Tibetan Fertility Transitions: Comparisons with Europe, China, and India

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Abstract: *This paper focuses on fertility transitions that have recently occurred in the Tibet Autonomous Region (TAR) and among Tibetan exiles living in South Asia. The Tibetan cases are compared with fertility transitions in China, India, and historical Europe with respect to (1) the social and demographic forces that shaped pre-transitional levels of fertility, (2) marriage and non-marital fertility, (3) the timing, duration, and magnitude of the fertility transitions, and (4) the impact that the fertility transitions have had on sex ratios. The analysis shows that fertility in pre-transitional Tibetan societies was more similar to Europe than China or India, due to factors related to the family system and the limitations it imposed on marriage; that although Tibetan fertility transitions started comparatively late in time, they proceeded at an extraordinarily rapid pace; and that unlike in China and India, fertility transitions among Tibetans have not been accompanied by increasingly skewed sex ratios that favor males.*

Overview and Objectives

This paper focuses on fertility transitions, or societal-level changes from initial conditions of high fertility to completed conditions of low fertility. Generally a population is considered to have finished a fertility transition when the total fertility rate (TFR)[1] reaches "replacement level": an average of 2.1 births per woman, the level of reproduction needed for the population to numerically replace itself. That is precisely what has occurred recently among Tibetans living in China and South Asia (Figure 1). In the late 1980s Tibetan women bore six children on average,

[1] For the reader's convenience I am providing the following definitions of key demographic measures that appear in this text. The total fertility rate (TFR) is "a synthetic cohort estimate of the average number of children who would be born to each woman if current age-specific birth rates remained constant." The total marital fertility rate (TMFR) is the same as the TFR except that it is an average for married women only. The age-specific fertility rate (ASFR) is "the number of children born to women of a given age divided by the total number of women that age." See John R. Weeks, *Population: An Introduction to Concepts and Issues* (Belmont, CA: Wadsworth, 2005).

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but by the turn of the millennium – a time span of a mere fifteen years – they had achieved below replacement fertility. The importance of understanding this dramatic demographic shift is that it has substantial implications for Tibetan societies, ranging from the consequences of population aging to the combined impacts that population decline and migration will have on Tibetan identity. Those are issues that I deal with in detail elsewhere.[2] The more limited objective of this paper is to compare Tibetan fertility transitions with similar demographic processes that have occurred, or are occurring, in Western Europe, China, and India.

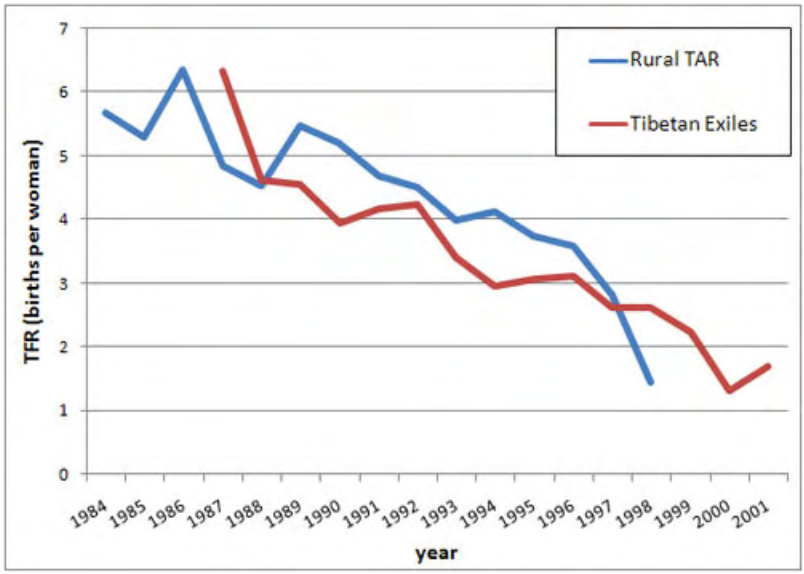

Figure 1: Parallel Fertility Declines in Rural TAR and among Exiles in South Asia.

The analysis draws upon research in four temporally and geographically distinct settings: Skyid grong (1943 to 1958, formerly a district in Tibet), Sa dmar (1990s to present, an ethnically Tibetan village in the highlands of Nepal's Nub ri Valley), Tibetan exiles in South Asia (1959 to present), and the Tibet Autonomous Region (TAR) of China (1950s to present).[3] Two of these cases (Skyid grong and Sa dmar)

[2] Geoff Childs, *Tibetan Transitions: Historical and Contemporary Perspectives on Fertility, Family Planning, and Demographic Change* (Leiden: Brill, 2008).

[3] I used a combination of ethnographic (participant observation, in-depth interviewing) and demographic (household and reproductive history surveys) methods for collecting data for each of these case studies. Regarding data sources, for Skyid grong I used a 1958 household register compiled by local officials. I have demonstrated elsewhere that the data in this document is very reliable. See Geoff Childs, "Polyandry and Population Growth in a Historical Tibetan Population," *The History of the Family* 8 (2003): 423-44. For Nub ri I personally collected demographic and economic data on 350 households (Household Economic Survey) and childbearing data on all women aged fifteen and above in those households (Reproductive History Survey). Before commencing these surveys I had already established good rapport with the people of Nub ri, and by living in their midst for a prolonged period of time I had numerous means to confirm the reliability of the data recorded in the surveys. For the exiles I used data contained within the Planning Commissions' two demographic surveys, the 1998 Tibetan Demographic Survey (1998 TDS) and a follow-up sample survey from 2001 which remains

represent pre-transitional societies with moderately high fertility rates; the other two (exiles and the TAR) represent rapidly modernizing societies that have recently undergone sharp fertility declines.[4] In this paper I use the term "pre-transitional" in reference to those populations that have not commenced the shift from high to low fertility. These are populations where limiting fertility is not an overt objective of families, and where modern means of birth control are generally absent. I use "transitional" and "post-transitional" in reference to those populations that are in the midst of, or have already completed, their fertility transitions.

This paper situates Tibetan demographic processes within an ongoing global demographic transition by comparing Tibetan fertility transitions with those experienced by Europe, China, and India.[5] The specific points for comparison are the following: (1) levels of pre-transitional fertility, (2) proportions of women married and levels of non-marital fertility, (3) the timing and duration of fertility transitions, and (4) changing sex ratios associated with fertility declines.

Comparison 1: Pre-Transitional Levels of Fertility

Comparisons between Tibetan and historical European populations can be made by using indices developed by demographer Ansley Coale. Coale's four indices are labeled I*f* (overall fertility), I*g* (marital fertility), I*h* (non-marital fertility, or illegitimate fertility), and I*m* (index of marriage).[6] Table 1 compares the indices

unpublished. For the 1998 TDS see Planning Council, *Tibetan Demographic Survey 1998: Tabularized Data* (Dharamsala: Planning Council, Central Tibetan Administration, Gangchen Kyishong, 2000). Through lengthy methodological discussions with key players who designed and carried out the surveys and through an analysis of potential errors and omissions, I am confident that the information contained within these data sets is reliable. In addition, I did my own ethnographic research in the exile communities of Dharamsala, Bir, and Kathmandu. For rural Tibet I used survey data of exceptionally high quality collected by Melvyn Goldstein and colleagues on all households and women of reproductive age in the fourteen villages of their study area. I also used data from China's 2000 census which I consider to be less reliable than the data collected by Goldstein and colleagues.

[4] Modernization, a process that involves changing economic and educational patterns and concomitant shifts in family norms, is generally associated with fertility declines. Ideally, the analysis of a fertility transition involves the longitudinal study of a carefully delineated population to document the interrelations between social, economic, political, and demographic variables. Such an analysis is only possible if one has access to survey data collected at regular intervals, or vital registers that accurately record all births, deaths, and marriages. I had access to neither, and therefore made a decision – born of necessity and opportunity – to compare Tibetan societies that differ by time, geography, and scale, but most importantly by where they stand along the continuum of a transition from high to low fertility. This comparative approach has the advantage of documenting local nuances that are unique to each society, while deriving through induction principles that characterize pre-transitional and transitional Tibetan populations.

[5] Given that these comparisons deal with a continent on the one hand, and the world's two most populous nations on the other, I am compelled to engage in some sweeping generalizations that mask considerable regional and temporal variability. That is a necessary concession when undertaking comparative research at this broad level of analysis.

[6] The first three of these are indirectly standardized ratios that "express the level of fertility as the proportion of fertility that a population would have had if it had experienced the highest fertility pattern on record." See Colin Newell, *Methods and Models in Demography* (New York: The Guilford Press, 1988), 44-49. The standard upon which these proportions are based is the marital age-specific fertility rates (MASFR) of Hutterites, an Anabaptist Christian group living in the western plains of Canada and the United States who married early, used no contraception, and maintained short birth intervals. Coale's

for the two pre-transitional Tibetan societies with those for several European countries.[7] The temporal frame for the European countries is 1880-1900, which coincides with the time when the European fertility declines commenced. The data is summarized in Table 2 where the European countries are divided into Western and Eastern Europe according to an important distinction made by Hajnal concerning household formation systems.[8] Because of subsistent strategy similarities between the Himalayas and the Alps, Table 2 also includes indices for eight Alpine cantons of Switzerland.[9]

Table 1: Coale's Indexes Compared

Index of Overall Fertility (I*f*)		**Index of Marital Fertility (I*g*)**		**Index of Non-Marital Fertility (I*h*)**		**Index of Marriage (I*m*)**	
France	.267	France	.460	Bulgaria	.009	Ireland	.370
Ireland	.268	**Skyid grong**	**.540**	Ireland	.011	Switzerland	.388
England/Wales	.310	**Sa dmar**	**.560**	Greece	.015	Norway	.406
Switzerland	.317	Hungary	.589	Netherlands	.023	**Skyid grong**	**.408**
Sweden	.319	England/Wales	.621	England/Wales	.026	Sweden	.409
Norway	.334	Romania	.645	Yugoslavia	.031	Belgium	.435
Portugal	.341	Italy	.648	Switzerland	.032	Scotland	.438
Skyid grong	**.347**	Yugoslavia	.649	Spain	.041	England/Wales	.447
Denmark	.348	Spain	.650	France	.043	Finland	.449
Italy	.348	Portugal	.664	Belgium	.048	Portugal	.452
Scotland	.350	Austria	.677	Russia	.048	Denmark	.456
Belgium	.354	Denmark	.686	Norway	.049	Netherlands	.469
Finland	.375	Greece	.688	Poland	.050	Germany	.501
Spain	.391	Bulgaria	.694	Scotland	.052	Austria	.509

indices are calculated by applying the Hutterite rates to the population under study in order to get an expected number of births, and then comparing that with the actual number of births the population experienced. The result is presented as a proportion of actual births to expected births. For example, I*f* (overall fertility) for Skyid grong was .347, meaning that the women of Skyid grong gave birth to only 34.7 percent of the number of children they would have if they had experienced the same MASFRs as the Hutterites. The fourth index, I*m*, is an index of marriage, which is calculated by multiplying the proportion of married women in each age group by the Hutterite MASFRs.

[7] Data from Ansley J. Coale and Roy Treadway, "A Summary of the Changing Distribution of Overall Fertility, Marital Fertility, and the Proportion Married in the Provinces of Europe," in *The Decline of Fertility in Europe*, ed. A. Coale and S. Watkins (Princeton, NJ: Princeton University Press, 1986), 80-152.

[8] John Hajnal, "European Marriage Patterns in Perspective," in *Population in History: Essays in Historical Demography*, ed. D. V. Glass and D. Eversley (London: Edward Arnold, 1965), 101-48; John Hajnal, "Two Kinds of Preindustrial Household Formation Systems," *Population and Development Review* 8 (1982), 449-94.

[9] Pier Paolo Viazzo, *Upland Communities* (Cambridge: Cambridge University Press, 1989), 91.

Sa dmar	**.401**	Finland	.698	Finland	.054	France	.538
Austria	.402	Sweden	.700	Sweden	.054	Italy	.549
Netherlands	.402	Ireland	.706	Italy	.063	Spain	.575
Germany	.404	Poland	.720	Denmark	.064	**Sa dmar**	**.606**
Greece	.440	Switzerland	.724	**Sa dmar**	**.068**	Poland	.631
Hungary	.442	Scotland	.733	Germany	.072	Greece	.632
Poland	.472	Germany	.735	Portugal	.079	Hungary	.692
Bulgaria	.514	Belgium	.749	Hungary	.111	Russia	.696
Romania	.528	Norway	.752	Austria	.118	Romania	.727
Yugoslavia	.530	Russia	.755	Romania	.216	Bulgaria	.737
Russia	.540	Netherlands	.831	**Skyid grong**	**.225**	Yugoslavia	.808

Source: Ansley J. Coale and Roy Treadway, "A Summary of the Changing Distribution of Overall Fertility, Marital Fertility, and the Proportion Married in the Provinces of Europe," in The Decline of Fertility in Europe, ed. A. Coale and S. Watkins (Princeton, NJ: Princeton University Press, 1986), 31-181.

Table 2: Coale's Indices Summarized by Region

Index of Overall Fertility (I*f*)		**Index of Marital Fertility (I*g*)**		**Index of Non-Marital Fertility (I*h*)**		**Index of Marriage (I*m*)**	
Swiss Alps	.313	Skyid grong	.540	Swiss Alps	.016	Skyid grong	.408
W. Europe	.346	Sa dmar	.560	W. Europe	.052	Swiss Alps	.431
Skyid grong	.347	E. Europe	.677	Sa dmar	.068	W. Europe	.462
Sa dmar	.401	W. Europe	.690	E. Europe	.069	Sa dmar	.606
E. Europe	.495	Swiss Alps	.710	Skyid grong	.225	E. Europe	.703

Sources: For Europe, Coale and Treadway, "Summary"; for Swiss Alps, Viazzo, Upland Communities.

Table 1 shows that overall fertility in Skyid grong lies at the middle to lower end of the spectrum for Europe, while Table 2 shows that fertility in Skyid grong is higher than in the Swiss Alps but nearly identical to the average for Western Europe. Table 1 illustrates that fertility in Sa dmar lies close to the center of the European pre-transitional spectrum, while Table 2 reveals that it lies slightly above the Western European average yet is considerably below the Eastern European average.

The level of overall fertility in a pre-transitional population is shaped by the combined forces of marriage, marital fertility, and non-marital fertility. Examining the four indexes together helps explain why overall fertility in Skyid grong and Sa dmar is similar to Western Europe despite the comparatively low levels of marital fertility seen in Table 2. The pre-transitional Tibetan populations distinguish themselves from the European ones with respect to marital and non-marital fertility. France is the only country with a lower index of marital fertility than Skyid grong and Sa dmar, which should come as no surprise considering that the fertility

transition began in France much earlier than in the rest of Europe. On the other hand, no European nation has an index of non-marital fertility higher than Skyid grong's. Simply stated, Skyid grong's overall fertility is given a considerable boost by the high level of non-marital fertility. This phenomenon counteracts the fertility-depressing effect of Skyid grong's low index of marriage, and partially compensates for the comparatively low index of marital fertility. In the case of Sa dmar, the higher frequencies of marriage and out-of-wedlock childbearing push the index of overall fertility slightly above the average for Western Europe even though marital fertility is comparatively low. In sum, the levels of overall fertility in Skyid grong and Sa dmar are similar to the average for Western Europe, but were reached via different routes.

Comparisons can also be made using conventional fertility measures such as the total fertility rate (TFR), total marital fertility rate (TMFR), and marital age-specific fertility rate (MASFR). TFRs in pre-transitional Chinese societies were between 5.5 and 6.0 births per woman.[10] In Western Europe during the latter part of the nineteenth century TFRs ranged from 4.1 to 6.2.[11] In India the TFR was between 5.7 and 6.2 births per woman at the beginning of the twentieth century.[12] In light of this evidence, Sa dmar's TFR of 5.3 births per woman fits within the range of fertility in historical Europe, and is just below that of pre-transitional China and India. Skyid grong, with a TFR of 4.4 births per woman, lies at the low end of the European fertility spectrum and well below the levels found in China and India.

The total marital fertility rates (TMFR) for Skyid grong (6.2) and Sa dmar (6.5) are at the upper range of 5.3 to 6.3 found in pre-transitional Chinese populations,[13] but at the lower range of 6.6 to 7.1 births per married woman found in pre-transitional Indian populations.[14] In contrast, marital fertility in Europe was considerably higher. TMFRs ranged from 7.6 (England) to 9.3 (Switzerland) births

[10] George W. Barclay, Ansley J. Coale, Michael A. Stoto, and T. James Trussell, "A Reassessment of the Demography of Traditional Rural China," *Population Index* 42 (1976): 606-35; Ansley J. Coale and Chen Shengli, *Basic Data on Fertility in the Provinces of China, 1942-1982* (Honolulu: East-West Center, 1987); James Lee and Wang Feng, *One Quarter of Humanity: Malthusian Mythologies and Chinese Realities* (Cambridge: Harvard University Press, 1999).

[11] Ansley J. Coale, "The Decline of Fertility in Europe since the Eighteenth Century as a Chapter in Demographic History," in *The Decline of Fertility in Europe*, ed. A. Coale and S. Watkins, (Princeton, NJ: Princeton University Press, 1986): 5-6.

[12] Coale, The Decline of Fertility in Europe, 17; P. N. Mari Bhat, "Mortality and Fertility in India, 1881-1961: A Reassessment," in *India's Historical Demography: Studies in Famine, Disease and Society*, ed. T. Dyson (London: Curzon Press, 1989); Arup Maharatna, "On Tribal Fertility in Late Nineteenth and Early Twentieth Century India," *Working Papers Series* 98.01 (Harvard Center for Population and Development Studies, 1998).

[13] Lee and Wang, *One Quarter of Humanity*, 85.

[14] John B. Wyon and John E. Gordon, *The Khanna Study: Population Problems in the Rural Punjab* (Cambridge, MA: Harvard University Press, 1971); Bhat, "Mortality and Fertility in India."

per woman.[15] Figure 2 compares MASFRs for married women aged 20-44. Note how the pattern for the Tibetan populations (the averages of Skyid grong and Sa dmar) most closely resembles the Indian pattern. The fact that MASFRs and TMFRs in the pre-transitional Tibetan populations are consistently lower than in Europe is perhaps explained by relatively poorer economic and health conditions that induced sub-fecundity in many women. More evidence is needed to confirm or reject this hypothesis. Another possible explanation is that, similar to India and China,[16] the relatively low marital fertility among Tibetans may be evidence that people did in fact exert some control over their reproduction.

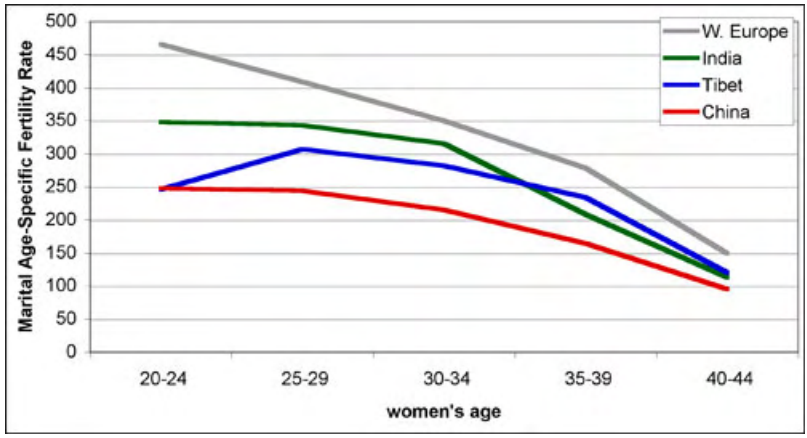

Figure 2: Comparison of Marital Age-Specific Fertility Rates.

In summary, total fertility rates in the pre-transitional Tibetan societies are considerably lower than those found in pre-transitional China and India despite similar levels of marital fertility. Therefore, the discrepancy in aggregate fertility cannot be caused by a difference in marital fertility. Rather, it is a result of the fact that marriage in the Tibetan societies was far less frequent. The difference in total fertility would have been even greater had it not been for the fact that the relatively high level of out-of-wedlock childbearing in the Tibetan societies partially offset the fertility-depressing effect of female non-marriage.

Comparison 2: Marriage and Non-Marital Fertility

Tables 1 and 2 compared the index of marriage for Skyid grong and Sa dmar with pre-transitional European societies. Table 3 provides a more direct way for assessing similarities and differences by comparing the percentages of women who have never married by age group. Note that, with respect to female non-marriage, the

[15] Using data presented by Flinn I calculated TMFRs for several countries and regions prior to 1750. Michael W. Flinn, *The European Demographic System, 1500-1820* (Baltimore: Johns Hopkins University Press, 1981).

[16] Nigel Crook, "On the Comparative Historical Perspective: India, Europe, the Far East," in *India's Historical Demography: Studies in Famine, Disease and Society*, ed. T. Dyson (London: Curzon Press, 1989); Lee and Wang, *One Quarter of Humanity*.

Tibetan populations are far more similar to Western European ones than to those of Eastern Europe, China, or India. The vast majority of women in pre-transitional India and China marry before turning twenty-five, in contrast to Western European and Tibetan societies, where a sizeable proportion remain unmarried even into their late forties.

Table 3: Percent of Women Never Married, by Age

	Women's Age		
Population	**20-24**	**25-29**	**45-49**
Skyid grong	81.1	57.3	28.6
Western Europe	72.0	42.0	16.0
Sa dmar	47.6	35.7	12.5
Eastern Europe	27.0	8.0	3.0
Liaoning[17]	10.5	2.5	0.2
India (1961)	6.0	1.9	<0.5

Sources: for Western and Eastern Europe, Hajnal, "European Marriage Patterns," 102-103; for Liaoning, Lee and Campbell, Fate and Fortune, 85; for India, Das and Dey, "Female Age at Marriage."

In India and China, marriage was traditionally a prerequisite for childbearing. Because female marriage was early and nearly universal, illegitimacy was rare.[18] In contrast, people in Skyid grong and Sa dmar attach little social stigmatism to illegitimacy,[19] and unlike in other Tibetan communities,[20] men do not face stiff economic penalties for fathering children out of wedlock. The most significant consequences of illegitimacy are borne by the illegitimate children themselves who, in the case of boys, stand no chance to inherit their father's land or herds and are thereby consigned to the economic margins of society. Illegitimacy was not only tolerated in Skyid grong and Sa dmar, it was quite common as evidenced by the high indices of non-marital fertility in those societies (see Tables 1 and 2).

Similarly, the level of non-marital fertility in Europe was quite high. Women typically married in their mid to late 20s. Before 1750 illegitimate births in Western Europe ranged from 2.5 to 5.4 percent of all births, but then rose to between 4.7 and 11.9 percent throughout most of the nineteenth century,[21] before declining by

[17] Age categories = 21-25, 26-30, and 46-50.

[18] Monica Das Gupta, "Selective Discrimination against Female Children in Rural Punjab, India," *Population and Development Review* 13 (1987); Lee and Wang, *One Quarter of Humanity*.

[19] Geoff Childs, "Namas (mna' ma) and Nyelus (nyal bu): Marriage, Fertility, and Illegitimacy in Tibetan Societies," in *Tibetan Studies: Proceedings of the 10th Seminar of the International Association for Tibetan Studies*, ed. by P. Klieger (Leiden: Brill, 2006).

[20] See Christoph von Fürer-Haimendorf, *The Sherpas of Nepal* (Berkeley: University of California Press, 1964); Melvyn C. Goldstein, "Fraternal Polyandry and Fertility in a High Himalayan Valley in Northwest Nepal," *Human Ecology* 4 (1976); Nancy E. Levine, *The Dynamics of Polyandry: Kinship, Domesticity and Population on the Tibetan Border* (Chicago: University of Chicago, 1988).

[21] Flinn, *The European Demographic System*, 82.

more than 50 percent from 1880 to 1940.[22] Various hypotheses have been advanced to explain this rise in illegitimacy during the eighteenth and nineteenth centuries, including explanations centering on economic factors,[23] changing sexual norms,[24] or a combination of the two.[25] From 1880 onwards Europe experienced a sharp decline in illegitimacy that paralleled the decline in marital fertility. *Coitus interruptus* became a common practice[26] and new forms of contraception became widespread, suggesting that married and unmarried people alike were increasingly exerting control over reproduction.[27] The decline in illegitimate births was not necessarily attributable to changing attitudes. After all, Europe was becoming more secular at the time. Rather, through the dissemination of knowledge and the means to regulate childbearing, people became better equipped to avert premarital pregnancies.

The fertility decline among Tibetan exiles has apparently also been accompanied by a sharp decline in illegitimacy.[28] According to the 1998 Tibetan Demographic Survey, a mere forty-seven of 21,220 (0.2 percent) women of reproductive age (15-49) are classified as "single mothers."[29] The fact that single mothers represent a statistically insignificant minority of the female population is evidence that illegitimacy is either very rare, that instances of illegitimacy have been under-reported, or a combination thereof. The scarcity of illegitimate children seems counterintuitive given the historical tolerance for illegitimacy in Tibetan societies, and the fact that a large percentage of exile women (63 percent) aged 20-29 have never been married. One obvious reason for the apparent decline in illegitimacy is that exile women now have a high level of knowledge about contraception as well as access to a variety of means of birth control, achievements attained despite persistent pronatalist attitudes.[30] Like in Europe, the decline of non-marital fertility among exiles is no doubt linked to the increasing ability women have to regulate their reproductive lives.

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[22] Edward Shorter, John Knodel, and Etienne van de Walle, "The Decline of Non-Marital Fertility in Europe, 1880-1940," *Population Studies* 25 (1971); see also Coale and Treadway, "Summary," 80-152.

[23] W. R. Lee, "Bastardy and the Socioeconomic Structure of South Germany," *Journal of Interdisciplinary History* 7 (1977).

[24] Edward Shorter, "Illegitimacy, Sexual Revolution, and Social Change in Modern Europe," *Journal of Interdisciplinary History* 2 (1971).

[25] Jörg Baten and John E. Murray, "Bastardy in South Germany Revisited: An Anthropometric Synthesis," *Journal of Interdisciplinary History* 28 (1997); Andrew Blaikie, "Scottish Illegitimacy: Social Adjustment of Moral Economy?" *Journal of Interdisciplinary History* 29 (1998).

[26] Gigi Santow, "Coitus Interuptus in the Twentieth Century," *Population and Development Review* 19 (1993).

[27] Shorter, Knodel and van de Walle, "Decline of Non-Marital Fertility."

[28] Childs, "Namas and Nyelus."

[29] Planning Council, *Tibetan Demographic Survey*, 202.

[30] Geoff Childs and Gareth Barkin, "Reproducing Identity: Using Images to Promote Pronatalism and Endogamy among Tibetan Exiles in South Asia," *Visual Anthropology Review* 22 (2006).

Comparison 3: Timing and Duration of Fertility Transitions

In most European countries the transition to replacement-level fertility (i.e., TFR of 2.1 births per woman) was protracted over the course of nearly a century, from roughly 1870 to 1960.[31] Today, the TFR for all of Europe stands at 1.5 births per woman.[32] In contrast, contemporary fertility transitions in the world's poorer regions started at later dates but are occurring at faster paces. Asian nations such as China, Korea, and Thailand have experienced some of the most rapid declines. Between 1965 and 1990, China's TFR dropped from 5.9 to 2.4, Korea's from 5.4 to 1.7, and Thailand's from 6.4 to 2.6.[33] In comparison, South Asian nations have lagged behind; from 1965 to 1990 India's TFR declined from 5.8 to 4.3, while Nepal's actually rose a bit from 5.8 to 5.9 births per woman.[34]

Figure 3 compares the timing of fertility declines in China, India, the TAR, and among Tibetan exiles. The declines started in India and China during the 1950s, but in China's case a rise in fertility occurred in the early 1960s following the disastrous years of the Great Leap Forward.[35] India also experienced a moderate increase in fertility prior to the 1950s, one that can at least be partially attributed to a decrease in male mortality and the concomitant decrease in the percentage of women who became widows prior to menopause.[36] China's fertility decline occurred far more rapidly than India's during the 1970s. In the meantime, fertility in the TAR and among exiles remained high until the late 1980s, when it began to plummet. Today, fertility rates in China, the TAR, and among Tibetan exiles lie below replacement level, whereas fertility in India is not expected to cross the replacement threshold until 2020.[37]

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[31] Coale and Treadway, "Summary."

[32] Population Reference Bureau, *2007 World Population Data Sheet* (Washington, D.C.: Population Reference Bureau, 2007).

[33] John B. Casterline, "The Pace of Fertility Transition: National Patterns in the Second Half of the Twentieth Century," *Population and Development Review* 27, Supplement: Global Fertility Transition (2001).

[34] J. R. Rele and Iqbal Alam, "Fertility Transition in Asia: The Statistical Evidence," in *The Revolution in Asian Fertility: Dimensions, Causes, and Implications*, ed. R. Leete and I. Alam (Oxford: Clarendon Press, 1993), 15-37.

[35] Lee and Wang, *One Quarter of Humanity*.

[36] Bhat, "Mortality and Fertility in India."

[37] Bruce K. Caldwell and John C. Caldwell, "Below-Replacement Fertility: Determinants and Prospects in South Asia," *Journal of Population Research* 20 (2003).

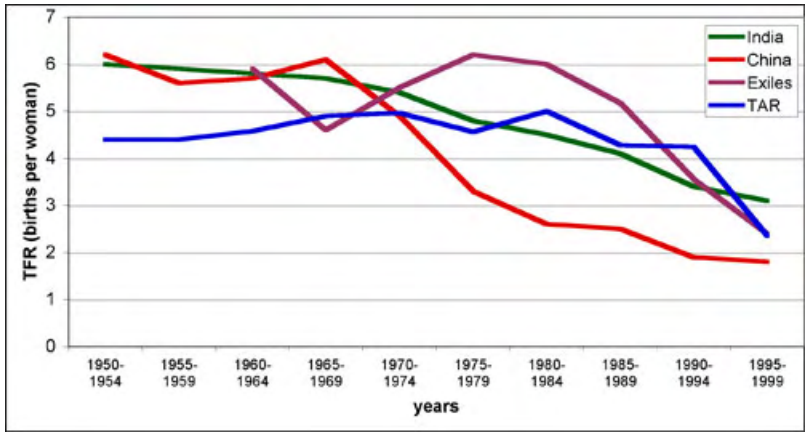

Figure 3: Comparison of Total Fertility Rates over Time.

Comparison 4: Sex Ratios

China and India contrast with Europe by virtue of being societies where female infanticide, neglect of female offspring, and sex-selective abortions have been used by parents in the past and present to achieve desired family sizes and compositions.[38] The key factor behind the prevalence of these practices is a fervent preference for sons. Recent fertility declines have exacerbated the situation. The persisting desire for sons coupled with a strong desire for fewer children (India) and a state mandated limit on births (China) have induced many parents to manage their family compositions in both traditional and novel ways. The cumulative demographic effect of sex-selective abortions, female infanticide, and female abandonment is evident in sex ratios among the younger cohorts in these countries. China's 2000 census revealed a sex ratio among 0-4 year-olds of 117 males per 100 females. Provinces on the eastern seaboard had particularly high sex ratios, including 136 and 130 males per 100 females aged 0-4 in Hainan and Guangdong, respectively. Similarly, India's 2001 census revealed that some states in northern India have abnormally high sex ratios. For example, the sex ratios for those aged 0-6 in Punjab and Haryana were 125.3 and 122.1 males per 100 females, respectively. Are Tibetans experiencing a similar phenomenon?

[38] Tim Dyson and Mick Moore, "On Kinship Structure, Female Autonomy, and Demographic Behavior in India," *Population and Development Review* 9 (1983); Roger Jeffery and Patricia Jeffery, *Population, Gender, and Politics: Demographic Change in Rural North India* (Cambridge: Cambridge University Press, 1997); Kay Johnson, "The Politics of the Revival of Infant Abandonment in China, with Special Reference to Hunan," *Population and Development Review* 22 (1996); Terence H. Hull, "Recent Trends in Sex Ratios at Birth in China," *Population and Development Review* 16 (1990); Monica Das Gupta and P. N. Mari Bhat, "Fertility Decline and Increased Manifestation of Sex Bias in India," *Population Studies* 51 (1997); Lee and Wang, *One Quarter of Humanity*.

Based on the work of several scholars, we know that gender bias exists in Tibetan societies, especially in the realm of religion.[39] Nancy Levine's study of a pre-transitional Tibetan population in western Nepal uncovered evidence of aggressive neglect toward less desired offspring, most notably high parity daughters (i.e., those born late in the birth order) and illegitimate children. In that particular setting female children were given cereal supplements at an earlier date, which can lead to higher rates of infant mortality due to the ingestion of contaminated foods.[40] Furthermore, women were excused from work for longer periods of time following the birth of a boy than a girl, thereby exposing infant daughters to elevated risks because they were more frequently left in the care of adolescent siblings. A measurable demographic outcome was higher mortality for girls than for boys in infancy and childhood.[41]

My own research revealed strong son preferences in both Sa dmar and Skyid grong. When queried on the topic one elderly man from Skyid grong stated, "In our old customs having sons was considered better. Sons would bring a bride (*mna' ma*) into the household. If you have many daughters you need to give them clothing and then you give them away to other households." An elderly woman concurred by saying, "Sons were better! When we got married we prayed for a son [to be born] first." The gender bias is evident in the cultural convention of naming high parity girls Three Is Enough (*gsum chog*), Four Is Enough (*bzhi chog*), and Five Is Enough (*lnga chog*), reflecting parents' feelings that having many daughters posed burdens on the household.[42] In Sa dmar people often conduct religious ceremonies to pray for a boy, never a girl, and commission lamas to perform longevity empowerment rituals (*tshe dbang*) for sons but rarely daughters. When asked about gender preferences a young father in Sa dmar replied, "When a son is born people ask, 'How is the child?' When a daughter is born people ask, 'How is the mother?'" Such obvious favoritism and the findings of Levine's demographic study make it reasonable to suspect that the son preference translates into skewed sex ratios in Tibetan populations.

Demographic evidence from Sa dmar does not support the hypothesis that discriminatory practices result in higher female mortality during infancy and childhood. Among all children born between the mid 1980s and 1996, a slightly higher percentage of females (72 percent) survived infancy and childhood than males (67 percent). This does not invalidate Levine's findings, but merely indicates that the practices she uncovered in northwestern Nepal may be a local phenomenon.

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[39] See, for example, Hanna Havnevik, *Tibetan Buddhist Nuns* (Oslo: Norwegian University Press, 1989); Kurtis R. Schaeffer, *Himalayan Hermitess: The Life of a Tibetan Buddhist Nun* (New York: Oxford University Press, 2004); Kim Gutschow, *Being a Buddhist Nun: The Struggle for Enlightenment in the Himalayas* (Cambridge, MA: Harvard University Press, 2004); Janet Gyatso and Hanna Havnevik, eds., *Women in Tibet* (New York: Columbia University Press, 2005).

[40] Katherine A. Dettwyler and Claudia Fishman, "Infant Feeding Practices and Growth," *Annual Review of Anthropology* 21 (1992): 183-84.

[41] Nancy E. Levine, "Differential Child Care in Three Tibetan Communities: Beyond Son Preference," *Population and Development Review* 13 (1987).

[42] Geoff Childs, "Names and Nicknames in sKyid grong," *Tibet Journal* 28 (2003).

Table 4 broadens the perspective on sex ratios by presenting data on the two youngest age groups in several Tibetan populations, including one labeled "Highland Nepal."[43] A normal sex ratio at birth is about 105 males per 100 females, and when treatment is equal sex ratios generally balance out by childhood due to the fact that males suffer higher rates of infant mortality. Therefore, sex ratios among the 0-4 age group that favor males by more than a 105/100 margin can indicate an unnatural, gender based discrepancy in infant and childhood mortality.

Table 4: Sex Ratios Compared

	Age Cohort	
Population	**0-4**	**5-9**
Skyid grong (1958)	102.0	99.3
Sa dmar (1997)	114.3	109.7
Highland Nepal (2001)	103.6	92.2
Exiles (1998)	104.6	104.7
TAR Tibetans (2000)	108.3	102.5
All PRC Tibetans (2000)	102.7	103.5

Sources: for Skyid grong and Sa dmar (Geoff Childs, previously unpublished data); for Highland Nepal, Nepal Census 2002, Population of Nepal: Population Census 2001, (Kathmandu: His Majesty's Government of Nepal, National Planning Commission Secretariat, and Central Bureau of Statistics, 2002); for Tibetan exiles, Planning Council, Tibetan Demographic Survey; for TAR Tibetans, TAR Census, Xizang Zizhiqu 2000; for all PRC Tibetans, Population Census Office (under the State Council and National Bureau of Statistics), Tabularization on the 2000 Population Census of the People's Republic of China (Beijing: China Statistics Press, 2002).

Table 4 shows that the only populations where the 0-4 age groups have sex ratios favoring males by a significant margin are Sa dmar (114.3) and TAR Tibetans (108.3). All others appear normal. Because the number of 0-4 year olds in Sa dmar is small (n=60), the sex ratio could result from stochastic variations.[44] The evidence from Sa dmar is therefore inconclusive on the grounds that the sample size is statistically small. Not so for TAR Tibetans. At 108.3 males per 100 females the sex ratio among the youngest cohort is slightly above what we would expect to find if all things were equal. Research is needed to better understand this phenomenon. At this point it is possible to advance three potential reasons for the high sex ratio. It could be a data problem, namely, the under-reporting of female

[43] For this category I extracted data from Nepal's 2001 census, in particular from the VDCs (Village Development Committee, a sub-district administrative unit) that border Tibet and are known to be populated primarily by ethnic Tibetans. By ethnic Tibetans I refer to those people who migrated to their current homeland from Tibet (many did so prior to the forming of the Kingdom of Nepal), speak a Tibetan dialect, pursue a traditional Tibetan lifestyle that includes farming and the herding of large bovines, and practice Buddhism. These people are typically labeled "bhote" in Nepal. On this term, see Charles Ramble, "The Name Bhotey," *Himal* 6 (1993): 17.

[44] Stochastic variations are those that arise through chance or random factors, and are typically associated with small populations. Sa dmar's population contained thirty-two males and twenty-eight females aged 0-4. If two of the males had been born female, then the sex ratio in this cohort would have been perfectly balanced.

children by parents who were reluctant to admit that they had exceeded a birth limit. This would be more of an issue in the cities where reproduction falls under closer scrutiny than in rural areas where the majority of the population resides, and would only be a factor if parents failed to disclose excess daughters but not sons. In any event, we do know that the under-enumeration of children plagued China's most recent census.[45] The unbalanced sex ratio could also stem from differential stopping behavior. A significant body of literature shows that, in societies with strong son preferences, couples that already have sons are more likely than those without sons to use contraception or to stop having more children altogether.[46] The cumulative effect is a sex ratio skewed toward male children. Finally, similar to India [47] and China,[48] it is possible that a son preference combined with small family desires and/or government pressure to have fewer children has prompted Tibetans to seek sex-selective abortions or use other means to regulate their family sizes and gender compositions. No evidence currently exists to suggest that this is actually happening. It is only one of several hypotheses that need to be investigated in order to explain why the sex ratio among the youngest cohort of TAR Tibetans is apparently skewed toward males.

Summarizing the Evidence

The comparative analysis presented in the preceding sections demonstrates that fertility in pre-transitional Tibetan societies was more similar to Europe than China or India due to factors related to the family system and the limitations it imposed on marriage. In particular, the high frequency of non-marriage for Tibetan women moderated overall fertility just as it did in pre-transitional Western Europe. However, Western European and Tibetan societies differed with respect to the forces that counteracted the fertility depressing effect of female non-marriage. The opposing forces shaping Western European fertility were high levels of non-marriage and marital fertility, in contrast to Tibetan societies where the opposing forces were high levels of non-marriage and out-of-wedlock childbearing.

The analysis also reveals that, although Tibetan fertility transitions started comparatively late in time, they proceeded at an extraordinarily rapid pace. Most European societies took nearly a century to complete the process; India's transition is expected to transpire over the course of seventy years, while China reached replacement fertility in the comparatively short time span of thirty-five years. In

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[45] Daniel M. Goodkind, "China's Missing Children: the 2000 Census Underreporting Surprise," *Population Studies* 58 (2004).

[46] Shelley Clark, "Son Preference and Sex Composition of Children: Evidence from India," *Demography* 37 (2000).

[47] Das Gupta and Bhat, "Fertility Decline"; Bela Ganatra, Siddhi Hirve, and V. N. Rao, "Sex-Selective Abortion: Evidence from a Community-based Study in Western India," *Asia-Pacific Population Journal* 16 (2001); Rohini P. Pande, "Selective Gender Differences in Childhood Nutrition and Immunization in Rural India: The Role of Siblings," *Demography* 40 (2003).

[48] Hull, "Recent Trends"; Johnson, "Revival of Infant Abandonment"; Junhong Chu, "Prenatal Sex Determination and Sex-Selective Abortion in Rural Central China," *Population and Development Review* 27 (2001).

contrast, the Tibetan transitions in the TAR and among exiles played out over the course of a mere fifteen years. Given China's propensity to enforce birth control regulations one could be tempted to attribute the speed of the TAR's decline to coercive state intervention. However, such a conclusion is neither supported by evidence from the field,[49] nor does it explain why the exiles experienced a parallel and equally dramatic fertility decline.

Finally, unlike in China and India, fertility transitions among Tibetans have not been accompanied by increasingly skewed sex ratios that favor males. With the exception of the Nyinba population studied by Levine,[50] pre-transitional Tibetan societies were similar to Western European ones in which sex ratios were balanced among the youngest cohorts. However, the sex ratio balance may have been disrupted during the course of the Tibetan fertility transitions, at least in the TAR where data from China's 2000 census shows that males significantly outnumbered females among 0-4 year-olds. Whether this discrepancy is an artifact of the data or reflects emerging social practices similar to those in China and India remains to be seen. In any event, the TAR ratio is not nearly as skewed toward males as in the rest of China where, among 0-4 year olds nationally, the 2000 census revealed a sex ratio of 117.8 males per 100 females.[51]

The rapid fertility declines among Tibetans in exile and in the TAR are bound to have major social, economic, and political consequences. For one, increasing longevity coupled with decreasing fertility is a clear-cut recipe for an aging population. With fewer children, who will care for the swelling ranks of old people in these societies where old-age care has traditionally been provided by families? Furthermore, the persistence of below replacement fertility will inevitably lead to population stagnation or decline. If this happens, then the Tibetans' proportion of the TAR's population will diminish, especially in the face of non-Tibetan in-migration. These are just two of the issues that will emerge in the wake of the rapid fertility declines that Tibetan societies have recently undergone.

[49] Melvyn C. Goldstein, Ben Jiao (Benjor), Cynthia M. Beall, and Phuntsog Tsering, "Fertility and Family Planning in Rural Tibet," *The China Journal* 47 (2002).

[50] Levine, "Differential Child Care."

[51] Judith Bannister, "Shortage of Girls in China Today," *Journal of Population Research* 21 (2004).

Glossary

Note: *these glossary entries are organized in Tibetan alphabetical order. All entries list the following information in this order: THL Extended Wylie transliteration of the term, THL Phonetic rendering of the term, the English translation, the Sanskrit equivalent, the Chinese equivalent, other equivalents such as Mongolian or Latin, associated dates, and the type of term.*

Ka					
Wylie	**Phonetics**	**English**	**Other**	**Dates**	**Type**
skyid grong	Kyirong				Place
Nga					
Wylie	**Phonetics**	**English**	**Other**	**Dates**	**Type**
lnga chog	Ngachok	Five Is Enough			Person
Na					
Wylie	**Phonetics**	**English**	**Other**	**Dates**	**Type**
nub ri	Nupri				Place
mna' ma	nama	daughter-in-law; bride			Term
Tsha					
Wylie	**Phonetics**	**English**	**Other**	**Dates**	**Type**
tshe dbang	Tsewang	longevity empowerment ritual			Ritual
Zha					
Wylie	**Phonetics**	**English**	**Other**	**Dates**	**Type**
bzhi chog	Zhichok	Four Is Enough			Person
Sa					
Wylie	**Phonetics**	**English**	**Other**	**Dates**	**Type**
sa dmar	Samar				Place
gsum chog	Sumchok	Three Is Enough			Person
Nepali					
Wylie	**Phonetics**	**English**	**Other**	**Dates**	**Type**
		ethnic Tibetans who migrated to and inhabit areas of Nepal that border Tibet	Nep. *bhote*		Ethnicity

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