

# **Fertility Decline, Family Size and Female Discrimination: A Study of Reproductive Management in East and South Asia**

*Without a change in gender reasoning,  
the rapid decline in fertility and the now preferred or  
imposed smaller family size in East and South Asia,  
will mean that daughters will continue to  
be subject to new trade-offs*

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Contrary to demographic expectations and in defiance of historical experience elsewhere, widespread and continuing son preference in much of Asia has not proved to be an impediment to progressive or rapid fertility

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decline. Indeed, one of the most significant features of the twentieth century has been the dramatic decline in fertility and explicit preference for smaller families in much of East and South Asia which, far from reducing, has exacerbated son preference leading to increased discrimination against daughters. An examination of the masculinity rates, sex ratios at birth and gender-disaggregated infant and child mortality rates, all point to excess female mortality in most East and South Asian societies. A study of demographic narratives for each country suggests that, region-wide, there is an increasing tension or conflict between preferred family size and preferred family-sex composition which is only resolved by intensified reproductive management, technological intervention and excess female mortality. Simultaneously, ethnographic studies in villages and cities across the region suggest that beliefs and behaviours associated with the management of reproduction are rooted in notions of gender difference, complementarity and unsubstitutability. Within the new and now preferred smaller families, daughters, rarely able to substitute for sons, are subject to new trade-offs with daughters more than ever before “taking the place of” or “limiting opportunities for” sons. This paper summarizes demographic trends in and patterns of female discrimination associated with fertility decline and smaller family size in East and South Asia, before turning to ethnographic voices in China and India to investigate and identify the premises or rationales underlying family management of reproduction. Combined demographic and anthropological approaches suggest that there is a demographic, development and gendered coherence in East and South Asia combining rapid or progressive fertility decline, rising and sometimes rapid economic development and common cultures of gender which have all contributed to an intensification of daughter discrimination.

### **Demographic narratives**

For much of Asia, demographic narratives over the past century have drawn attention to the adverse female to male sex ratios and the numbers of women “missing” from the population totals of many societies. Towards the end of that century, Amartya Sen (1990) compared the ratios of women to men in Europe (1.06) and North America (1.05) to those in South Asia (0.93), West Asia (0.94) and China (0.94). He argued that the lower rates in Asia were due to excess female mortality, which he calculated, amounted to a total of some 100 million women “missing” from the populations of South and West Asia, North Africa and China. Subsequently, demographer Ansley Coale (1991) also identified excess female mortality as the major factor contributing to the high masculinity rates in populations in which discriminatory treatment offsets the natural lower mortality of females. He both confirmed and refined Sen’s calculations to take into account high losses of males in war and

intercontinental differences in age structures, which gave him a total of 60 million missing females from the populations of China with a masculinity rate 1.074, India (1.066), Pakistan (1.105), Bangladesh (1.064) and Sri Lanka (1.040). In an attempt to reconcile these differences in numbers of “missing” women, Stephan Klassen (1994) introduced modified non-discriminatory standards for evaluating excess female mortality and on this basis, calculated that the number of females missing was nearer 90 million.

While all argue that unfavourable masculinity rates are due to excess female mortality during pregnancy, birth, infancy and childhood, high maternal mortality rates or male migration, the consensus is that it is juvenile sex ratios which are primarily responsible for the high masculinity rates. In all these populations, demographic studies have shown that high female death rates mainly take place in the first five years of life and that gendered discrimination is sufficiently adverse to daughters to cancel out their natural advantage in survival rates. That the “missing women” or “missing females” of these demographic calculations could more appropriately be termed “missing girls” is confirmed by a number of country studies in South and East Asia which have revealed that there are quite distinctive trends and patterns in excess young female mortality.

In South Asia, which has one of the highest masculinity rates in the world, there is an estimated 941 females for every 1,000 males. With the exception of Sri Lanka, this unfavourable rate is reflected in country female ratios: Bangladesh, 954; Bhutan, 981; India, 938; Maldives, 945; Nepal, 973; and Pakistan, 937. As a result of these figures, it is estimated that a total of 79 million women are missing from the region (Haq, 2000). For India, it was the low ratio of females to males, the lowest in the world throughout the twentieth century, which drew attention to the numbers of “missing” females in the population. In 1901, the ratio of females to males was 972 to thousand, but in 1971 it had decreased to 930; in the 1981 census, the figure rose to 934 but the increase was short-lived for, by the 1991 census, the ratio had reached its lowest recorded level of 927 females to 1,000 males. On the basis of these ratios, Agnihotri (1995) estimated that the females missing from India’s population between 1961 and 1991 show a rise from 12 to 32 million, with the steepest increase between 1981 and 1991. Demographers studying these worsening sex ratios have mainly attributed them to excessive female mortality in infancy and early childhood (Sargent and others, 1996). In 1991, for example, it was estimated that for all India the 0 to 6 year ratio was 945 girls to 1,000 boys (Census Report, 2001), and that 56 districts had 0 to 6 year sex ratios below 900 (Chinkath and Athreya, 1997). Indeed, the most recent Indian census in 2001 confirms this hypothesis. Although there are now 933 females for every 1,000 males, the female-male disparity up to the age of six years has

widened since 1991 from 945 to 927 girls per 1,000 boys in 2001 (Census Report, 2001). Like its predecessor, the 2001 census attributed this imbalance to female infanticide, neglect and sex-selective abortions.

Infanticide, long practised in India, was responsible for the disparities in juvenile sex ratios of more than 120 males to 100 females in many areas of nineteenth-century Northwest India where it was not unknown for roughly one quarter of the population to practise infanticide in one out of two female births. In some areas, no or very few girls survived (Miller, 1981). Although it was assumed for much of the twentieth century that female infanticide was a localized practice of declining importance, contemporary scholars such as Patel (1989), George and others (1992) and Sargent and others (1996), suggest that, if this is the case, then more recent studies show that female infanticide has increased more generally in northern and western provinces and more specifically in clustered populations in southern provinces where infanticide now seems to account for a disproportionate number of female stillbirths.

A recent report in the mid-1990s suggests that the practice is spreading to new geographic regions, resulting in the spread of female infanticide across India's rural population and across the social spectrum from Rajputs and Brahmins to other caste groups, among whom it had not been practised before (Sudha and Rajan, 1999).

In addition to the rise in female infanticide, demographic studies also suggest that excess female mortality in infants and children from the age of one year is still significant and widespread in India due to female neglect and shortfalls in the supply of food, nutrition and medical care. In her 1981 path-breaking study of female mortality, Barbara Miller argued that in northern states, among some groups and for some categories of daughters, excessive female mortality was so great that they must be deemed "endangered". Her study of neglect in rural north India drew attention to the ways in which intense desire for sons was directly tied to the fatal neglect of daughters. Differentials between the northern and southern states were confirmed by a number of later studies which showed that female infant and child mortality rates were not only much higher than those for males in the northern states, but also in identifiable regions of south India where district studies continue to show higher female child mortality despite more balanced infant and child sex ratios overall (Dyson and Moore, 1983; Basu, 1992; Kishor, 1993; Murthi and others, 1995).

Indeed, an overview of the data shows that female to male ratios in child mortality, not only continue to show a bias in over 60 per cent of India's districts (Malhotra and others, 1995), but that excess female mortality in infancy and childhood continues to rise in some regions. For example, one very

recent study of sex-specific child-mortality probabilities found that girls who had experienced heightened mortality risk in 1981 experienced continuing and increasing risk in 1991 and that in 1991 excess female mortality had extended to include regions not so disadvantaged in 1981. It concluded that the phenomenon of excess female mortality had persisted over the decade and spread across India during 1981 to 1991, indicating that mortality fell more for males than for females who were increasingly disadvantaged (Sudha and Rajan, 1999). In the late 1990s, it was reported that 18 per cent more girls than boys die before their fifth birthday (Haq, 2000).

If the risk to female infants and children has increased, females before birth are also at greater risk as a result of the widespread and increasing use of sex-selective abortion. In the 1990s, demographers had begun to argue that it was now important to take into account sex ratios at birth as a factor contributing to the high masculinity ratios in India as a whole. Indeed, their studies suggested that the wider distribution, privatization and commercialization of sex identification and abortion facilities, a greater awareness and use of these facilities in clinics and hospitals and the absence or partial absence of regulation had allowed sex-identification facilities to mushroom (Jeffery and others, 1984; Basu, 1992; Arora, 1996).

In the absence of official figures for sex ratios at birth and of reliable statistics of sex ratios in abortions, alternative means have been deployed to estimate sex ratios at birth. For example, using reported sex ratios among infants aged 0 to 1 years as well as sex ratios of child-mortality probabilities to calculate sex ratios at birth, Sudha and Rajan (1999) show a stark shift to excessively masculine sex ratios at birth between 1981 and 1991 from near normal to a range of 107 to 118 or 124 boys per 100 girls in urban areas. They argue that the increasing masculinity of sex ratios at birth in North, Northwest and in urban locations of some central states suggests the growing use of prenatal sex identification and sex-selective abortion.

By the late 1990s, female foeticide had been reported in 27 of India's 32 states, and in some communities in Bihar and Rajasthan, the birth ratio is reported to be as low as 60 females per 100 males, compared to the natural ratios of 97 to 100 males (Haq, 2000). Parallel studies for Bangladesh (Chowdhury and Bairangi, 1990; Chowdhury and others, 1990; Muhuri and Preston, 1991; Rahman and others, 1992; Abeykoon, 1995) and Pakistan (Shah and Cleland, 1993; Abeykoon, 1995) suggest similar trends in which existing discriminatory patterns of female infanticide and neglect continue. For example, a very recent study of sex specific mortality data in Bangladesh showed that girls aged 0 to 4 years had a mortality rate that was 40 per cent higher for girls than for boys (Klassen, 1994). Again, as in India, the

introduction of new technologies may well continue or exacerbate these trends and contribute to rising sex ratios at birth and increasing numbers of girls “missing”.

In East Asia, it was the dramatic increase in the masculinity of sex ratios at birth which first aroused disquiet among demographers, followed by increasing concern at the rising female infant and child mortality rates. Since the mid-1980s, demographic studies in China, the Republic of Korea, Taiwan Province of China and Viet Nam have uniformly showed an increasing rise in the proportion of male births and confirmed that access to sex identification and abortion facilities is widespread and permit new forms of intervention before birth.

For China, reported sex ratios at birth rose from close to the norm of 106 male to 100 female births in the 1960s and 1970s to 108.5 in 1981, 110.9 in 1986, 110.0 in 1987, 111.3 in 1989 to 112 in 1990 and to 117/8 in 2000. Similarly sex ratios at birth have risen from 107 to 110 in Taiwan Province of China and from 107 to 114 in the Republic of Korea (Gu and Roy, 1995; das Gupta and Li, 1999; Census Report, 2001). For China, the figures for sex ratios at birth are complicated by the fact that not all female births are registered, but calculations which take probable rates of under-registration and the sex ratios of older children into account suggest that girls are not just “missing” from the statistics (Zeng and others, 1990; Tu, 1992). Indeed, hypotheses based on under-reporting, abandonment and adoption appear to be much weaker than they were several years ago and attention has shifted to the more serious forms of discrimination such as infanticide, sex-selective abortion or infant and child neglect.

Field investigations suggest that the incidence of female infanticide probably rose during the 1980s when it became the subject of much media concern and, although the practice is likely to persist in poorer remote regions where it is still an accepted means for reducing fertility and achieving desired sex configurations, there is little evidence to suggest widespread female infanticide. Rather, there is a congruence of opinion among China’s demographers that the practice of female infanticide at birth is less responsible for the current rise in sex ratios than sex-selective abortion. In support of their argument, they cite the legal strictures against infanticide, the difficulty in keeping such births and deaths hidden, the considerable psychological costs and above all, they suggest that there are now considerable prenatal options including sex-selective abortion (Zeng and others, 1990; Tu, 1992). Ironically, it is the improvements in the standards of prenatal care and in particular the development and spread of new ultrasound technologies that have been responsible for permitting an increase in sex-identification before birth. While

government policy has forbidden the use of new technologies for sex identification, their widespread use for this purpose is difficult to police and the lack of local funding for health encourages their misuse because the fees levied finance an otherwise under-funded health service and supplement low medical incomes. What lends weight to the importance of sex-selective abortion as the cause of rising sex ratios at birth in both rural and urban regions, is that even in urban hospitals where surveillance is greater, the sex ratios of aborted fetuses and of births also show high sex ratios, which suggest that numbers of women have availed themselves of prenatal sex identification tests (Gu and Li, 1994). Similar trends revealing increases in the use of sex selective abortion characterize the demographic literature for the Republic of Korea, Taiwan Province of China and Viet Nam (Freedman and others, 1994; Goodkind, 1995; Park and Cho, 1995).

In China, there is also evidence of increasing female infanticide and infant and child mortality. In 1981, there was little difference between male and female infant mortality rates but during the next decade, the male infant mortality rate declined from 39 to 35.5 per thousand while the female rate increased from 36 per thousand (which was lower than that for males in 1981) to more than 40 per thousand in 1989 (Sun and others, 1993).

Data from the 1990 census in China allowed demographers Ansley Coale and Judith Banister (1994) to estimate the numbers of missing females over five decades in China. They argued that the numbers of missing females increased with each cohort in that 2 per cent are missing from children born in the mid-1970s, 3 per cent from those born between 1979 and 1982, 4 per cent from those born between 1982 and 1987, 5 per cent from those born in 1988 and 1989 and 6 per cent from those born in 1990. They concluded that large and increasing numbers of female infants and children were missing from the birth registers in China at an increasingly younger age as the result of intervention at birth and neglect in the first years of life. For China, demographers have consistently argued that the total numbers "missing" amount to close on 40 million females with one Chinese newspaper forecasting in 1992 that by the end of the year 2000, this figure would rise to 70 million (*Nongmin Ribao*, 1992).

Overall, what recent demographic studies in East and South Asian countries show is that quite distinctive patterns of female discrimination are converging and are resulting in increasing excess female mortality before birth, at birth and in infancy and childhood. What research also shows is that the phenomenon of "missing girls" occurs alongside economic development and the improved status of women and is more likely to be correlated with declining fertility than any other factor common across the region.

### Demographic correlations

A near universal insight derived from demographic and other studies is that increasing discrimination against girls occurs across a wide range of economic and socio-political contexts in East and South Asia. First, the long-held assumption that son preference will diminish or disappear with economic development and correlative redefinitions in the roles of and improvements in the status of women are challenged by recent research which shows that, across the diverse societies of East and South Asia, discrimination against young girls is not confined to poor rural regions or agricultural populations as is sometimes argued (Johannson, 1984). Sex ratios at birth in China, the Republic of Korea and Taiwan Province of China, are not so very different across cities, towns and countryside.

In China, sex ratios at birth are only very slightly lower in the cities, and the main provinces that have sex ratios at birth higher than 111 boys to 100 girls include some of the richest and poorest provinces in the country. In Taiwan Province of China, sex ratios at birth are slightly higher in the capital city of Taipei than in the countryside (Gu and Roy, 1995). Again, although infant mortality rates in China are higher in rural than urban areas, rising female mortality is common to both city, town and countryside (Sun and others, 1993). In India too, excess female mortality before and at birth and in infancy and childhood is not limited to poor, rural and remote locations but also occurs in the richest provinces, cities and their suburbs (Bulmiller, 1990). A recent study suggests that it is urban populations that have been at the forefront in the use of ultrasound technologies (Sudha and Rajan, 1999), while according to the 2001 census, sex ratios fell to 874 and 861 females per thousand boys in two of the country's relatively well-off farming states (Census Report, 2001).

Another anticipated correlation was that between rising women's status measured in terms of entry into education and employment and reduced son preference or dependence. However, a significant trend revealed by demographic research is that daughter discrimination continues to occur in populations where women enjoy an education and employment *and* in communities where women remain illiterate or are secluded within the household. New opportunities for female education and employment have taken place to either greater or lesser degrees in much of East and South Asia, but excess female mortality continues and has increased even where there have been substantial improvements in women's education and economic status as in urban East Asia.

Research investigating the links between the status of women and discrimination against girls in East and South Asia shows that there are few

such direct correlations (Muhuri and Preston, 1991; Basu, 1992; Murthi and others, 1995). For instance, in China, the 1990 census suggested that the sex ratios at birth were 112.5 boys per 100 girls for mothers with some primary schooling, 114.2 for those who had completed primary school, 116.2 for middle school graduates and that it was not until women had received college education that it declined — although to a still high 110.7 (Gu and Xu, 1994). In rural north India, Monica das Gupta (1987) found that excess female mortality for second and subsequent parity daughters was 32 per cent higher than their siblings for uneducated mothers and 136 per cent higher if the mothers were educated. She showed that some educated mothers in their late 20s wanted virtually no daughters even if they already had several sons.

Later, she and her colleagues (1997) argued that recent increases in female education and labour participation alongside increasing excess female mortality in infancy and childhood suggest no clear relationship between women's status and discrimination against girls. A number of other studies published in the 1990s confirmed that the evidence for assuming such a correlation is still far from conclusive (Muhuri and Preston, 1991; Basu, 1992; Murthi and others, 1995). However, both economic development and rising women's status are associated with fertility decline.

The one clear relationship that does emerge is the correlation between excess female mortality and fertility decline and the preference for smaller family size. According to demographers, one of the most remarkable of global changes in the twentieth century was the shift from high to low fertility in Asia and particularly in China and India, the two societies responsible for three quarters of the reduction (Caldwell, 1993; Rele and Alam, 1993). Fertility decline first took place in East Asia with a rapid decline in rates from 5.3 to 2.3 between 1960 and 1990 (Leete and Alam, 1993), while from the mid-1980s the total fertility rate dropped to 1.8 in China, 1.7 in the Republic of Korea and Taiwan Province of China and to 2.3 in Viet Nam.

In South Asia, the total fertility rate almost halved in India and Bangladesh dropping from 6 or 7 to around 3.0 in India and Bangladesh. The exception is perhaps Pakistan where there has been a decline in fertility but it has been slower with the total fertility rate averaging around 4.8 in 1999 (UNICEF, 1999). What is also interesting is that this correlation is so whether fertility decline was rapid or more modest in pace and whether it was voluntary or involuntary. Hence discrimination occurs before, during and after birth in Bangladesh, China, India and Viet Nam where birth control programmes are strict or compulsory and in the Republic of Korea, Pakistan and Taiwan Province of China, where birth control is voluntary and parents may have as many children as they desire. In both sets of circumstances, it is less the speed

or impetus for fertility decline that is important than the new relationship between low fertility and excess female mortality which challenges previous demographic assumptions linking fertility and mortality trends.

Instead of the anticipated demographic transitions associating high mortality with high fertility and low mortality with low fertility, the example of East and South Asia suggests that low fertility can also be associated with high mortality in the case of girls. Female infanticide and neglect have long been perceived as mortality strategies utilised by parents to control fertility, limit family size and achieve desired sex configurations (Scrimshaw, 1981; 1984). Now, sex-selective abortion has been added to the repertoire of mortality strategies and, although in some cases it may well be a substitute for earlier strategies, the increase in excess female mortality suggests that it supplements as well as substitutes for earlier methods — not just at high parity births as previously but also, and increasingly, at lower parity birth orders.

Most demographic studies suggest that it is second and higher parity daughters who are most at risk. However, in recent decades the risk has expanded to include females conceived at second or third parity births. In East Asia, the sharp increase in sex ratios at birth from the mid-1980s can be correlated most directly with birth order. In 1990 in China, the sex ratios at birth were near normal at first birth but there was a substantial increase to 122 boys to 100 girls at second birth and thereafter sex ratios hovered around 130 boys to 100 girls for subsequent births. Here, and perhaps uniquely, the most observable rise was in second-order births because of the one and two-child policies. In the 1990s in the Republic of Korea, the sex ratios at birth were around the norm for first births. These ratios show a slight increase at second births to 112 boys per 100 girls and a dramatic increase at third and fourth births to 185 and 229 boys. In Taiwan Province of China, the sex ratios at birth also remained normal at first birth, for second births they rose to 109 and for third and fourth parity births they jumped to 119 and 128 respectively (Gu and Roy, 1995). Further scrutiny of data on sex ratios shows that parity-specific ratios are directly affected by the existing gender composition of surviving children and that, as in South Asia, second daughters are particularly at risk if there is no son and smaller families are the norm (Gu and Li, 1994; Yuan and Skinner, 2000).

For South Asia, Monica das Gupta's 1987 study of sex differentials in child mortality by birth order in one north Indian state showed that the burden of excessive mortality fell most heavily on girls born with elder sisters. They experienced 53 per cent higher mortality than other children. The fact that this rose to around 70 per cent among such daughters of younger women aged 15 to 29 years suggested to her that discrimination against this category of girls had

increased in recent years. She argued then and in a later study that such selective intent required a degree of consciousness and voluntarism far greater than if discrimination was random and affected all girls equally (das Gupta and Bhat, 1997). Indeed, it might be argued that such reproductive interventions have been deployed purposively by parents to resolve increasing tension between preferred smaller family size and preferred family-sex composition. To further investigate and understand how this conflict and its resolution is managed, it seemed appropriate to turn from demographic outcomes to demographic processes or from statistics to ethnographic narratives to examine the ways in which populations and in particular parents talk about the beliefs and behaviours associated with reproductive management.

### **Ethnographic voices**

An extensive perusal of ethnographic studies in villages and cities across China and India suggests that there is a pervasive theme which punctuates everyday conversation, interview and life-cycle event or ritual and that is that children are rarely referred to as a collective ungendered category (Jeffery and others, 1989; Jeffery and Jeffery, 1996; Croll, 2000). Rather, they are divided by gender into boys and girls with quite different parental or familial expectations and entitlements and this is so in societies that are rural and urban, secluded and employed, literate and illiterate and in rich and poor communities.

Differentiated characteristics and values are attached to boys and girl who are categorized, counted and represented quite separately. Differences between sons and daughters are assumed and unquestioned with the importance attached to and desire for sons quite central to everyday conversation about family, livelihood and religion and at life cycle events. Ethnographic observation and record confirm that conception is as much a cognitive as physical act and that gendered divisions and preferences are quite explicit in men's and women's statements about pregnancy, birth and support in old age and at both marriage and funeral ceremonies.

"May you have many sons" or variations thereof have long been common felicitations reflecting age-old dreams of sons and grandsons and, without exception, blessings, status and good fortune are defined not in terms of daughters or children but of sons. The most important question during pregnancy and birth, and the cause of much anxiety and pressure, prayer and medicine-taking is the gender of the child and, for the majority of girls born, their welcome within the family and community will be quite different from that accorded to their brothers. In interviews and conversations, sons are presented before daughters regardless of age-order with many sons the cause for congratulations and a sequence of only daughters occasion for

commiseration. The pity reserved for those who have no sons or who lose sons is without equal and a major factor in exacerbating the universal quest for a son or sons. In sum, what impresses ethnographers alike is the open enjoyment and privileging of sons in speech, gesture and ritual so that daughters by open or overt implication are devalued and deemed a disappointment and it is this difference which is still highlighted in current family design and building strategies.

### **Family design and building**

The parental preferences, decisions and rationales for having sons reported in the ethnographies can only be understood within a familial context in which the generations are intimately tied into family needs, collective interests and schedules. Although there is no undifferentiated practice of the family within East and South Asia, there is an underlying or central model of the family which, with a public face of unity and cooperation, has a clear emphasis on continuity of the family line and support, ideal family composition, the accumulation of familial resources and intra-familial entitlements (Krishnaraj and Chanana, 1989).

In this context, the process of designing and building a family becomes especially important and ethnographic voices reveal that, almost without exception, it is based on a common set of inter-generational obligations. It has been hypothesized for several decades that the transition from high to low fertility and an associated decline in demand for children and change in their relative value has been caused by a reversal of inter-generational wealth flows between parents and children which include money, goods, services and guarantees for old-age security. For example, the Australian demographer John Caldwell (1976) early argued that the direction of resource flows is from the younger to older generations in traditional societies with higher fertility, and from older to younger generations in developed societies with low fertility and that it is this reversal which is responsible for fertility decline.

In East and South Asia, however, there has been fertility decline alongside both the maintenance or even increase in flows of resources from child to parent due to longer life expectancy, the continuing absence of alternative forms of old-age support and new risks to existing pension schemes as a result of economic crises or economic reforms and an increasing flow of resources to children as a result of the rising costs of education and marriage. Whatever the household, family or kinship form in East and South Asia, the central inter-generational contract continues to incorporate parent-support and care which, still sanctioned and endorsed by filial piety, continues to constitute an essential prerequisite for old-age security. Field studies suggest that there is

a continuing and everyday assumption that it is parent-care rather than child-care which is still the most important aim of family building. In these circumstances, ethnographers have concluded that child-care remains a “means to an end” or a “form of long-range self-interest” primarily represented and practised as a strategy for securing parent care in old age (Jeffery and others, 1989; Potter and Potter, 1990; Ikels, 1993). Very contemporary ethnographic records reveal how parental or familial investments in child care, education and marriage are rationalized openly as a form of enhanced future capacity for care with investments in children manipulated to instill a sense of child indebtedness (Milwertz, 1997; Xie, 1997).

If perceptions of inter-generational obligations are still biased in favour of parent-care, -support and -security, these are still primarily perceived as parent-son contracts with the flow of resources almost exclusively between son and parent. Sons, as permanent members of households or families, are openly spoken of as the only important source of practical support and security in old age and thus invested in structurally, materially and emotionally by both parents to secure future care. Such parental dependency is not considered demeaning, rather it is a parental entitlement that enables sons to repay parents for securing and settling them in marriage. The loneliness, impoverishment and hazards of old age in the absence of sons is a subject returned to time and again in ethnographic records.

In this respect, the differences between sons and daughters constitute a major contrast in familial expectations in that, while sons require early care just as daughters, sons stay, reimburse and provide for their parents in old age, while daughters mostly marry out or move elsewhere. It is this virtual exclusion of daughters from the parent-child contract which lies at the basis of family design and building strategies, influences familial perceptions of daughters and results in the different expectations and entitlements of sons and daughters. Although bias in parental investment and in value accorded to sons and daughters has a long history, in the newer smaller families, parental bias and manipulation has been intensified and more than ever before, devalues and threatens the survival of daughters.

### **Daughter devaluation**

Throughout the ethnographies of China and India, daughters are often spoken of with ambivalence and designated “a burden”, “a liability” or “a loss”. In familial calculations of costs and benefits, the continuity and security of sons as assets are set alongside the liability and drain on family resources associated with daughters who time and again are deemed transient, outsiders, guests or someone else’s property like “water spilled out” or a “bird in a

courtyard”. The expressions “no-return cost”, “double-loss”, “a commodity on which money is lost” or “a no-profit commodity” are common paraphrases for daughters especially where her anticipated dowry is a widely-feared economic drain on her family’s resources. However, ethnographic- studies show that, with or without the expenses of a dowry, daughters are still not assumed or expected to contribute to the support of parents and that this is the important factor in shaping parental gendered expectations of sons and daughters. Indeed there is a certain amount of shame attached to depending on daughters which is very much viewed as a last resort and they are only turned to in the absence of sons (Wolf, 1985; Jeffery and others, 1989; Jeffery and Jeffery, 1996). When daughters do contribute to the support of their parents, and it can be cogently argued that they do so more than is assumed or perceived even by the dependent parents themselves, this support is not fully recognized or acknowledged. More often, it is seen as short-term and part-time and therefore inferior to that of sons. Although much attention has been given to the break between daughters and their natal families and the transfer of their persons, property and labour to the families of their husbands, field studies over the years in South and East Asia suggests that, in some regions and socio-economic categories, this break may be less radical than assumed and that continuing contact after marriage may involve her in making some contribution to the support of her parents.

The difference between objective and perceived contributions as elaborated by Amartya Sen (1987) is apposite here for it can be argued, especially in East Asia, that age-old assumptions about the contrast between a daughter’s marginality and liminality and a son’s security and support continue to mask the existing and increasing contribution of daughters to their parents’ households and that this flow of resources is greater than perceived or reported by parents. If their contribution is acknowledged, it is seen as insubstantial or as short-term rightful returns for the expenses incurred in raising a daughter and thus cancelled out. This perception of daughters might have been expected to change once young unmarried women have entered the labour force in large numbers and remitted contributions to the family budget and contributed towards their own marriage costs.

However, even in East Asian cities and special economic zones, there is little correlation between their entry into the labour force prior to marriage and parental assumptions about losses associated with daughters or indeed the perceptions of daughters themselves of their own value and contributions (Pun, 1997; Wolf, 1997).

There is one exception to this pattern; it is in China’s single-daughter households. Recent field research in Beijing and other cities shows that where

parents have had no choice but to depend on the single daughters, they are grooming them to substitute for sons in the inter-generational contract (Milwertz, 1997). Elsewhere, if daughters are still deemed to be in no position to compete with sons in terms of inter-generational support and in parental expectations, then daughters can also continue to expect fewer entitlements to familial resources than their brothers.

Taking current entitlement analyses and bargaining metaphors as a frame (Sen, 1987), it is hardly surprising that if parents expect very little from their daughters who marry out and are reserved for another family, then, they are less likely to be assigned, or in a position to bargain for, a share of familial resources equal to that of their brothers. For example, it has been well-documented that although girls' access to school has increased in East Asia and to a lesser degree in parts of South Asia, they still have less access to primary schools in poor and rural regions or to higher levels of education in richer and urban locations. Fewer girls attend school than the enrollment figures suggest, more girls than boys are taken out of school and there is a much higher proportion of females among the illiterate.

There is less data available to measure the nutritional status of girls, but that which is available, suggests that girls may have a lower food intake, experience some form of stunting and lesser growth in some regions and during periods of scarcity. They may also suffer from micro-nutrient deficiencies. Again, although there have been few statistics to show that girls have lesser access to medical facilities, there has been interesting research both in China and India in the past few years which shows that girls' illnesses are less likely to be thought "serious" so that they are less likely to be taken to hospital or out-patient clinics and that there is less family money spent on girls' illnesses so that girls are more likely to die at home or on the way to hospital (Jeffery and others, 1989; Bulmiller, 1990; Good, 1990; Wang and Li, 1994; Li and Zhu, 1999; Haq, 2000).

That there is a direct link between expectation and entitlements is confirmed by two very recent field studies in urban China and in southern India. Both areas are locations where customarily, there has been less devaluation of daughters. The field study in urban China shows that now single-child daughters are included in the inter-generational contract for the first time, the entitlements of daughters to family resources have increased with investments manipulated by parents to match new parental expectations and ensure delivery (Milwertz, 1997). The field study in South Asia shows that where daughters had hitherto contributed to the long-term care of parents but for various reasons now no longer do so, then not only are expectations of daughters reduced, but so also are their entitlements to familial resources

(Kapadia, 1995). One very significant theme to emerge from a study of female autobiography and other personal narratives in twentieth-century China, is the way in which young girls felt themselves to be less welcome, valued and entitled than their brothers and estranged as outsiders “in but not of the family” (Croll, 1995). For daughters, less integral to or excluded from long term-familial and kinship genealogies, rituals and decision-making, it may well be that it is familial rather than social exclusion that contributes to their omission from mainstream economic and social activities and that this exclusion is heightened now that parents prefer smaller families. What field studies in the late decades of the twentieth century suggest is that both the preference for smaller families and the continuing dependence on parent-son contracts mean that daughters have become less welcome than ever before and that, in the resolution of this tension, familial management of reproduction has been intensified.

### **Reproductive management**

Reductions in the preferred number of children alongside preferred sex configurations have intensified interest in family-building strategies, and ethnographic voices concur that conception is as much a cognitive as a physical act, with reproductive choices managed in a set of sequential decisions during a now foreshortened period between first pregnancy and completed family size. The number of children may be fewer, but successful reproductive management in both cities and villages is still measured in terms of the birth and survival of at least one son with desired outcomes achieved by a variety of pre and post-natal strategies including controls of fertility, pregnancy outcome, birth survival and transfers of children. Across the region, in China, the Republic of Korea, Taiwan Province of China and Viet Nam and in Bangladesh, India and Pakistan, there is an explicit preference for three or two children and a desire centering on either two sons and one daughter, one son and one daughter or, if only one child, one son (Chowdhury and Bairangi, 1990; Freedman and others, 1994; Park and Cho, 1995; Sudha and Rajan, 1999; Yuan and Skinner, 2000).

Preferable sex configurations included MM, FM and MF or MMF, MFM and FFM/M and, where parents naturally achieve such configurations, they are likely to stop child-bearing. However, in order to achieve such configurations, parents are now increasingly likely to be pro-active and to intervene before, during or immediately after birth or later in infancy or childhood. Those with one or two daughters and no sons are demonstrably the least satisfied category of parents and for long they have felt that they had no choice but to continue child-bearing until they had one or even two sons. It is this realization which

was responsible, even in the labour room, for post-partum quietness, disappointment and depression. Parents still go to enormous lengths to have a son by having more children than they want even if this is detrimental to the health of mothers or in defiance of governments' birth control rules. The difference now, in the foreshortened times of small family size, is that parents are more likely to intervene at lower parities and less likely to leave the sex of the second or third child to chance.

In the face of the continuing need and desire for sons, parents have resolved the tension between fewer children and desired sex composition by either resorting to age-old practices such as infanticide or later neglect or more preferably identifying the sex of the child before birth followed by sex-selective abortion. Iterative reproductive decisions are primarily influenced by the gender of the previous surviving child or children and it is the presence or absence of a son which primarily shapes sequential birth plans and the process of reproductive management. In India, field research shows that as parents want fewer children and at least one if not two sons, even second daughters at lower parity births are seen increasingly to "come without being invited" (Jeffery and others, 1989). In China, with stringent one- or two-child policies, the birth of the first and second daughter means that more than ever before, she "takes the place of a son" or constitutes "a lost opportunity for a son" (Ku, 1998). In the more intensive competition between sons and daughters for precious places within smaller families, it has become clearer than ever before that, if parents can manage their reproduction to achieve desired gender configurations, then, quite purposively they will do so.

In China, as more stringent birth control programmes including the one- or two-child rule have become more widespread, field research has suggested that there has been an increase in anxiety during pregnancy and a cumulative increase in the deployment of superstitious practices and herbal remedies to influence the sex of the child and intervene before birth (Honig and Hershatter, 1988; Croll, 2000). In addition, more recent field work by Chinese ethnographers shows that those couples who already had a girl were not only determined to have a second pregnancy, but also made every effort to identify the sex of the foetus even where the use of such technologies was illegal (Xie, 1995; Gu and others, 1998).

In field-group discussions, villagers openly admitted that they would have an abortion rather than a second daughter. "No matter how much money they had to spend it was worth it" so that now they were more likely to know the sex of the unborn child while, on one occasion, an estimated 80 per cent of those carrying a girl in their second pregnancy had an abortion (Xie, 1995). In

other very recent village studies, parents have defied birth control regulation and proceeded to have either two children (FM, MM, or MF) or three children with a configuration of FFM (Liu, 1995; Ku, 1998). In the absence of opportunities to intervene before birth, the figures for infanticide, infant and child mortality have increased and while there are few direct first-hand observations and discussions of such practices, there are rumours of discussions and disagreements between parents as to whether a daughter's birth should be registered, which is usually a sign that it is intended that she survives.

Several recent field studies have also showed that girls are more likely to be born at home where they are knowingly less likely to survive and in infancy and childhood are less likely to receive medical treatment or be taken to hospital. In one recent and comprehensive set of village discussions, parents reported abandonment and infanticide alongside various forms of lesser discrimination such as shorter periods of breastfeeding, smaller food allocations and fewer nutrients.

Most importantly, daughters between one and four years with older sisters and or brothers, had less daily family and health care (Wang and Li, 1994; Li and Zhu, 1999). However, such practices are much less likely to occur in cities and better developed rural areas where sex identification and sex selective abortion is an accepted outcome of reproductive management in order to achieve the same ends. Perhaps there is no greater testimony to the tension between family size and sex configuration and its acknowledged correlative threat to daughters, than the significant modifications made to the single-child family policy in the mid-1980s to permit a second child where the first-born is a daughter. Thus, it contributes to putting in place what is in effect a two-child or a single-son policy. With these concessions, the quest or struggle for a son has been magnified with the birth of a daughter not only still a disappointment, but also increasingly "an opportunity lost" to try for and bear that desired son within a two-child family.

In India, pregnancy is accompanied by much discussion and conversation centering on parental and familial hopes for sons, especially if a couple's previous children have all been daughters. The customary prayers and medicine-taking in the quest for a son, are even more pronounced now that couples hope to have smaller families and at least one or two sons (Jeffery and others, 1989; Jeffery and Jeffery, 1996). Hitherto, the loneliness and plight of the exhausted and sorrowing new mother who in "searching for a boy" has given birth to yet another girl was a familiar figure in the ethnographic literature.

Sometimes, so great was the determination not to have another daughter, that disappointment turned to infanticide. Several discussions in the literature about infanticide show poorer parents to be astutely aware of the contrasting immediate and long-term costs and benefits of girls and boys with the costs of bearing another daughter exacerbated by the likely expenses of her upkeep and dowry set against lesser benefits in terms of long-term care. The escalation in the costs of a dowry make bringing up a girl “very difficult nowadays” and the costs of two dowries prohibitive — so deciding the fate of many a second daughter (Buhmiller, 1990). Despite the rising numbers and spread of infanticide already documented in the statistics, the majority of daughters do survive birth, but they are still likely to follow a pattern of continuing disadvantage which, sliding into physical neglect, may threaten her chances of survival in later infancy and childhood. What is noticeable in the ethnographic literature is that very few parents could give exact information as to the cause of a daughter’s death for most had never reached a doctor for diagnosis (Jeffery and others, 1989). The studies document in some detail the frequency of lesser breastfeeding for female infants, less immunization and lesser access to nutritious foods, with unequal distribution of meat, fish and eggs. They also confirm that boys are taken to hospital for common diseases much more often than girls and that there are marked gender imbalances in speed, duration and costs of medical or hospital treatment (das Gupta and Bhat, 1997).

In these circumstances, many are now unlikely to want to continue child bearing in the hope of a son and thus resort in greater numbers and with greater urgency to both conventional and more radical interventions made possible by new technologies. Advertisements openly publicize opportunities for ensuring preferred pregnancy outcomes, and evidence from both consulting-room and community studies suggest that parents are familiar with and accept the use of such technologies which are now widely available at low cost.

Local studies show that the use of new techniques to determine the sex of the foetus followed by termination of a female pregnancy has become common among educated and less educated, rich and poor and in urban and rural locations (Jeffery and others, 1989; Patel, 1989; Basu, 1992; Arora, 1996). In urban consulting rooms, wealthy parents seem most anxious to avoid the sense of inferiority and loss of status associated with the absence of sons (Buhmiller, 1990). Most of those who avail themselves of these opportunities already have a daughter or two and want to ensure the birth of a son.

A focus on the strategic behaviour of parents across the region suggests that the reproductive preferences and calculations are the subject of much debate, which has been intensified as a result of fertility decline. There has been much debate about the degree to which new technologies or

prenatal strategies have supplemented or substituted for existing post-natal discriminatory methods (Goodkind, 1996; das Gupta and Bhat, 1997; Sudha and Rajan, 1999). Both demographic and ethnographic narratives suggest both that there has been some substitution as parents turn to newer -technologies instead of infanticide and neglect, and that newer technologies have also led to an increase in excess female mortality in East and South Asia. Monica das Gupta and Marie Bhut concluded that for India, there was an additional 1.3 million girls missing between 1981 and 1991 as a result of biased sex ratios at birth and have argued for an “intensification effect”. Their argument was confirmed by the worsening sex ratios in the most recent census (das Gupta and Bhat, 1997). Moreover, it can no longer be assumed or argued that such reproductive management is “unconscious”, rather the gender of the child, as well as numbers of children, have increasingly been brought within the “calculus of conscious control” to quote Ansley Coale’s (1973) memorable phrase.

A focus on the strategic behaviour of parents also suggests that cultural norms of gender as much as of family systems, critically inform reproductive goals. In sum, ethnographic voices in both India and China still speak of the birth of a daughter with some disappointment and ambivalence and it is clear that with declining fertility and smaller families, there is a new trade-off between the births of sons and daughters with intensified interest in reproductive management designed to achieve twin outcomes: a smaller family size alongside one or two sons. One way of resolving the increased tension would be for girls and boys to be reared similarly and valued equally. But what such interventionist management shows is that, practically and cognitively, girls still cannot substitute for boys and that both stated or inferred rationales underlying intensified reproductive management are firmly rooted in interpretations or reasonings of gender.

### **The reasonings of gender**

In ethnography, personal narratives, interview, ritual and everyday practice whether among the literate or non-literate, employed or secluded, or urban and rural populations in East and South Asia, two powerful messages emerge which have been confirmed by the statistics. The first is that children are gendered; the second is that cognitively daughters are reasoned to be secondary and a supplement, but rarely a substitute for sons. Notions of female secondariness and tmsubstitutability underlie persistent and intensified son preference. Rooted in the culture of gender, they suggest that an understanding of gender identity and the ways in which gender relations are defined and interpreted within everyday beliefs and behaviour, is an important factor in understanding choices and behaviour in familial reproductive management.

It is one of the arguments of this paper that daughters suffer by reason of gender and that this reasoning has been underplayed in previous analyses of son preference. Although daughters are the most junior and under-studied members of the female gender, even the very term “gender” has been used universally as if there is an assumed uniform agreement about its meaning and gender identity and relations are beyond culture. Demographers have given a great deal of attention to inter-generational relations, but until recently they have given rather less to gender relationships in understanding demographic behaviour (Watkins, 1993). Although the intensity of son preference and daughter discrimination has been linked to gender roles, relations and degrees of inequality, few studies have analysed this linkage in any detail and in doing so, interrogated the meanings attached to the term gender.

In ethnography, personal narrative, interview, ritual and everyday practice in cities and villages of East and South Asia, there is evidence of a number of beliefs about expectations and entitlements of sons and daughters which point the way to a distinctive regional culture of gender that emphasises difference, hierarchy, complementarity and unsubstitutability, all of which underlie gender bias and shape the process of reproductive management. The consistent use of gender stereotypes in the field suggests that for parents, whether literate or illiterate, employed or secluded, urban or rural and rich and poor, sons uniquely perform certain roles and activities which cannot possibly be undertaken by daughters. These are grounded in firm and unquestioned beliefs about gendered divisions of labour which have rigid boundaries separating complementary but hierarchical sets of activities that are still difficult to traverse.

Ethnographies also suggest that, in turn, everyday notions of gender identity in both rural and urban communities are constructed around these dichotomous sets of activities and spaces, so that gender itself is interpreted as more of a performative concept rooted in social practice, than of biological or physical attributes and reproductive capacities although these are included. It is not what one is, so much as what one does, that differentiates gender identity (Liu, 1997). The content of the activities categorized as either male or female may vary but there are few overlapping arenas or domains of activities. Indeed, it is a common experience for ethnographers to note that important activities may be left undone rather than performed by the “other” or “wrong” gender. Even tasks undertaken by boys and girls as young as five to six years, are seldom gender-neutral while family plans, expectations and entitlements are clearly rooted in the anticipation that sons and daughters will assume customary adult male and female roles that are not only different but also hierarchical and rarely inter-changeable.

Because male work and contributions to familial security, fortunes and future are considered more significant than those of women, the importance attached to the potential of sons in terms of their type of work, levels of economic support and contribution to familial continuity are such that gender hierarchies abound.

However, notions of gender hierarchy and equality are less important in this cultural context than gender complementarity alongside son preference. It is the emphasis on the recursive notion of complementariness in Asian cosmologies, philosophies, movements and everyday practice which seems particularly relevant in understanding the continuing bias in the values attached to children, son preference and interest in gender balance, all of which characterize the process of reproduction management.

In China, there have been a number of recent articles expressing the increasingly popular view that there is a distinctive female “outlook” and “world” which is inherently different from and complementary to that of the males of their own culture. The women’s movement, there, has taken great pains to stress that it does not wish to denigrate men or take men as their main adversary in a competitive or oppositional stance seen to be so common in the West.

As several feminist scholars in China have argued, the rhetoric of Chinese feminism speaks first and foremost for basic social justice and its concerns are universal to both men and women (Li, 1993; Shu, 1993; Lin and others, 1998). For India, it is similarly argued that it is complementarity which characterizes the relations between men and women, rather than the contradictory and oppositional relations between the sexes that might exist elsewhere (Fruzetti, 1975). Likewise, it has been noted that it is a role allocation on the basis of gender rather than equality between men and women, that is the issue in subcontinental societies (Menski, 1991). Activists in the women’s movement in India have also stressed the divisions between women and men’s separate but complementary spheres and emphasized that “it is really a mistake to see women as competing with and being restricted by men”. Rather, they argue that male and female roles are “clearly distinguished and the sexes are seen as complementary to each other” (Jacobson and Wadley, 1977).

If gender categories are constructed around bounded divisions of labour and activities that are different, hierarchical and complementary, then ethnographic narratives suggest that there may be a number of important differences cross-culturally in meanings attributed to the term gender. In North America and Europe for example, it is common to emphasize the similarities between males and females or qualities common to both, and to emphasize

androgynous or overlapping categories or domains of activities. Notions of progress and development include the reduction of gender hierarchy in order to achieve equity, or at least equality of opportunity and, to achieve this end, relations between males and females are often conceived in terms of competition or opposition.

In comparison, as ethnographic narratives of East and South Asia suggest, there is an emphasis on gender difference or qualities and activities which are unique to females, on divisions, segregation or separation of activities, on complementarity albeit hierarchical rather than equity, and on balance or harmony, rather than competition or opposition. This coherent emphasis on gender difference, complementarity and balance in both China and India, has its roots in ancient Confucian and Vedic philosophic and religious texts which stress the cosmological harmony of complementary spheres, in which each half of the binary dichotomy is complementary, unsubstitutable and more hierarchical than equal. In recent years, this long-standing emphasis on gender difference has been reasserted by manufactures, retailers, Governments and women's movements alike, as they emphasise Asian values or take distinctive responses to globalization that are local or culturally specific. It is this focus on gender difference and complementarity, derived from ancient text and time-honoured perception and reinforced by contemporary assertions of Asian values, that underlies the dominant notion of unsubstitutability that is clearly a recurrent theme in shaping the processes and outcomes of reproductive management across the region.

Without a change in gender reasoning, the rapid decline in fertility and the now preferred or imposed smaller family size in East and South Asia, will mean that daughters, rarely able to substitute for sons, will continue to be subject to new trade-offs as, more than ever before, they "take the place of" or "limit the opportunities for" still preferred sons. However, despite new and significant moves to counter young female discrimination, there continues to be a continent-wide denial by Governments and societies that it is the parental attitudes, choices and behaviours underlying reproductive management which threaten her birth and survival rights. In East and South Asia, it is the continuing invisibility of a daughter's contribution and reliance on son-centered inter-generational contracts based on notions of gender difference, complementarity and unsubstitutability (alongside new technological control over the gender composition of the family), that have meant that daughters are now increasingly at risk.

Until there are new meanings ascribed to gender identity and relations in East and South Asia, further tension and conflict between fertility decline and smaller family size on the one hand and family sex composition or son

preference on the other, is unlikely to be resolved without recourse to gendered fertility controls. In such circumstances, excess female mortality is likely to continue to be, as Amartya Sen (1990) has cogently argued, “one of the momentous and neglected of world-wide problems”.

### References

- Abeykoon, A.T. (1995). “Sex preference in South Asia: Sri Lanka an outlier”, *Asia-Pacific Population Journal* 10(3):5-16.
- Agnihotri, S.B. (1995). “Missing females; a disaggregated analysis”, *Economic and Political Review* 19 August:2074-2082.
- Arora, D. (1996). “The victimising discourses: sex technologies and policy”, *Economic and Political Weekly* 7 February:21-35.
- Basu, A.M. (1992). *Culture, the Status of Women and Demographic Behaviour* (Oxford, Clarendon Press).
- Bulmiller, E. (1990). *May You be the Mother of a Thousand Sons: A Journey among Women in India* (New York, Penguin books).
- Caldwell, J.C. (1976). “Towards a restatement of demographic theory”, *Population and Development Review* 2(3,4):321-346.
- Caldwell, J. (1993). “The Asian fertility revolution: its implications for transition theories”, in R Leete and I. Alam, *The Revolution in Asian Fertility*, (Oxford, Clarendon Press), pp. 299-316.
- Census Report (2001). Financial Times, London 29 March.
- Chinkath, S.R. and V.B. Athreya (1997). “Female infanticide in Tamil Nadu: some evidence”, *Economic and Political Weekly* 26 April:21-28.
- Chowdhury, A., R Bairangi, and M.A. Koenig (1990). “Effects of family sex composition on fertility preference and behaviour in rural Bangladesh”, *Journal of Biological Science* 25:455-464.
- Chowdhury, M.K. and R. Bairagi (1990). “Son preference and fertility in Bangladesh”, *Population and Development Review* 16(4):749-757.
- Coale, A. (1973). “The demographic transition”, Proceedings of the International Population Conference, Liege International Union for the Scientific Study of Population (IUSSP) 1: 53-72.
- \_\_\_\_\_ (1991). “Excess female mortality and the balance of sexes in the population: an estimated number of missing females”, *Population and Development Review* 7(3):517-523.
- \_\_\_\_\_ and J. Banister (1994). “Five decades of missing females in Asia”, *Demography* 31(3):459-480.
- Croll, E. (1995). *Changing Identities of Chinese Women* (London, Zed Press).

- \_\_\_\_\_ (2000). *Endangered Daughters: Discrimination and Development in Asia* (London, Routledge).
- das Gupta, M. (1987). "Selective discrimination against female children in rural Punjab", *Population and Development Review* 9(1):77-100.
- \_\_\_\_\_ and P.N.M. Bhat (1997). "Fertility decline and increased manifestation of sex bias in India", *Population Studies* 51:307-315.
- das Gupta, M. and S. Li (1999). "Gender bias in China, South Korea and India 1920-1990: effects of war and famine", *Development and Change* 30(3):619-652.
- Dyson, T. and M. Moore (1983). "On kinship structure, female autonomy and demographic behaviour in India", *Population and Development Review* 9(1):35-60.
- Freedman, R, M. Chang and T. Sun (1994). "Taiwan's transition from high fertility to below-replacement levels", *Studies in Family Planning* 25(6):317-331.
- Fruzetti, L. (1975). "Conch shells, bangles, iron bangles: an analysis of ritual in Bengali society", unpublished PhD thesis, University of Minnesota, pp. 56, cited in Thompson, C. "Women, fertility and the worship of gods in a Hindu village", in P. Holden. (1983). *Women's Religious Experiences* (London, Croom Helm), pp. 113-131.
- George, S., R. Abel and B.D. Miller (1992). "Female infanticide in rural South India", *Economic and Political Weekly* 30 May:1153-1156.
- Good, S. (ed.) (1990). *Violence against women* (Jaipur, India, Arihant Publications).
- Goodkind, D. (1995). "Vietnam's one-or-two child policy in action", *Population and Development Review* 21(1):90-107.
- \_\_\_\_\_ (1996) "On substituting sex preference strategies in East Asia; does prenatal sex selection reduce postnatal discrimination?," *Population and Development Review*, 22(1):111-125.
- Gu, B. and K. Roy (1995). "Sex ratios at birth in China with reference to other areas in East Asia", *Asia-Pacific Population Journal*, 10(3):17-42.
- Gu, B. and Y. Li (1994). "Sex ratios at birth and son preference in China", paper presented at UNFPA Symposium on "Issues Related to Sex Preference for Children in the Rapidly Changing Demographic Dynamics in Asia", Seoul, 21-24 November.
- Gu, B. and Yi Xu (1994). "A general view of China's sex ratio at birth", *Zhongguo Renkou Kexue (China Population Science)* Vol.3.
- Gu, B., Z. Xie and K. Hardee (1998). *The Effects of Family Planning on Women's Lives: The Case of the People's Republic of China* (Durham, North Carolina, Family Health International).
- Haq, Mahbub ul Development Centre. (2000). *Human Development in South Asia 2000: The Gender Question* (London, Oxford University Press).
- Honig, E. and G. Hershatter (1988). *Personal Voices: Chinese Women in the 1980s* (California, Stanford University Press).
- Ikels, C. (1993). "Settling accounts; the inter-generational contract in the age of reform" in D. Davis and S. Harrell, *China's Families in the Post-Mao Era* (Berkeley, University of California Press), pp. 307-333.

- Jacobson, D. and S. Wadley (1977). *Women in India: Two Perspectives* (New Delhi, Manchar Press).
- Jeffery, R, P. Jeffrey and A. Lyon (1984). "Female infanticide and amniocentesis", *Social Science Medicine* 19(11):1207-1212.
- Jeffery, P. and R. Jeffrey (1996). *Don't Marry Me to a Plowman!: Women's Everyday Lives in Rural North India* (Boulder, Colorado, Westview Press).
- \_\_\_\_\_ and A. Lyon (1989). *Labour Pains and Labour Power: Women and Child-bearing in India* (India and London, Zed Books).
- Kapadia, K. (1995). *Siva and Her Sisters: Gender, Caste and Class in Rural South India* (Boulder, Colorado, Westview Press).
- Kishor, S. (1993). "May God grant sons to all: gender and child mortality in India", *American Sociological Review* 58:247-265.
- Klassen, S. (1994). "Missing women reconsidered", *World Development* 22:1061-1071.
- Krishnaraj, M. and K. Chanana (eds) (1989). *Gender and the Household Domain: Social and Cultural Dimensions* (New Delhi, Sage Publications).
- Ku, H. (1998). *Defining Zeren: Cultural Politics in a Chinese Village*, unpublished Ph.D thesis, SOAS University of London.
- Leete, R. and I. Alam (1993). *The Revolution in Asian Fertility* (Oxford, Clarendon Press).
- Li, L. (1993). "Women are the natural masters of the perceptual world", *Women of China, Beijing, China*, 1 January: 35-7.
- Li, S. and C. Zhu (1999). "Gender differences in child survival in rural China: a case study", paper presented at the Annual Meeting of Population Association of America, New York, 25-27 March.
- Lin, C., B. Liu and Y. Jin (1998). "Women's studies in China", in A.M. Jaggar and I.M. Young (eds.), *A Companion to Feminist Philosophy* (Oxford, Blackwell).
- Liu, X. (1995). *Zhao Villagers Everyday Practices in a post-reform Chinese Village*, unpublished Ph.D thesis, University of London.
- Malhotra, A., R. Vanneman and S. Kishor (1995). "Fertility, dimensions of patriarchy and development in India", *Population and Development Review* 21(2):281-305.
- Menski, W.F. (1991). "Marital exceptions as dramatised in Hindu marriage rituals" in J. Leslie (ed.), *Roles and rituals for Hindu Women* (London, Pinter Publications).
- Miller, B. D. (1981). *The Endangered Sex* (Ithaca, USA, Cornell University Press).
- Milwertz, C. (1997). *Accepting Population Control: Urban Chinese women and the One-Child Family Policy* (London, Curzon Press).
- Muhuri, P.K. and S.H. Preston (1991). "Effects of family composition on mortality differentials by sex among children in Matlab, Bangladesh", *Population and Development Review* 17(3):415-434.

- Murthi, M., A. Guio and J. Dreze (1995). "Mortality, fertility and gender bias in India; a district-level analysis", *Population and Development Review* 21(4):745-82.
- Nongmin Ribao* (1992). (Peasants' Daily) Beijing, 5 December.
- Park, C.B. and N. Cho (1995). "Consequences of son preference in a low fertility society: imbalance of the sex ratio at birth in Korea", *Population and Development Review* 21(1):59-84.
- Patel, V. (1989). "Sex determination and sex-preselection tests in India: modern techniques of feticide", *Bulletin of Concerned Asian Scholars* 21(5):2-10.
- Potter, S. and J. Potter (1990). *China's Peasants: The Anthropology of a Revolution* (Cambridge, Cambridge University Press).
- Pun, N. (1997). *Becoming Dagongmei: Body, Identity and Transgression in Reform China*, unpublished Ph.D Thesis, SOAS, University of London.
- Rahman, M., J. Akbar, J. Phillips and S. Becker (1992). "Contraceptive use in Matlab, Bangladesh: the role of gender preference", *Studies in Family Planning* 23(4):229-242.
- Rele, J.R and I. Alam (1993). "Fertility transition in Asia: the statistical evidence", in R. Leete and I. Alam (eds.), *The Revolution in Asian Fertility* (Oxford, Clarendon Press).
- Sargent, J., B. Harriss-White and S. Janakaraan (1996). "Development, property and deteriorating life chances for girls in India: a preliminary discussion with special reference to Tamil Nadu", paper presented at Conference on Adjustment and Development: Agrarian Changes, Markets and Social Welfare in South India 1973-1993, Madras Institute of Development studies, 27-29 March.
- Scrimshaw, S. (1981). "Infant mortality and behaviour in the regulation of family size", in N. Eberstadt (ed.), *Fertility Decline in Less Developed Countries*, (Westport, Praeger Publishers), pp. 295-318.
- \_\_\_\_\_ (1984). "Infanticide in human populations: human and individual concerns" in G. Hausfater and S.B. Hrdy (eds.), *Infanticide: Comparative and Evolutionary Perspectives*, (New York, Aldine), pp. 439-462.
- Sen, A. (1987). *Gender and Cooperative Conflicts* (Helsinki, World Institute for Development Economics Research).
- \_\_\_\_\_ (1990). "More than 100 million women are missing", *New York Review of Books* 20 December:61-66.
- Shah, I. and J.G. Cleland (1993). "High fertility in Bangladesh, Nepal and Pakistan: motives vs means", in R. Leete and I. Alam (eds.) *The Revolution in Asian Fertility* (Oxford, Clarendon Press), pp. 189-199.
- Shu T. (1993). "Different views", *Women of China* 1 March:43,49.
- Sudha, S. and S.I. Rajan (1999). "Female demographic disadvantage in India 1981-1991", *Development and Change* 30(3):585-618.
- Sun, F., S. Li and N. Li (1993) "A study of the under-reporting of deaths in the 1990 census", *Population Studies of China* 2:20-25.

- Tu, P. (1992). "The sex ratios at birth in China: results from the 1990 census", paper presented at International Seminar on China's 1990 Population Census, Beijing 19-23 October.
- UNICEF (United Nations Children's Fund) (1999). *The State of the World's Children* (New York, UNICEF).
- Wang, S. and N. Li (1994). *Women's Voices from Rural Yunnan Needs Assessment of Reproductive Health* (Beijing).
- Watkins, S. (1993). "If all we know about women was what we read in demography, what would we know?", *Demography* 30:351 1-3577.
- Wolf, D. (1997). "Daughters, decisions and domination: an empirical and conceptual critique of household strategies", in N. Visanathan, L. Duggan, L. Nisonoff and N. Wiegersma, *The Women, Gender and Development Reader*, (London, Zed Press), pp. 118132.
- Wolf, M. (1985). *The Revolution Postponed: Women in Contemporary China* (California, Stanford University Press).
- Xie, Z. (1997). "Demand for childbearing of Chinese farmers and its changes in Zhejiang Province, China", in Symposium on Demography in China, Proceedings of the 23rd IUSSP General Population conference, Beijing, pp. 140-60.
- Yuan, J. and G.W. Skinner (2000). "Shaping the gender configurations of offspring sets: the spatial patterning of reproductive strategising in contemporary China", paper presented for the panel on Gender in China's Spatial Economy/Society, Annual Meeting of the Association for Asian Studies, San Diego, 11 March.
- Zeng, Y., P. Tu, B. Gu, Y. Xu, B. Li and Y. Li (1992). "An analysis of the causes and implication of the recent increases in the sex ratios at birth in China", paper presented at International Seminar on China's 1990 Population Census', Beijing 19-23 October.