) in the central area of Baluchistan and Sind, while districts with the next

highest sex ratios (between 104.9 and 111.3) are clustered in the northern part of the country, including northern Baluchistan, Punjab and the Northwest Frontier Provinces.

Mortality Data

In this section I bring together scattered evidence that exists on juvenile mortality by sex in the two countries to assess the relationships between the sex ratio patterns and mortality. Available mortality studies refer to more recent times while the census data are from the 1960s; definitive conclusions are thus curtailed.

There are little available data on childhood mortality by sex for Pakistan.[4] Rukanuddin's study (1967) of sex ratios in Pakistan based on the Population Growth Estimation (PGE) Project, a country-wide sample survey which began in 1962, is still the most detailed analysis available for the entire country. The findings of the PGE are discussed below. First we will look at the results of an in-depth report on one locality: Ahmad's study (1979) in Peshawar district which is a major recent source of data.

Ahmad conducted a survey of 2,070 households in 22 villages. Data were gathered on family fertility, mortality, health care, and family planning practices. For our purposes, the disadvantage of family mortality data gathered through interviews with heads of household is strong: retrospective data are not nearly as accurate as surveillance data and tend to be heavily sex biased in South Asia (Miller 1981:172-173; D'Souza and Chen 1980:258). The sex bias results from sharper memory of sons born who have died compared to weaker memory of daughters born who have died.

Peshawar district had a 1961 juvenile sex ratio of 109.9, which is about mid-range for Pakistan. Ahmad found a definite shortage of females in the survey population at all ages, but especially for the years 10-14, where the sex ratio is 128.7 (1979:148). The overall sex ratio of the survey population was 108.4, that of children 0-4 years was 96.6, and that of children 5-9 years was 111.5. The author discusses the possibility of age misreporting and underenumeration and concludes that it is most probable that the reported deficit of females is due to a genuine deficit of females rather than misreporting. Informal checks revealed no omissions of persons in spite of the reluctance of male heads of households to name female members. Ahmad's retrospective mortality data, however, revealed no sex differences in mortality. The author addresses the mortality data in a rather uncertain manner, sometimes seeming to favor the under-reporting of female deaths, other times resorting to underenumeration of living females.

My interpretation of Ahmad's Peshawar data is that there are serious sex differentials in juvenile mortality, approaching but not equalling the North Indian pattern in intensity. Data reported in Ahmad (1977:277) on the male/-female ratios of various kinds of medical patients speak to this possibility: 2.01 (males per 1 female) treated at a hospital, 1.21 treated by a doctor, 1.49 treated by indigenous practitioners, 1.42 visited shrines, .89 treated at a health center, and .20 not treated. (The female-dominant ratio for

treatment at a health center largely involved maternity care.) It is obvious that the bias toward males in health care allocation must be influential in promoting their life chances relative to females.

In addition to Ahmad, Rukanuddin (1967), in an analysis of earlier nationwide data on Pakistan, found the same dramatic masculinization of the juvenile population in the 5-9 year category. He comments that:

> The sudden increase in males in the age group 5-9 . . . indicates that male babies may be cared for more than their sisters which ultimately would have adversely affected female survival and/or female children are highly underenumerated compared to males. However, the . . . Pakistan PGE age-specific death rates for the 5-9 age group indicate that, unlike universal experience, females face higher risks of death in this age group (1967:163).

The PGE data show strong contrasts between age-specific mortality rates for boys and girls in Pakistan and Bangladesh. The 1962 male/female ratio of death for 1-4 year-olds was 95.0 (male deaths per 100 female deaths) in Pakistan and 107.2 (male deaths per 100 female deaths) in Bangladesh. Among 5-9 year-olds, the ratios were 57.9 in Pakistan and 125.0 in Bangladesh.

Bangladesh is the scene of much active demographic research, but most of it is focused on fertility rather than mortality. Furthermore, studies of mortality have paid little attention to juvenile mortality patterns or to sex differentials in mortality. There are longitudinal population surveillances that have been maintained for several years, the most famous in Matlab thana of Comilla district and another in Companiganj thana of Noakhali district. D'Souza and Chen (1980) and Chen, Huq, and D'Souza (1981) have published analyses of childhood mortality in Bangladesh on the basis of the Matlab data.

The ICDDRB (International Centre for Diarrhoeal Disease Research in Bangladesh, formerly the Cholera Research Laboratory) has maintained a system of demographic surveillance in Matlab thana since 1963 (D'Souza and Chen 1980) which covers 228 villages comprising a (1974) population of 263,000. Cross-sectional censuses are regularly updated, and there is a continuous registration of vital events such as marriages, deaths, births, and migration. Village workers visit each house weekly to inquire about vital events. As in the Harvard Khanna study of North India, this system results in very high quality data on births and deaths in the local population. Comilla district is in many ways representative of Bangladesh: it has high population density, high percentages of landlessness, and is largely agricultural. Comilla, however, has received massive foreign aid inputs since the 1950s and was the showcase district of agricultural development and rural cooperatives. Matlab thana is the site of above-average health care provided by the ICDDRB-sponsored clinic there.

D'Souza and Chen present the Matlab mortality data for the years 1974-77. The data show that overall female death rates are generally higher than those of males. In narrowing the focus to childhood deaths, the authors look at

children ages 1-4 years and state: "Higher mortality rates are registered for females than males at each age. The excess female mortality rate for the age group 1-4 years is highly significant" (1980:261). Discounting the data for the crisis years 1974 and 1975, since the overall level of death rates was exceptional during these years and thus "the sex differentials found are not necessarily reflective of normal periods" (1980:259), let us compare the sex differentials among 1-4 year-olds with other South Asian data (Table 2).

Very high sex differentials in childhood mortality for the two Punjab sites in North India (the Khanna study and the Narangwal study) contrast markedly with the Vellore data from South India which show a relatively low differential. The Matlab data from Bangladesh fall in between with a differential that, while marked, is not as great as that of the North Indian data. Among three-year-olds, the 1976-77 death rate for males was 16.5 deaths per 1,000 population; for females, 26.05; and for both sexes combined, 21.15. Nevertheless, it is important to mention that the aggregate data for 1-4 year-olds from Matlab mask a very high differential that occurs around the age of 3 when, according to D'Souza and Chen, "female death rates are 46 to 53 percent higher than the corresponding male rate" (1980:261). But even that peak differential during the early childhood years does not match the differential found in the Punjab for the aggregated 1-4 age group.

Thus, the one dependable published source of childhood mortality statistics for Bangladesh reveal a distinct survival disadvantage for girls--although not as severe as in North India. The next question that arises is: what is the relationship of these mortality data with the 1961 sex ratio data which are quite balanced? Several possible answers come to mind. First, there is a possible historic factor: that two decades ago, sex ratios among children were more balanced than they are now. Others have pointed to rising masculinity through time in India (Dandekar 1975) and the same change could have occurred in Bangladesh. This possibility makes sense for economic and social reasons, too, which are discussed below. Until the 1981 census data for various age categories are available (perhaps later in 1983), we can say nothing about present sex ratios among children and the hypothesized change since 1961.

Another possible explanation that must be considered is errors in the 1961 census data. Either boys are under-reported, girls over-reported, or age misreporting is putting more girls in the juvenile category. Islam, an anthropologist, tells of his difficulty in obtaining age data for girls: "In Badarpur, as in all other villages of Bangladesh, a girl's age is not normally disclosed except to very close relatives" (1974:13). Ellickson, another anthropologist, provides some insights into age-reporting patterns that she discovered while taking a village census in a relatively urbanized village (1972). She notes that male age reporting is a function of the status of the male: a married man with a small family is reported as 30-35 years old, a man with a substantial family or whose father has died is reported to be 40-45, while a man whose children are married will be reported as 50-60. Females are said to be consistently reported as younger than they are: husbands report wives' ages as less than they are, and fathers report daughters as even younger than husbands do wives. Unfortunately we learn

little about age reporting of children, but the general message seems to be that, if anything, there is a pattern of over-reporting of girls in the under-ten category. Thus, the relatively balanced juvenile sex ratios may be partially the result of misreporting.

The evidence on juvenile mortality in Pakistan and Bangladesh is too scant to allow one to build an airtight argument that juvenile females in Pakistan have much higher mortality rates than boys, while mortality rates between the sexes are more balanced in Bangladesh. But the existing evidence, if patched together, points to that conclusion. Sex ratio data correspond roughly to what the mortality data indicate in terms of the contrast between Pakistan and Bangladesh.

The Economic and Sociocultural Complex

The next questions to ask involve the economic and sociocultural complex that promotes such differences between Pakistan and Bangladesh. Does Pakistan resemble the North Indian model which I have referred to elsewhere as a "culture against females?" Does Bangladesh culturally resemble the South Indian model that I have suggested is more promotive of female life chances?

In sketching a model of the economic and sociocultural bases of skewed sex ratios in India, I relied on two major sources of data. The first is information on the agricultural utility of females as described in ethnographies and census statistics. Secondly, I used ethnographic information to develop the pattern of marriage practices and costs associated with family feelings toward daughters relative to sons, particularly the difference between large dowry weddings and bridewealth marriages. All of these factors are related to the variably intense son preference which characterizes South Asia.

Following my earlier work, I would hypothesize that females in Pakistan would be little valued for agricultural labor as is the case in North India and that marriage would involve great costs to the bride's family. Both factors would contribute to an intense preference for sons and a concomitant neglect of daughters. On the contrary, for Bangladesh I would hypothesize that female agricultural labor would be more valued (though not as much as in South India), and marriage costs for daughters would be relatively low.

The ethnographic data base for both Pakistan and Bangladesh is sparse compared to India; but, at least, the two countries are more homogeneous economically and culturally than India. Pakistan possesses much ethnic diversity within its boundaries, while differences between settled agriculturalists' and pastoralists' life styles hold fairly constant within the country. Bangladesh is more geographically homogeneous, since the country is one large deltaic expanse except for the Chittagong Hill Tracts. In both countries, class-based variations in both women's work and marriage patterns exist and are important.

Women's Work

Rural women work hard in both Pakistan and Bangladesh. While actual studies of women's work loads (agricultural and domestic) are rare, some indications of differences between the two countries can be gleaned from the ethnographic literature.[5]

Aschenbrenner reports on a Pakistani village in Lahore district, six miles from the border with India (1967). Most villagers are of the Arain "caste," a landowning and farming group. Women's work involves the usual cooking and grinding, but sometimes women also work in the fields picking anise which they clean and sell, picking cotton, or harvesting vegetables (1967:11-12). Honigmann (1958) provides sketches of life in three Pakistani villages: Chiho in Sind Province, Tordher in the Northwest Frontier Province, and Chak 41 MB in Punjab Province. Only for the last of these does he mention women's agricultural roles (though we cannot thus infer that women do no agricultural work in the first two villages): women help in the harvesting of cotton, sugarcane and maize after the crops have been cut by the men. Women also help with the threshing operation (1958:76-77). The women work with children in groups separate from men's groups for harvesting but help alongside men with the threshing. Family labor is emphasized as important to cultivation. This pattern of occasional field work, especially at harvest time, resembles the situation among the Jats of North India where women are known to be hard-working, but where their role is nonetheless secondary to males' in the agricultural process, as compared to the situation in South India where women frequently manage the agricultural operations as well as being the most numerous workers in the field throughout the process.

For Bangladesh, the picture appears on the surface to be similar to that of Pakistan. Detailed investigation of women's work in a village near Comilla town carried out by Sattar (1975) shows that, as in Pakistan, Bangladeshi women work very hard; but most of their work is done within the confines of the homestead. Data collected in 1942 for six villages in Bogra district reveal that women do household chores and also help with the work of the males if it can be done without leaving the house, such as preparing grains after the harvest (Mukherjee 1971). Poor women, however, leave the house to work as servants in others' homes. Males are largely responsible for rice cultivation including transplanting and harvesting. A photograph in Islam's monograph on Badarpur village in Dhaka district shows boys helping the elder males with rice transplantation (1974:41), a situation similar to that found in the neighboring state of West Bengal but markedly contrasting to much of South India where women do the transplanting (Miller 1981:111-112). Spring is a particularly busy time of year for women who are involved in the storing and drying of crops--operations which can be carried out within the courtyard walls. Women in Bangladesh are more important as processors of food and other agricultural products (such as jute) than as direct producers, while in Pakistan, women's roles in food production appear to be greater.

Marriage Practices

In the North Indian model of marriage, jati (sub-caste) hypergamy accompanied by large dowries given by the bride's side to the groom's side are critical features.[6] In the South Indian model, isogamous marriages (often between cross-cousins) predominate; and marriage costs are frequently in the opposite direction, with bridewealth functioning to transfer valuables from the groom's side to the bride's. In the North, village exogamy is the norm; marriage between cousins is not encouraged (except among Muslims and some lower castes); and marriage expenses are great for the bride's family. In the South, marriage is often within the village and between families who know each other or are related.

The North Indian model in its pure form, however, is not apparent in Pakistan. When discussing the clearly verbalized son preference that exists, Aschenbrenner (1967) notes that the women say "How can we poor people marry all these girls?" Although this comment could well be heard in a North Indian village, too, marriage costs and practices are not of the North Indian variety. Marriage is preferred between offspring from families of equal status, and the two families should be related if possible. Throughout the engagement period the groom's family bears higher expenses than the bride's. The custom of mahar (a sum of money given to the bride by the groom's family) exists in accordance with Islamic tradition and is a token paid at the wedding. There is no dowry as such, but property (household goods) may be given to a girl at the time of her marriage. Nevertheless, dowries are becoming more prominent in weddings of wealthier families. With marriage among related families, as in South India, costs for both sides are greatly reduced; but "in marriages with non-relatives, actual monetary transactions, with money given to the father or brother of the bride, appear to be more common" (1967:209). Another interesting factor is the traditionally widespread sharing of marriage costs: the relatives and friends of the bride's father contribute to his costs; and he, in turn, will contribute when their daughters are married. This practice of burden-spreading is well documented by Eglar (1960) for a Punjabi village in Pakistan. Thus, while daughters in Pakistan are felt to be burdens due to marriage costs, these costs to individual parents are lower than is the case in North India.

In Bangladesh, marriage practices resemble the South Indian pattern more than the Pakistan practices resemble the North Indian pattern. Typical marriage costs in the village where Ellickson worked are described: "To obtain a really promising husband for his daughter, a father might even give some land or offer to finance the boy's education. But most commonly the groom received an outfit of clothes and perhaps a gold ring" (1972:119). Ellickson notes that families prefer that their sons marry girls from families not much wealthier than their own. Echoing this slightly hypogamous tone, Islam's data on land ownership of brides' and grooms' families in Badarpur show that, in the majority of cases, the bride's father owned more land than the groom's (1972:81). This situation is very unlike that of North India and even somewhat different from the general economic isogamy of spouses' families in South India.

The recent ethnographic literature indicates a change toward a more North Indian pattern. There is no mention of a brideprice in descriptions of current marriage practices, whereas earlier studies document the practice. Mukherjee notes that, in the Bogra villages where he studied in 1942, except for the Hindu brahmans who gave dowries, all groups paid brideprices of varying sizes and some even performed brideservice (1971:247-248, 266). In general, though, brideprice amounts were becoming smaller (1971:255). Lindenbaum argues, on the basis of data gathered in 1964 in a village of Comilla district, that the transformation to smaller brideprice amounts had occurred by 1950 when brideprice payments ceased altogether (1981). Now, the preponderant costs of the marriage are borne by the bride's family, as are the costs of most of the jewelry given to the bride and the payment given to the groom. Aziz (1979) documents the same process of change in the villages in Matlab thana where he worked.

In both Pakistan and Bangladesh, economic change is bringing higher costs to the family of the bride--but things were not always so. Brideprice and brideservice were formerly predominant in most of Bangladesh. Similarly, early writers on the Punjab (a region that spreads from Pakistan to India) document the prevalence of brideprice among both Rajputs and Jats (Darling 1929). In the central Punjab, 70 percent of all marriages were estimated as brideprice marriages. Sex ratios, however, were very unbalanced in favor of males despite the fact that fathers of brides felt no burden from dowry costs; rather they gained financially. The same situation appears to exist in Pakistan today: for the father of a bride, marriage costs are not excessive and often they are sharable; nevertheless, daughters are considered a burden and their survival is impaired relative to that of boys. To attribute high sex ratios in the Northwest of India and in Pakistan only to high marriage costs is to err.

It is apparent that the economic importance of females in Bangladeshi households has been and still is higher than that of females in Pakistani households. From this discussion, sex ratios seem to be related more strongly to economic productivity than to marriage costs. In Bangladesh, the role of women in crop processing is traditionally large and important (McCarthy 1979). Crop processing is also important in Pakistan; but, in a wheat-dominated agricultural economy, it appears to take far fewer women to process the products that a household grows. Women's work in both countries takes place mainly within the home or the family fields, but women's work in the homestead seems to demand more hands in Bangladesh than in Pakistan. Clearly, detailed fieldwork in both countries is needed to document work demands, work loads, and work opportunities (both wage and non-wage) of women. The theory of how marriage costs relate to economic factors and daughter survivorship throughout South Asia, and beyond, still needs to be devised.

Priorities

As rice processing in Bangladesh increasingly is done by machine (McCarthy 1979), the demand for female labor will continue to decline. It is probable that Bangladesh's juvenile sex ratios will begin to become more

"North Indian" as the years go by. It is more difficult to point to the direction of change occurring in Pakistan and to predict the future. Probably the fairly equal sex ratios in some districts will become more "North Indian" with the transition to settled agriculture.

This paper suggests several research priorities. Field investigations of juvenile census counts should be undertaken in sample areas throughout the subcontinent to quell the debate over enumeration errors once and for all. Besides field research, work could be done here in the United States by using ethnographies that contain age and sex information for villages that have been studied in depth. In this way, a corpus of village profiles could be gathered and compared to census data. More local studies must be done to examine the critical variables of women's work and marriage patterns. The effects of change over time also need study: what impact does agricultural development have on women's work, marriage practices, allocation of health care to boys and girls, nutritional practices, and the related survival patterns of boys and girls?

It is not dilettantism to study children's health and survival. Children's health is intimately related to subjects that are recognized as critical even in the most hard-headed policy circles: fertility attitudes, fertility control, and overall population growth. One must know about the indigenous family size and sex composition goals within a culture before making policy recommendations that seek to affect those goals. But, in addition to development policy relevance, there is a need to study these issues from the perspective of moral policy concerning the right of children to health and survival.

NOTES

* This paper was originally prepared for presentation at the 81st Annual Meeting of the American Anthropological Association, Washington, DC, December 4-7, 1982.

1. The term "juvenile sex ratio" is used throughout the paper to refer to the number of males under ten years of age per one hundred females under ten years of age. The value of looking at juvenile sex ratios rather than the sex ratio for all age-groups combined is that factors such as individual migration and maternal mortality are automatically shaded out as explanations.

2. At the time of the Pakistan Census, the nation of Pakistan comprised two wings, West Pakistan (now Pakistan) and East Pakistan (now Bangladesh). To avoid terminological confusion, I will employ only the current country names, Pakistan and Bangladesh, even though some of the data discussed refer to the pre-division era.

3. Sex ratios for large juvenile populations above 105.0 require explanation since 105.0 is roughly the upper limit of what could be expected under "natural" conditions, that is, without cultural interference.

4. An additional source of data not discussed here is the World Fertility Survey, which included Pakistan and Bangladesh among its study countries. Preliminary results on the survey are appearing and will eventually provide rich comparative data on family and fertility variables. The data were gathered through interviews with, on average, five thousand women in each country and are thus "retrospective" in nature (see discussion in text below on problems with retrospective data).

5. I am currently striving to improve the ethnographic corpus discussed here and realize that much remains to be done.

6. Hypergamy refers to a marriage in which the socioeconomic status of the groom's family is higher than of that of the bride's, while hypogamy refers to a marriage in which the bride's family is of higher status. Isogamy refers to a marriage in which the families of both spouses are of roughly equal status. "Status" implies social ranking (i.e., the prestige of the subcaste or lineage involved) and often the wealth of the family, too.

TABLE 1

JUVENILE SEX RATIOS (MALES PER 100 FEMALES)
PAKISTAN AND BANGLADESH, DISTRICT-WISE, 1961

Pakistan		Bangladesh	
Kalat Division		**Chittagong Division**	
Kalat	111.5	Chittagong	101.9
Kharan	112.3	Chittagong Hill Tracts	101.7
Makran	110.0	Comilla	101.6
		Noakhali	105.1
Karachi Division		Sylhet	100.8
Karachi	108.3		
Las Bela	107.1	**Dhaka Division**	
		Dhaka	103.2
Hyderabad Division		Faridpur	100.2
Dada	114.6	Mymensingh	100.3
Hyderabad	112.7		
Sanghar	113.3	**Khulna Division**	
Tatta	104.3	Bakerganj	100.0
Thar Parkar	114.1	Jessore	102.3
		Khulna	100.0
Khairpur Division		Kushtia	101.7
Jacobabad	113.9		
Khairpur	110.3	**Rajshahi Division**	
Larkhana	113.7	Bogra	99.7
Nawabshah	114.4	Dinajpur	101.7
Sukkur	109.6	Pabna	101.5
		Rajshahi	101.3
Quetta Division		Rangpur	101.0
Chagai	104.4		
Loralai	113.2		
Quetta-Pishin	107.2		
Sibi	117.0		
Zhob	102.8		
Bahawalpur Division			
Bahawalnagar	108.1		
Bahawalpur	111.9		
Rahimyar Khan	109.5		
Multan Division			
Dera Ghazi Khan	109.9		
Montgomery	109.6		
Multan	108.7		
Muzaffargarh	107.9		

TABLE 1 (CONT'D)

Pakistan		Bangladesh
Sargodha Division		
Jhang	108.7	
Lyallpur	112.0	
Mianwali	106.6	
Sargodha	108.9	
Dera Ismail Khan Division		
Bannu	100.4	
Dera Ismail Khan	107.2	
North Waziristan	NA	
South Waziristan	NA	
Rawalpindi Division		
Campbellpore	104.7	
Gujrat	110.8	
Jhelum	106.0	
Rawalpindi	103.1	
Lahore Division		
Gujranwala	111.5	
Lahore	109.1	
Shekhupura	111.2	
Sialkot	112.7	
Central Division[a]		
Peshawar Division		
Hazara	105.7	
Khyber	NA	
Kohat	106.7	
Kurram	NA	
Malakand	NA	
Mardan	104.7	
Mohmand	NA	
Peshawar	109.9	
Range: 100.4 - 117.0		Range: 99.7 - 105.1

[a]No data were available for any of the districts in the Central Division.

Source: Government of Pakistan, Population Census of Pakistan, 1961. Karachi: Government of Pakistan.

TABLE 2

EARLY CHILDHOOD MORTALITY RATES (PER 1,000 POPULATION) FROM SEVERAL SOUTH ASIAN STUDIES[a]

	Khanna Study North India 1960s	Narangwal Study North India 1960s
Male	19.4	29.0
Female	36.9	58.0
Both Sexes	27.4	42.0
Male/Female Differential[b]	17.5	29.0
	Vellore Study South India 1970s	**Matlab Study Bangladesh 1976-77**
Male	21.6	20.0
Female	25.1	29.6
Both Sexes	23.3	24.6
Male/Female Differential	3.5	9.6

[a]Childhood mortality rate refers to deaths per 1,000 population for children aged at least one year and less than five years.

[b]The male/female differential is computed by subtracting the male mortality rate from the female mortality rate.

Sources: Kelly 1975:132; Sundar Rao 1978; Wyon and Gordon 1971:186; D'Souza and Chen 1980:260.

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