

Fertility trends, sex ratios, and son preference among Han and minority households in rural China

Bryan Tilt, Xiaoyue Li & Edwin A. Schmitt

To cite this article: Bryan Tilt, Xiaoyue Li & Edwin A. Schmitt (2019) Fertility trends, sex ratios, and son preference among Han and minority households in rural China, *Asian Anthropology*, 18:2, 110-128, DOI: [10.1080/1683478X.2019.1588199](https://doi.org/10.1080/1683478X.2019.1588199)

To link to this article: <https://doi.org/10.1080/1683478X.2019.1588199>



Published online: 27 Jun 2019.



Submit your article to this journal [↗](#)



View Crossmark data [↗](#)



Fertility trends, sex ratios, and son preference among Han and minority households in rural China

Bryan Tilt^a , Xiaoyue Li^a and Edwin A. Schmitt^b

^aDepartment of Anthropology, Oregon State University, Corvallis, OR, USA; ^bDepartment of Culture Studies and Oriental Languages, University of Oslo, Oslo, Norway

ABSTRACT

This paper presents new insights into contemporary Chinese demography and family life based on survey and interview data from rural households in Yunnan Province, China's most ethnically and linguistically diverse region. Using both quantitative and qualitative data, we examine fertility trends, sex ratios, and son preferences in our study sample. We analyze differences between the majority Han and various ethnic minority groups that have been subject to less stringent family-planning policies. Our results show an overall fertility decline and a trend toward more balanced sex ratios, both of which are in line with national trends. We find evidence for son preference in the demographic data for both Han and minority households, despite widespread agreement in qualitative interviews rejecting the idea of son preference and emphasizing the value of both sons and daughters. We interpret these findings in light of several important changes in Chinese society, including legal and policy reforms governing marriage and inheritance, a nationwide "Care for Girls" social campaign, and shifting cultural norms about gender roles.

KEYWORDS

Fertility and sex ratios; son preference; ethnic minorities; population policy; China

Introduction

A recent headline in *The South China Morning Post* proclaimed, "China Has World's Most Skewed Sex Ratio at Birth – Again" (Zhou 2016). The article enumerated the various social and political challenges posed by such a skewed SRB, including barriers to female educational attainment, low female political empowerment, and the problem of tens of millions of "missing girls" that diminish the marriage prospects for eligible men.

China's notoriously skewed SRB, currently estimated to be approximately 117 males per 100 females, is just one of its many demographic challenges. With a population of 1.4 billion, China boasts decades of record-setting GDP growth, rapid urbanization, the expansion of educational and economic opportunities, and increasing labor mobility. These factors are common in many developing countries going through a fertility transition (Das Gupta et al. 2003). The unique factor in China, of course, is the decades-

long series of family-planning policies overseen by the National Population and Family Planning Commission (NPFPC), which have radically restricted citizens' family-building choices based on residence location and ethnicity.

While China's macro-level demographic trends have been extensively studied, primarily based on analyses of census data, the local-level experiences of this demographic reality, particularly in rural areas, are not well understood. Even less clear is how demographic trends and family ideals differ between the majority Han population and various ethnic minority groups. Far from being homogeneous, China's population includes dozens of government-recognized "minority nationalities"; these groups have historically been less influenced by the patriarchal norms of Confucian ideology, and they have been subject to less stringent family-planning policies. The question of how minority fertility trends, sex ratios and son preference compare to those of the majority Han is only beginning to be systematically addressed (Poston, Chiung-Fang, and Hong 2006; Cai and Lavelly 2007).

In this paper, we present new demographic data from survey questionnaires administered in south-western China's Yunnan Province, the country's most ethnically and linguistically diverse region. We examine fertility trends, sex ratios, and son preferences in our study sample, supplementing our quantitative analysis with qualitative data, collected via short interviews with study participants, on preferred family size and composition. This mixed-methods approach, drawing from both demography and anthropology, allows us to understand the rationales behind various family-building strategies from a local perspective and to answer several research questions:

1. What chronological trends can we observe in overall fertility and sex preferences across maternal birth cohorts?
2. Do fertility trends and sex ratios differ between Han and minority mothers, and what might this reveal about son preference in the study region?
3. What qualitative rationales do households use to describe their family-building strategies, and what might this tell us about changing policies and attitudes regarding family planning in contemporary China?

While our study sample does not allow us to make generalizations at the national level, it affords a close look at fertility trends, sex ratios and son preference in a mixed-ethnic region, something which has not been undertaken to date. We analyze our findings in light of recent research in anthropology and related fields on the cultural, economic and policy factors shaping demographic trends and family-building strategies in China today, particularly in heterogeneous settings such as the south-western border regions.

Fertility trends, sex ratios, and son preference in contemporary China

Within a land area roughly equal to that of the contiguous United States (9.3 million square kilometers), China currently supports a population of 1.4 billion. The economic and political strain of caring for such a large population has long been a contentious issue; as early as the Ming Dynasty (1368–1644 AD), 200 million people lived within

the boundaries of the Chinese nation-state (Ebrey 1996). During the socialist period of the mid-twentieth century, even Chairman Mao Zedong, who often sought to eradicate many of the country's pre-socialist features, espoused the view that "with more people, strength is great" (*ren duo, liliang da*).

By the 1970s, however, top political leaders began to change course. Faced with a total population that had grown to nearly a billion and a total fertility rate close to 6, the central government began to systematically regulate population growth. In 1971 leaders initiated a policy known as *wan, xi, shao* (denoting later marriage, wider birth spacing, and fewer births), the nation's first systematic fertility-limitation program (Löfstedt et al. 2004). After Mao's death and the rise of more pragmatic political leadership, China instituted a formal Planned Births Program (*jihua shengyu*), with the aim of "[promoting] modernization by reducing the number of people who must compete for resources, both in the family and in the nation" (Fong 2002, 1100). These policies were most stringent in the early years – including mandatory use of IUDs, sterilization programs, and coercive abortion – but were moderated in the 1980s. While considerable variation exists by province, by agricultural or non-agricultural household registration status (*hukou*), and by ethnicity, the Planned Births Program limits urban households to one child but provides less-stringent regulations for rural areas with large minority populations and areas where a significant percentage of residents live below the poverty level (Attane 2009).¹

The Planned Births Program had dramatic and far-reaching effects on the size and structure of China's population: the country's annual rate of natural population growth has fallen from 2.5 percent in the 1970s to less than 1 percent currently. During the same period, the nation's total fertility rate fell from nearly 6 to approximately 1.5, well below replacement levels (UNDP 2016; Cai 2013). In terms of population structure, China has undergone a dramatic demographic shift that puts the nationwide male-female sex ratio at birth (SRB) at approximately 117:100 (Greenhalgh and Winckler 2005, 266–267; Wang, Cai, and Gu 2013). In some rural counties, the ratio approaches 130:100. As a result, researchers estimate a nationwide total of approximately 40 million "missing girls" of all ages (Nie 2010) due to sex-selective abortion and the excess mortality of unwanted daughters. The precise figure remains uncertain because of suspected under-registration of female children and the challenges of accurately counting an increasingly mobile population (Poston and Glover 2005; Cai and Lavelly 2007; Cai 2013).

Within this policy context, several cultural and economic factors also contribute to current demographic patterns and the skewing of sex ratios. The first is China's system of patrilineal kinship and patriarchal social relations that produces son preference, which can be defined as "a complex of cultural, social and economic institutions and practices that make it likely that families will choose to have sons instead of daughters" (Loh and Remick 2015, 295). In rural areas in particular, sons are valued because they inherit family property, contribute to field labor and household income, and shoulder the responsibility of caring for parents in their old age (Loh and Remick 2015), although these ideals are gradually changing, as will be discussed below. Moreover, as comparative demographic findings suggest, son preference is widespread

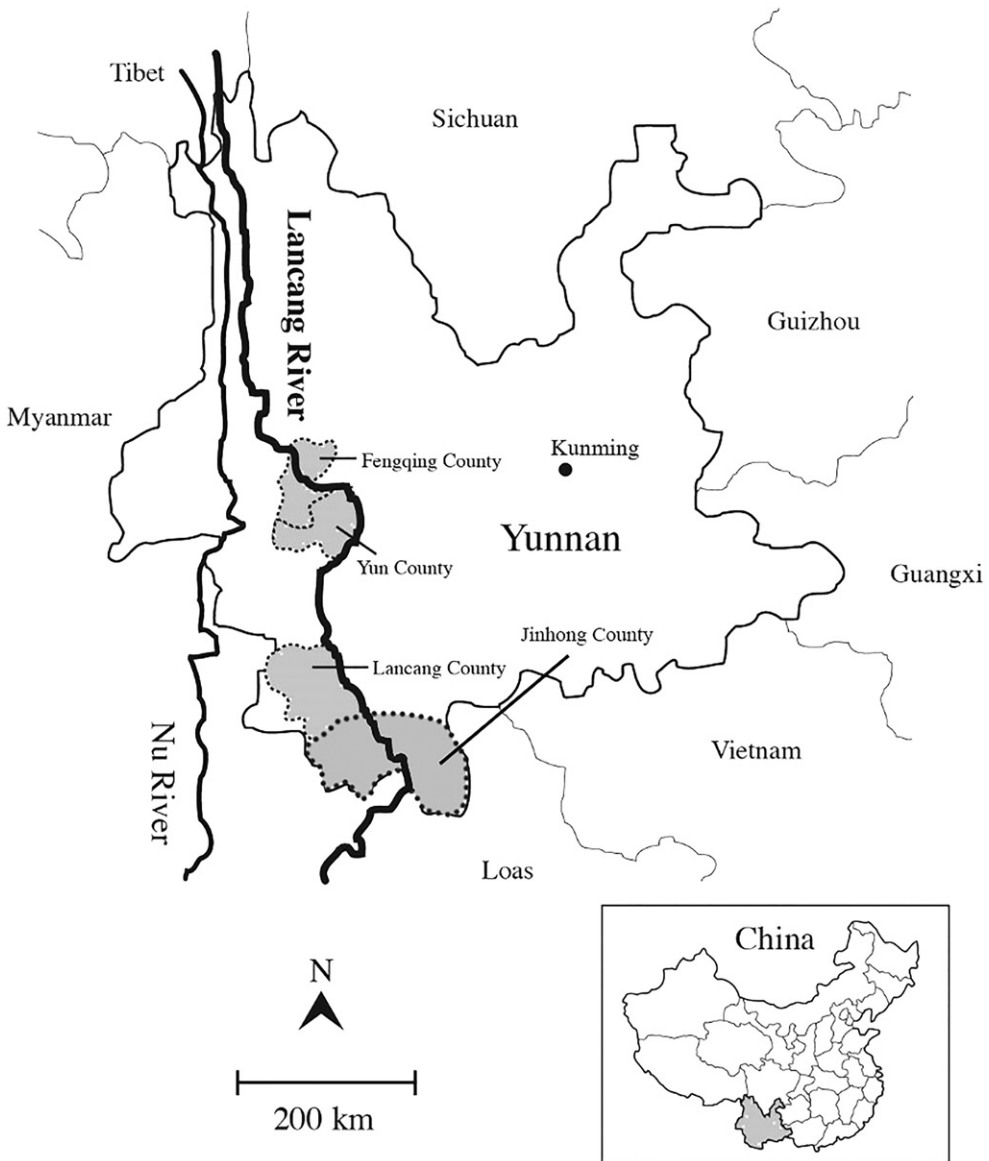


Figure 1. Map of Yunnan Province showing study locations.

throughout many areas of Asia, including South Korea, Vietnam, and India (Das Gupta et al. 2003).

The second factor relates to the classic model of fertility transition, which posits a correlation between urbanization, industrialization, rising education levels and rising incomes, on the one hand, and falling birth rates on the other. This transition has produced very low total fertility rates in many of China's neighboring countries, including Japan, Singapore, Taiwan, Hong Kong and South Korea (Loh and Remick 2015). Economic development also provides increased access to prenatal sex-determination technology, including ultrasonography and amniocentesis, which allows couples to

know the sex of the fetus and, in some cases, opt for sex-selective abortion, even though this practice is explicitly forbidden under Chinese law (Nie 2010). Viewed in the context of a fairly rigid Planned Births Program that constrains fertility, as described above, a clearer picture of contemporary demographic trends begins to emerge.

Economic development and fertility among China's minority nationalities

The constitution of the People's Republic of China declares the country to be a "unified, multiethnic state." In addition to the dominant Han majority, which constitutes approximately 91.5% of the nation's population, there are 55 "minority nationalities" (*shaoshu minzu*) that received formal recognition by the central government in the 1950s. These minority nationalities, which numbered 114 million as of the 2010 census (CNBS 2012), constitute a particularly difficult challenge for China's central government. On one hand, the government recognizes the fact that minority populations are economically disadvantaged relative to the Han majority, which provides normative justification for targeted development assistance, poverty alleviation subsidies, and preferential access to education. On the other hand, a high concentration of minority groups continues to correlate with low levels of economic development, a pattern of regional inequality that Hu (2003) has characterized as "one country with four worlds": high-income cities in Eastern China such as Beijing and Shanghai; middle-income eastern provinces such as Guangdong, Zhejiang and Jiangsu; low-income agricultural areas in China's interior; and the impoverished western regions.

Yunnan Province, in the south-west region (see Figure 1), which shares international borders with Myanmar, Laos, and Vietnam, contains the densest concentration of ethnic, linguistic and cultural diversity in China, with 25 officially recognized minority nationalities. Because of its location on the geographic, economic and cultural periphery of the Chinese nation-state, Yunnan also reflects the pattern of uneven economic development described above. The United Nations Development Program, for example, uses a Human Development Index (HDI), which includes a measure of economic productivity, life expectancy and education, to identify the development needs of particular countries and regions. In the most recent HDI calculation, Yunnan ranks 30th out of 31 provinces and administrative regions in China; only the Tibetan Autonomous Region, its neighbor to the west, scores more poorly (UNDP 2016). Although the province contains a few large urban centers such as Kunming, the provincial capital, Yunnan remains predominantly rural, with most households relying on small-scale farming for household consumption and market sale.

Diverse kinship and family structures have played an important role in ethnic identity in China's south-western borderlands (Harrell 2001). While the Bulang, Wa and Lahu minority groups included in our study share a history of matrilineal or even bilateral non-lineal kinship ties, today those practices have been influenced by years of interaction with Han Chinese patrilineal norms (Zhao 2002; Zhou 2010; Ma 2011). Patrilineality can be found among the Hui, Yi, Yao, Hani (Xu 2006), Dai (Dao 2006), Bai (Wu 2012) and Han Chinese (Fei 2006) ethnic groups that are discussed in this article, but few studies discuss the cultural and socio-economic factors connected to son

preference in the region. While giving birth to a son may have certain practical socio-economic benefits arising from patrilineality, appreciation for the role of women and girls within the family provides a cultural foundation within some ethnic groups, such as the Lahu, that favors neither sex over the other (Du 2002).

Comparatively little research has been conducted on differences in fertility, family-building strategies and sex preferences between Han and ethnic minority groups in China (Poston, Chiung-Fang, and Hong 2006), although several recent studies have begun to address this gap. Using spatial analysis of population data for China as a whole, Cai and Lavelly (2007) suggested two underlying factors that influence regional variation in sex ratios. First, sex ratios tend to be less skewed in regions where economic development is strong. This is in line with what demographers have observed throughout Asia, where sex ratios have become more equal over the past few decades as a consequence of urbanization, economic development, and increased educational access for both boys and girls (Guilmoto 2009). The second factor is somewhat peculiar to China: less influenced by the patriarchal aspects of Confucian ideology, ethnic minority groups appear to subscribe to different norms from the majority Han when it comes to son preference (Poston, Chiung-Fang, and Hong 2006; Attane 2009). For example, the patrilineal system within ethnically Yi communities is shaped by highly hierarchical clan organizations, while for many Hui communities the religion of Islam plays an important role in shaping patrilineality (Ma and Liu 2006; Li 2014). Moreover, during the decades-long implementation of the Planned Births Program, minority nationalities have faced less stringent checks on their fertility, since larger families have been permitted among minority nationalities, rural residents, and those living within high-poverty regions (Zeng 2007). Most of the demographic research on China's minority nationalities is fairly coarse in resolution, relying on census data, which tend to be aggregated by county or province. By contrast, our demographic and ethnographic data allow for a household-level analysis of actual family composition, combined with qualitative explanations of family-building strategies and sex preferences.

Research methods and study locations

In 2010, in collaboration with researchers from Yunnan Normal University, we administered a survey questionnaire to 793 rural households in more than 30 villages across four counties in Yunnan Province: Fengqing, Yun, Lancang and Jinghong (see Figure 1). The questionnaire was part of an interdisciplinary research project and included modules on demographic, social, cultural and economic conditions in the study communities. Our questionnaire was informed by ethnographic research previously conducted by us and our collaborators in the region. Additionally, in order to ensure that observer bias was not introduced into our data, we conducted two days of pre-testing our questionnaire protocol in locations where we did not intend to collect data for our study sample (Bernard 2006, 286). The demographic data on fertility trends and sex ratios came from quantitative questions about family composition, while the data on gender preference came from short, qualitative interview questions, allowing us to

Table 1. Basic characteristics of Yunnan study cohorts.

Mothers' birth cohort	Sample <i>N</i> (% of sample)	Literacy rate	Average maternal age at first birth
1940–1944	7 (1.2%)	43%	24.4
1945–1949	6 (1.0%)	33%	26.7
1950–1954	31 (5.2%)	55%	22.1
1955–1959	59 (9.8%)	66%	22.2
1960–1964	125 (20.8%)	81%	22.2
1965–1969	121 (20.1%)	83%	21.7
1970–1974	110 (18.3%)	89%	21.0
1975–1979	142 (23.6%)	94%	21.4
Total	601		

understand both the demographic trends in these communities and the cultural rationales behind them.

Our methodological approach draws from both quantitative traditions in demography and qualitative traditions in socio-cultural anthropology. These fields have very different histories and sensibilities, but they can be used in complementary ways to powerful effect. Demographers typically concern themselves with numerical questions about population processes such as fertility, migration, and mortality. This type of research usually requires large, representative samples from surveys or national censuses. Anthropologists who study population, by contrast, tend to focus on how these population processes are embedded in social, cultural and political contexts within and beyond the family. Methodologically, anthropologists most often rely on qualitative ethnographic case studies. In recent years, these two fields have begun to converge in productive ways. Tom Fricke, one of the early researchers advocating for an “anthropological demography,” pointed out that anthropology could provide insights about “highly various and local systems of meaning” and could help accomplish the task of “relating those meanings to demographic outcomes.” (Fricke 1997, 268). In the context of China and beyond, anthropologist Susan Greenhalgh (1995) has called this “situating fertility” (see also Bernardi and Hutter 2007). For the demographic analyses in this paper, we restricted our sample to those women born before 1980 and eliminated those who had no children, yielding a final sample size of 601. Given the fairly early maternal age at first birth in this region, and a national trend in rural areas toward fertility completion by age 30 years (Vermeer 2006), this represents a robust sample of women whose families are complete. Our sample consisted of both Han women ($N=400$, 66.6%) and minority women ($N=201$, 33.4%) from nine ethnic groups common in south-west China, including Bai, Dai, Yi, Hui, Lahu, Bulang, Wa, Hani, and Yao. While there is considerable variation in family and kinship norms across different ethnic groups (for example, some Tibetan and Mosuo communities favor polyandry and matrilineality), all the groups in our study sample follow the Chinese Marriage Laws mandating monogamous marriage. However, polygamy was not uncommon among the Yi and the Hui before the establishment of the PRC, and scholars have noted a tension between the Marriage Law and the norms and preferences of many ethnic groups (Xiao 2001; Liu 2008; Lu 2009; Ma and Liu 2009).

Intra-ethnic marriage is the norm in our dataset: 91% of Han marriages were to other Han, while approximately 70% of minority marriages were within their respective ethnic groups. Given China's large population size and its geographic and cultural diversity, our sample is not meant to be representative of the nation as a whole, but

Table 2. Total fertility rates and parity progression ratios by mother's birth cohort.

Mother's birth cohort	Total fertility rate (TFR)	PPR 2	PPR 3	PPR 4
1940–1944	3.43 a	1.00	0.71	0.60
1945–1949	2.67 b	1.00	0.50	0.00
1950–1954	2.68 b	0.90	0.54	0.33
1955–1959	2.42 b, c	0.93	0.45	0.16
1960–1964	2.01 c, d	0.82	0.19	0.05
1965–1969	2.08 c, d	0.89	0.21	0.00
1970–1974	1.81 d	0.75	0.07	0.17
1975–1979	1.62 d	0.58	0.05	0.00
All cohorts	1.99			

Note: In the total fertility rate column (TFR), figures with the same letter are statistically indistinguishable at the 0.05 level of significance (p value) as determined by the Tukey HSD post-hoc test; figures with different letters are statistically different from one another at the 0.05 level of significance.

rather to afford a close look at fertility trends, sex ratios and son preference in a mixed-ethnic region. Moreover, because we had to aggregate minority nationalities in order to have a large enough sample to see fertility patterns, we are not always able to draw conclusions about specific minority groups. The basic characteristics of study participants, grouped by birth cohort, are shown in Table 1. Note the decline in maternal age at first birth over cohorts. This is in contrast to the national trend, which shows a modest rise over the same period, ending with an average maternal age at first birth of 26.7 years as of the 2010 census (Cai 2013).

Chronological trends in fertility and sex preference

Research question 1: what chronological trends can we observe in overall fertility and sex preferences across maternal birth cohorts?

As Table 2 shows, the total fertility rate in our sample decreased dramatically over time, from 3.43 for the cohort born in the early 1940s to 1.62 (well below replacement level) for the cohort born in the late 1970s. We conducted a one-way analysis of variance (ANOVA) to examine differences in the mean number of children by mother's birth cohort and a Tukey HSD post-hoc test to examine pairwise differences between cohorts. We observed a statistically significant difference between cohorts [$F(7, 593) = 24.421, p = 0.000$]; the key pairwise differences between cohorts are also noted in Table 2.

In order to understand patterns of fertility for specific cohorts over time, we calculated parity progression ratios (PPRs, shown in Table 2) for each cohort. The PPR is a commonly used measure in demography to describe the proportion of women with a certain number of children who go on to have another child. We used the following formula to calculate PPR:

$$\text{PPR}(a_x) = \frac{\text{women with at least } x + 1 \text{ children}}{\text{women with at least } x \text{ children}}$$

To interpret the PPR results in the table, reading across the rows gives a picture of parity (first births, second births, third births, and fourth births) for a given cohort, while reading down the columns gives a picture of how a given birth parity category looks across cohorts through time. In the cohort born during the early 1940s, for instance, 100% of women who had borne one child went on to have a second child

Table 3. Sex ratios and sex-specific parity progression ratios by mother's birth cohort.

Mother's birth cohort	Sex ratio of children (M:F)	PPR 2: Probability of progressing to second birth		PPR 3: Probability of progressing to third birth		
		First child male	First child female	First two children male	One male, one female	First two children female
1940–1944	1.50	1.00	1.00	1.00	0.33	1.00
1945–1949	1.25	1.00	1.00	0.50	0.50	0.50
1950–1954	1.22	0.82	1.00	0.00	0.47	0.80
1955–1959	1.14	0.83	1.00	0.13	0.41	0.82
1960–1964	1.12	0.78	0.90	0.13	0.18	0.45
1965–1969	1.17	0.88	0.93	0.13	0.22	0.31
1970–1974	1.10	0.69	0.84	0.00	0.03	0.25
1975–1979	1.17	0.52	0.71	0.00	0.00	0.22
Cohort Mean	1.14					

(PPR2); 71% of women with two children went on to have a third child (PPR3); and 60% of women with three children went on to have a fourth child (PPR4).

These data reflect a general downward trend in fertility over time and a gradual disappearance of higher-order births. For the cohort born in the late 1940s, all women had a second birth, but only half went on to a third birth. By the early 1950s cohort, a noticeable decline in second-order births appears. By the late 1950s cohort, fourth-order births are almost non-existent. By the early 1970s cohort, third-order births almost disappear. And by the last maternal cohort, born in the late 1970s, only slightly more than half of women go on to bear a second child. All of these trends are roughly in line with national patterns over the same time period (Cai 2013).

Next, we sought to examine whether sex ratios change over time by mother's birth cohort, and to understand what this might tell us about "revealed preference" for sons. We calculated sex ratios for each maternal cohort, the results of which are shown in Table 3. The general trend is skewed in favor of male children for earlier cohorts and gradually becomes more equal for later cohorts, although the overall sex ratio for the full sample is in line with the national average (Greenhalgh and Winckler 2005; Wang, Cai, and Gu 2013). We also calculated sex-specific PPRs for each maternal cohort, which allows us to analyze the extent to which the sex of already-born children influences the probability of having further children. The results also appear in Table 3, which shows the parity progression ratio from first to second births and from second to third births, disaggregated by the sex of previously born children.

Looking at PPR 2, all mothers in the first two cohorts progressed to a second birth. In subsequent cohorts, PPR2 is higher in all instances for women whose first child was female, which constitutes evidence of male preference when determining whether to progress to a second birth. For PPR 3, there is no apparent pattern for the first two maternal cohorts, probably because the sample size is small. For subsequent cohorts (those born after 1950), the likelihood of a third birth becomes strongly sex-dependent. Women whose first two children are male have a very small likelihood of having a third child; the likelihood of having a third child is higher for mothers who have one boy and one girl, and much higher still for mothers whose two previous children are both girls.

Our survey instrument and interview protocol did not include questions about prenatal sex-determination or sex-selective abortion. However, previous research in China

Table 4. Total fertility rates and parity progression ratios for Han and minority women.

	Total fertility rate	PPR 2	PPR 3	PPR 4
Han	1.95	0.79	0.18	0.13
Minority	2.08	0.79	0.29	0.15

and in Yunnan Province specifically with Han and minority households has demonstrated that rates of abortion over time increased to approximately 27 per 100 pregnancies in 2000, and that abortion rates are highly correlated with the sex of previous children in the family (Löfstedt, Shusheng, and Johansson 2004). Moreover, it is reasonable to assume that, as in other regions, the skewed sex ratios in our study communities are attributable to some combination of sex-selective abortion, female infanticide, and under-registration of female infants (Chu 2001; Nie 2010).

Inter-Ethnic trends: fertility and sex preferences for Han and minority households

Research question 2: do fertility trends and sex ratios differ between Han and minority mothers, and what might this reveal about son preference in the study region?

Similar to the cohort analysis above, we calculated total fertility rates and parity progression ratios for Han and minority women in order to determine the proportion of women with a given number of children who go on to have another child. The results of this analysis are shown in Table 4.

In our sample, total fertility rates are nearly identical for Han (1.95) and minority (2.08) mothers.² An independent-samples *t*-test showed that the difference between means for the two groups was significant ($p < 0.05$), likely due to the fairly large sample size, but the effect size is minimal. In terms of parity progression, Han and minority mothers are identical for PPR 2; 79% of mothers, regardless of ethnic identity, went on to have a second birth. Minority women show a markedly higher probability than their Han counterparts of having a third birth, while the probability of a fourth birth is quite low for both Han and minority women.

Interpreting these results requires a basic understanding of national and provincial family-planning policies as they apply to Han and minority households. While China's family-planning targets and population policies are formulated in the National Population and Family Planning Commission, a central government agency, these policies contain "highly localized features" that are implemented differently in different regions (Gu et al. 2007, 143). In Yunnan, the provincial Population and Birth Planning Office announced new "Population and Birth Planning Regulations" in 2002 and updated the regulations in 2014. Assuming that households have an agricultural household registration status (*nongye hukou*), Han households may have two children and minority households may have three, provided that they meet one of the following conditions: 1) they live within the jurisdiction of what is considered a marginal area under the "border villagers' committee" (*bianjing cunmin weiyuanhui*), or 2) either husband or wife belongs to one of the following minority groups, all of which have relatively small populations: Dulong, De'ang, Jinuo, Achang, Nu, Pumi, or Bulang.

Table 5. Sex ratios and sex-specific parity progression ratios for Han and minority women.

	Sex ratio (M:F)	PPR 2: Probability of progressing to second birth		PPR 3: Probability of progressing to third birth		
		First child male	First child female	First two children male	One male, one female	First two children female
Han	1.13	0.73	0.89	0.10	0.16	0.36
Minority	1.16	0.73	0.87	0.23	0.23	0.59

Next, we calculated sex ratios and sex-specific PPRs, disaggregated by ethnicity (Han and minority), which allows us to analyze the extent to which the sex of already-born children influences household decision-making about whether to have further children, and whether differences can be detected between ethnic groups. Results of this analysis are shown in [Table 5](#).

The sex ratios of children born to Han and minority women were statistically indistinguishable: both groups exhibit male-skewed sex ratios roughly in line with national trends. Looking at PPR 2, the decision to have a second child appears to be sex-dependent for both Han and minority mothers; regardless of ethnicity, women whose first child was female were more likely to progress to a second birth. A similar trend is apparent for PPR 3: regardless of ethnicity, women whose first two children are male have a small likelihood of having a third child. That likelihood increases slightly for mothers who have one boy and one girl, and increases quite dramatically for mothers whose two previous children are both girls. In each case, PPR 3 is higher for minority mothers than for their Han counterparts, likely because of the greater flexibility in family-planning policies that allow for higher-order births for minority families.

Qualitative results on preferred family size and composition

Research question 3: what qualitative rationales do households use to describe their family-building strategies, and what might this tell us about changing policies and attitudes regarding family planning in contemporary China?

Our final goal in this study was to examine stated preferences about family size and sex ratios in our study communities, and to understand how these attitudes are shaped by changing policies and discourses about family planning in contemporary China. We posed the following qualitative questions to study participants: “If family-planning policies were not a consideration, how many children would you ideally like to have? How many sons and how many daughters?” We also posed a short, open-ended, qualitative interview question asking study participants to briefly explain the reasoning behind their ideal family size and composition.

We performed a quantitative content analysis on these short interview texts, examining the frequency (Neuendorf 2001) with which different preferred sex ratios were mentioned (i.e. more sons, more daughters, or an equal number of sons and daughters). Next, we performed qualitative, ethnographic content analysis on participants’ stated rationales about why this family composition was preferred, analyzing the qualitative statements line by line and grouping the material into themes. Themes can be seen as “tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study” (Miles, Huberman, and Johnny 2013; see also

Patton 2002 and Bernard 2006). This allowed us to explore study participants' perspectives and attitudes on family-building in their own terms.

The total number of desired children (by cohort) tracks actual fertility trends in these study communities fairly closely, ranging from a mean of 4.3 for the earliest cohort (born in the early 1940s) to a mean of 1.8 for the latest cohort (born in the late 1970s). This is somewhat higher than the results reported in national studies examining the desired number of children, but the trend is downward from each cohort to the next. Our results are also generally in line with the findings from a Chinese national survey showing that smaller family sizes tended to be preferred by younger women, women from urban areas, and women with higher educational attainment (Ding and Hesketh 2006; see also Cai 2010).

In terms of the stated "ideal" sex ratio of children in the household, we observed a steady decline in stated son preference over time, from a high of 1.33 in the early 1950s maternal cohort to a low of 0.91 for the late 1970s cohort. This stands in contrast to recent research, using a nationally representative sample, which found a high level of son preference in China related to a range of individual, family, and community determinants (Murphy, Tao, and Lu 2011). In our dataset, moreover, Han and minority mothers are statistically indistinguishable in terms of desired total number of children (2.0 for Han and 2.2 for minorities) and desired sex ratio (1.03 for Han and 1.06 for minorities). There is some controversy in the academic literature regarding the validity and reliability of investigating "ideal" family size and composition, since research participants may tend to give a response that closely mirrors their actual completed family size and composition (Sobotka and Beaujouan 2014). Our results should therefore be interpreted with such critiques in mind. Stated ideals may not be useful for predicting actual fertility trends, but they do reveal important insights about societal norms, what is generally considered desirable, and why (Philipov and Bernardi 2011).

Examining the qualitative data on desired family size and composition, we found that fewer than one quarter of our study participants (23.3%) explicitly expressed a preference for sons in their interview comments. Continuity of the patriarchal and patrilineal family line tended to be a common concern for this group. For example, one Han participant said, "One boy is best. In our village, households without a son, all wish they had one. Who doesn't like sons? They can carry on the family name." Some participants also underscored the importance of inter-generational financial ties, and emphasized the fact that sons were more commonly expected to care for their aging parents. A Han respondent noted that, "Rural people don't have social security or retirement plans. When we're older and can't work, we have to rely on our sons."

By contrast, a small portion of the sample (7.2%) expressed an explicit preference for daughters. These participants tended to invoke cultural and behavioral reasons why daughters were ideal. For example, one ethnic Yi participant said, "Girls listen to their parents, but boys make their parents worry. When I was young, I didn't listen to my parents. I often made my family angry. One girl is great. My daughter is very thoughtful, and she's a good student."

The most commonly stated preference in our sample by a wide margin (69.4%) was for a balanced number of male and female children in the household, most often

expressed as one son and one daughter. Qualitative interview results indicate a strong social norm toward the two-child family, what Greenhalgh (1994) has termed the “optimal two.” Many families, regardless of ethnicity, expressed the desire for one boy and one girl, citing the different and complementary “advantages” (*haochu*) of sons and daughters and noting that this family structure maintained “balance” (*pingheng*) and “harmony” (*hexie*). As one Han survey respondent said, “A daughter is respectful of her parents, and a son can carry on the family name.” Another Han participant from the late-1950s cohort put it more artfully: “A son is the pillar of the family. Girls are respectful to their parents, and they’re sensible.” Similarly, one Yi respondent from the late-1970s cohort noted that “boys and girls are equal; there’s no discrimination.”

Many study participants framed their gender preferences by way of thinking about the future, suggesting that sons and daughters both had potentially important roles to play in the maintenance of family life. As one ethnic Lahu respondent said, “I have two sons, and both are outside the village. They rarely come home. It would be better if I had a daughter by my side.” Current literature on the Chinese family has consistently noted that filial piety, respect for elders, and caring for the long-term economic and emotional needs of family members—all responsibilities that were once the purview of sons—are increasingly taken on by daughters (Yan 2003; Shi 2017). As a consequence, the long-held stereotype of the married-out daughter as “spilled water”—a family liability, rather than an asset—no longer holds true (Zhang 2007), and maintaining ties with married daughters has become “an increasingly important investment strategy for old age” among China’s rural population (Yan 2003, 180). Moreover, evidence suggests that this new arrangement is reciprocal; daughters and their natal family members rely on each other for economic, social and emotional support throughout their lives (Zhang 2007).

Discussion and conclusions

Using qualitative and quantitative survey findings from rural households in China’s Yunnan Province, we have examined fertility trends, sex ratios, and sex preferences over time and between Han and minority households. Our results show a general downward trend in fertility over time in the study communities, from maternal cohorts born during the 1940s to those born during the 1970s, and a gradual disappearance of third- and higher-order births. The sex ratio of children in these families has become more equal over time, from a high of more than 1.25 for the 1940s maternal cohort to 1.17 for the late-1970s maternal cohort. These findings mirror nationwide trends attributable to family-planning policies enforcing low fertility, rising educational attainment for girls, increasing economic opportunities and a subsequent rise in child-rearing costs, and changing cultural norms about the relative value of sons and daughters (Loh and Remick 2015; Greenhalgh 2013; Ling 2017; Murphy, Tao, and Lu 2011).

By examining parity progression ratios, we found that the probability of second and third births is strongly sex-dependent for both Han and minority mothers; regardless of ethnicity, women whose previous children were female showed a higher likelihood of having more children. This constitutes evidence for son preference among

both Han and minority households. This finding reflects the persistence of son preference in rural areas throughout China and elsewhere in Asia, where the societal expectation is that sons will provide more farm labor, inherit property, take on the responsibility of ancestral rituals, and provide security for their aging parents (Murphy, Tao, and Lu 2011; Das Gupta et al. 2003).

By contrast, during brief qualitative interviews, most households explicitly rejected the idea of son preference, stating that both sons and daughters had important and complementary roles to play in the family. We are thus faced with the problem of explaining the mismatch in our data between actual fertility trends and stated preferences. There are a number of reasons for why a majority of study participants might express the ideal of having both sons and daughters. First, gender equality has been a major policy goal of the Chinese Communist Party since the Mao era and is enshrined in several major legal statutes, including the *Marriage Law of the PRC*, which was implemented in 1950 and updated and amended significantly in 1980 and 2001 (CNPC 2001). This foundational law, along with several more modest policy reforms, raised the nationwide marriageable age, mandated consent by both parties to any marriage, and eased restrictions on divorce. Furthermore, the *Law of Succession of the PRC*, passed in 1985 and revised in 2003, explicitly states that “males and females are equal in their right to inheritance,” overturning centuries of precedent for male-dominated inheritance of family property (NPC 2003). These legal and policy reforms have weakened some of the institutional incentives for favoring sons.

Secondly, China’s political leaders have taken notice of the social problems posed by a chronic sex-ratio imbalance. Rural households, particularly those facing economic hardship, must make decisions about how to allocate limited resources among their children; when the perceived return on investment for male children is higher, the incentive for sons persists. Moreover, girls whose parents do not formally register them at birth will face lifelong challenges in gaining access to education, healthcare and other basic social services (Ling 2017; Goodburn 2014). China’s “missing girls” have also left tens of millions of men unmarried, a group colloquially known as “bare branches” (Jin et al. 2013). In response, China’s central government has initiated a “Care for Girls” social campaign (*guan’ai nühai xingdong*) overseen by the National Population and Family Planning Commission (Greenhalgh 2013). This campaign, which ran on a trial basis in selected regions beginning in the early 2000s, has been in effect nationwide since 2006. It echoes the Chinese Communist Party’s consistent attempts to stamp out patriarchal oppression and other practices deemed “feudal” or otherwise antithetical to socialism. The campaign operates in a wide variety of ways, from community outreach and education to online information dissemination. As a result, nearly all Chinese citizens are aware of the state’s attempts to promote gender equality, and citizens, both urban and rural, likely feel social pressure to conform to this view, at least rhetorically.

Thirdly, and most subtly, far from being static and unchanging, the family is an “adaptive institution” (Jankowiak and Moore 2017, 2), which means that cultural norms regarding gender roles are subject to shift in accordance with new economic realities. China has transitioned over the past two generations from a predominantly agricultural country to an export-oriented manufacturing and service-sector powerhouse. As

China's labor force becomes increasingly mobile in order to meet the demands of this new economy, more rural women routinely migrate to cities and towns, sending remittances back to their rural families (Yan 2003; Zhang 2007). As a result, societal ideas about gender roles and filial piety are in flux. Filial piety, considered a core feature of the Chinese family since the time of Confucius, involves an expectation to respect and obey one's parents, to support them in old age, and, increasingly, an emotional commitment to one's parents' well-being (Jankowiak and Moore 2017). In a recent anthropological analysis of family dynamics among rural-urban migrants in China, Ling (2017) suggests that sons are commonly viewed as "precious" because of their importance within the patrilineal system, while daughters are often seen as more "reliable," "obedient," and even "mature." In a groundbreaking new book entitled *Choosing Daughters*, Lihong Shi (2017) suggests that intimate emotional bonds between parents and their daughters are on the rise and that family intimacy and filial piety, far from being static and unchanging concepts, are actually being redefined in the current age as more rural households pursue new ideals of happiness, modernity, and material well-being (see also Kim and Fong 2014).

Looking to the future, several new policy initiatives may have substantial effects on the size and structure of China's population. Fearing an increasingly inverted age pyramid and the consequent strain on social services, the National People's Congress approved an amendment to the Population and Family Planning Law in 2016, allowing all married couples to have a second child in order to move toward more "balanced population growth" (Xinhua 2015; CNPC 2015). The long-term effects of this policy shift remain unclear; however, if the lessons from other East Asian countries, including Japan and South Korea, are any indication, China's fertility will remain low for the foreseeable future, driven largely by economic development and the rising cost of child-rearing (Zheng et al. 2009; Ling 2017). Moreover, a new Chinese National Bureau of Statistics report concludes that some immediate effects of the new two-child policy are emerging in the national population sample data. Total births actually decreased from 2016 to 2017, and second births now account for more than half of all births as the nation's population matures and there are fewer women of child-bearing age (NBS 2017). The uptick in second births may also be due to uncertainty over how long the new policies will continue; couples who desire to have a second child may be doing so quickly while the policy window remains open. Understanding how these regulatory, economic and cultural changes result in different demographic outcomes for Han and minority families will be an important future research agenda.

Notes

1. New regulations in place as of 2016 allow all married couples to have a second child. However, the data for this study were collected and analyzed before the new policy went into effect. Moreover, it remains unclear how the new policy will affect long-term demographic trends in China, as discussed briefly in the conclusion.
2. As noted in the "Research Methods and Study Locations" section, we aggregated nine different minority nationalities ($N=201$) in order to have a large enough sample to compare against Han households ($N=400$). The risk of this approach is that it masks potentially meaningful differences between minority groups in the sample. This problem is perhaps most acute for groups such as the Lahu, whose kinship patterns and gender

relations were historically quite distinct from the Han. We conducted several descriptive analyses to see whether some of the fertility patterns for Lahu households in our sample were markedly different from Han households and from the total sample. They were not: for Lahu households, the total fertility rate (TFR) was 2.09 and the male-female sex ratio of children was 1.21. Both of these figures are generally in line with the other groups in the sample, as we report in [Tables 4](#) and [5](#).

Acknowledgements

The authors would also like to acknowledge the institutional support of Yunnan Normal University.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

Funding for this study was provided by the U.S. National Science Foundation's Human and Social Dynamics Research Program (Grant #0826752).

Notes on contributors

Bryan Tilt is a Professor of Anthropology at Oregon State University. His research focuses on social change, sustainable development, pollution control, and water resources in China and the United States. A former Fulbright Senior Research Scholar in Beijing, he is the author of the book, *Dams and Development in China: The Moral Economy of Water and Power*, published by Columbia University Press in 2015.

Xiaoyue Li is a Postdoctoral Research Fellow at ICTA – Universitat Autnoma de Barcelona, Spain. She worked on this research while a doctoral student in anthropology at Oregon State University. Her work focuses on the interactions between society and the environment. She has conducted fieldwork in China and the United States on local and traditional knowledge, migration, demography, ethnic identity, and perceptions of climate change.

Edwin A. Schmitt is a Postdoctoral Fellow in the Department of Culture Studies and Oriental Languages at the University of Oslo, Norway, where he is part of a multi-year research project called "Airborne: Pollution, Climate Change, and Visions of Sustainability in China." He has conducted ethnographic fieldwork in Sichuan and Yunnan Provinces on rural development, energy issues, and environmental change.

ORCID

Bryan Tilt  <http://orcid.org/0000-0002-7031-932X>

References

Attane, Isabelle. 2009. "The Determinants of Discrimination against Daughters in China: Evidence from a Provincial-Level Analysis." *Population Studies* 63 (1):87–102. doi:10.1080/00324720802535023.

- Bernard, Russell H. 2006. *Research Methods in Anthropology: Qualitative and Quantitative Approaches*. Walnut Creek, CA: AltaMira Press.
- Bernardi, Laura, and Inge Hutter. 2007. "The Anthropological Demography of Europe." *Demographic Research* 17:541–566. doi:10.4054/DemRes.2007.17.18.
- Cai, Yong. 2010. "China's Below-Replacement Fertility: Government Policy or Socioeconomic Development?" *Population and Development Review* 36 (3):419–440. doi:10.1111/j.1728-4457.2010.00341.x.
- Cai, Yong. 2013. "China's New Demographic Reality: Learning from the 2010 Census." *Population and Development Review* 39 (3):371–396. doi:10.1111/j.1728-4457.2013.00608.x.
- Cai, Yong and William Laveley. 2007. "Child Sex Ratios and their Regional Variation." In *Transition and Challenge: China's Population at the Beginning of the 21st Century*, edited by Zhongwei Zhao and Fei Guo, 108–123. Oxford: Oxford University Press.
- Chinese National Bureau of Statistics. 2012. *China 2010 Population Census*. Beijing: China Statistics Press.
- Chinese National Bureau of Statistics. 2017. *Li Xiru: 2017 nian woguo quanmian lianghai zhengce xiaoguo jixu xianxian [Li Xiru: In 2017 the Effects of the Two-Child Policy Continue to Become Apparent]*. Beijing: NBS.
- Chinese National People's Congress. 2001. *Zhonghua Renmin Gongheguo Hunyin fa [Marriage Law of the People's Republic of China, Amended]*. Beijing: NPC.
- Chinese National People's Congress. 2003, 1985. *Zhonghua Renmin Gongheguo Jicheng fa [Succession Law of the People's Republic of China]*. Beijing: NPC.
- Chinese National People's Congress. 2015. *Zhonghua Renmin Gongheguo Renkou yu Jihua Shengyu fa [Population and Family Planning Law of the People's Republic of China]*. Beijing: NPC.
- Chu, Junhong. 2001. "Prenatal Sex Determination and Sex-Selective Abortion in Rural Central China." *Population and Development Review* 27 (2):259–281. doi:10.1111/j.1728-4457.2001.00259.x.
- Dao, Chenghua. 2006. "Dehong Daizu hunyin xisu yu shehui wenhua de guanxi" [The Marriage Custom of the Dai Nationality in Dehong and Its Relation with Its Society and Culture]. *Journal of Yunnan University of the Nationalities* 23 (3): 6–20.
- Das Gupta, Monica, Jiang Zhenghua, Li Bohua, Xie Zhenming, Woojin Chung, and Bae Hwa-Ok. 2003. "Why Is Son Preference so Persistent in East and South Asia? A Cross-Country Study of China, India, and the Republic of Korea." *Journal of Development Studies* 40 (2):153–187. doi:10.1080/00220380412331293807.
- Ding, Qu Jian, and Therese Hesketh. 2006. "Family Size, Fertility Preferences, and Sex ratio in China in the Era of the One Child Family Policy: Results From National Family Planning and Reproductive Health Survey." *BMJ* 333 (7564):371–373. doi:10.1136/bmj.38775.672662.80.
- Du, Shanshan. 2002. *Chopsticks Only Work in Pairs: Gender Unity and Gender Equality among the Lahu of Southwestern China*. New York: Columbia University Press.
- Ebrey, Patricia B. 1996. *The Cambridge Illustrated History of China*. Cambridge: Cambridge University Press.
- Fei, Xiaotong. 2006. *Xiangtu Zhongguo [From the Soil]*. Shanghai: Shanghai People's Press.
- Fong, Vanessa L. 2002. "One-Child Policy and Empowerment of Urban Daughters." *American Anthropologist* 104 (4):1098–1109. doi:10.1525/aa.2002.104.4.1098.
- Fricke, Tomas. 1997. "Culture Theory and Demographic Process: Towards a Thicker Demography." In *Anthropological Demography: Towards a New Synthesis*, edited by David Kertzer and Thomas Fricke, 248–277. Chicago: University of Chicago Press.
- Goodburn, Charlotte. 2014. "Rural-Urban Migration and Gender Disparities in Child Healthcare in China and India." *Development and Change* 45 (4):631–655. doi:10.1111/dech.12098.
- Greenhalgh, Susan. 1994. "Controlling Births and Bodies in Village China." *American Ethnologist* 21 (1):1–30. doi:10.1525/ae.1994.21.1.02a00010.
- Greenhalgh, Susan, ed. 1995. *Situating Fertility*. Cambridge: Cambridge University Press.
- Greenhalgh, Susan. 2013. "Patriarchal Demographics: China's Sex Ratio Reconsidered." *Population and Development Review* 38:130–149. doi:10.1111/j.1728-4457.2013.00556.x.

- Greenhalgh, Susan and Edwin A. Winckler. 2005. *Governing China's Population: From Leninist to Neoliberal Biopolitics*. Stanford, CA: Stanford University Press.
- Gu, Baochang, Feng Wang, Zhigang Guo, and Erli Zhang. 2007. "China's Local and National Fertility Policies at the End of the Twentieth Century." *Population and Development Review* 33 (1):129–147. doi:10.1111/j.1728-4457.2007.00161.x.
- Guilmoto, Christophe Z. 2009. "The Sex Ratio Transition in Asia." *Population and Development Review* 35 (3):519–549. doi:10.1111/j.1728-4457.2009.00295.x.
- Harrell, Stevan. 2001. *Ways of Being Ethnic in Southwest China*. Seattle: University of Washington Press.
- Hu, Angang, 2003. "Yige Zhongguo, sige shijie: Zhongguo diqu fazhan chayu de bupingdengxing" [One China, Four Worlds: The Inequality of Uneven Regional Development in China]. In *Di'erci Zhuanxing: Guojia Zhidu Jianshe [the Second Transformation: The Construction of National Institutions]*, edited by Angang Hu, Shaoguang Wang, and Jianming Zhou. Beijing: Tsinghua University Press, 49–58.
- Jankowiak, William R., and Robert L. Moore. 2017. *Family Life in China*. Malden, MA: Polity Press.
- Jin, Xiaoyi, Lige Liu, Yan Li, Marcus W. Feldman, and Shuzhuo Li. 2013. "Bare Branches' and the Marriage Market in Rural China: Preliminary Evidence from a village-level survey." *Chinese Sociological Review* 46 (1):83–104. doi:10.2753/CSA2162-0555460104.
- Kim, Sung Won, and Vanessa L. Fong. 2014. "A Longitudinal Study of Son and Daughter Preference among Chinese Only-Children from Adolescence to Adulthood." *The China Journal* 71:1–26. doi:10.1086/674551.
- Li, Yixuan. 2014. "Liangshan Yizu qinshu zhidu de renxing yu qishi [The Persistence and Revelation of Yi Nationality's Kinship System in Liangshan]." Doctoral Dissertation, Central Minzu University.
- Ling, Minhua. 2017. "Precious Son, Reliable Daughter: Redefining Son Preference and Parent-Child Relations in Migrant Households in Urban China." *The China Quarterly* 229:150–171. doi:10.1017/S0305741016001570.
- Liu, Xi. 2008. "Lun Shaoshu Minzu Hunyin Duoyangxing yu Woguo Hunyinfade Chongtu yu Tiaoshi [The Conflicts and Adaptations between the Diversified-Marriages in Ethnic Minorities and the Chinese Marriage Law]." *Journal of Tibet Nationalities University* 29 (1):63–69.
- Löfstedt, Petra, Luo Shusheng, and Annika Johansson. 2004. "Abortion Patterns and Reported Sex Ratios at Birth in Rural Yunnan, China." *Reproductive Health Matters* 12 (24):86–95.
- Loh, Charis, and Elizabeth J. Remick. 2015. "China's Skewed Sex Ratio and the One-Child Policy." *The China Quarterly* 222:295–319. doi:10.1017/S0305741015000375.
- Lu, Xiaoping. 2009. "Liangshan Yizu chuantong hunyin xiguanfa yu woguo hunyinfade chongtu yu xietiao yanjiu [A Study of Conflict and Coordination Between Traditional Marriage Custom Law and of Yi nationality in Liangshan and Marriage Law in Our Country]" MA Thesis, Southwest University of Political Science and Law.
- Ma, Haiyun, and Ting Liu. 2009. "Lun Huizu Hunyin Jiating Xiguanfa yu Guojiafa de Tiaoshi – yi Yunnan Weishan Huihui deng Cun Weili [The Adaptation to the Chinese Marriage Law in Hui Nationality: A Case Study in Weishan Huihui deng Village, Yunnan Province]." *Journal of Hui Muslim Minority Studies* 73:135–139.
- Ma, Jianxiong. 2011. "Marriage and Land Property: Bilateral Non-Lineal Kinship and Communal Authority of the Lahu on the Southwest Yunnan Frontier, China." *South East Asia Research* 19 (3):495–536. doi:10.5367/sear.2011.0059.
- Miles, Matthew B., A. Michael Huberman, and Saldana Johnny. 2013. *Qualitative Data Analysis: A Methods Sourcebook*. Thousand Oaks, CA: Sage.
- Murphy, Rachel, Ran Tao, and Xi Lu. 2011. "Son Preference in Rural China: Patrilineal Families and Socioeconomic Change." *Population and Development Review* 37 (4):665–690.
- Neuendorf, Kimberly A. 2001. *The Content Analysis Guidebook*. Thousand Oaks, CA: Sage.
- Nie, Jing-Bao. 2010. "Limits of State Intervention in Sex-Selective Abortion: The Case of China." *Culture, Health and Sexuality* 12 (2):205–219. doi:10.1080/13691050903108431.
- Patton, Michael Q. 2002. *Qualitative Research and Evaluation Methods*. 3rd. ed. Thousand Oaks, CA: Sage.

- Philipov, Dimiter, and Laura Bernardi. 2011. "Concepts and Operationalization of Reproductive Decisions Implementation in Austria, Germany and Switzerland." *Comparative Population Studies* 36 (2-3):495–530.
- Poston, Dudley L., Jr., and Karen S. Glover. 2005. "Too Many Males: Marriage Market Implications of Gender Imbalances in China." *Genus* 61:119–140.
- Poston, Dudley L., Jr., Chang Chiung-Fang, and Dan Hong. 2006. "Fertility Differences between the Majority and Minority Nationalities in China." *Population Research and Policy Review* 25: 67–101.
- Shi, Lihong. 2017. *Choosing Daughters: Family Change in Rural China*. Stanford, CA: Stanford University Press.
- Sobotka, Tomáš, and Éva Beaujouan. 2014. "Two Is Best? the Persistence of a Two-Child Family Ideal in Europe." *Population and Development Review* 40 (3):391–419. doi:10.1111/j.1728-4457.2014.00691.x.
- United Nations Development Program. 2016. *China Human Development Report 2013*. Beijing: UNDP.
- Vermeer, Eduard B. 2006. "Demographic Dimensions of China's Development." *Population and Development Review* 32 (S1):115–144. doi:10.1111/j.1728-4457.2006.tb00005.x.
- Wang, Feng, Yong Cai, and Baochang Gu. 2013. "Population, Policy, and Politics: How Will History Judge China's One-Child Policy?" *Population and Development Review* 38(Supplement): 115–129. doi:10.1111/j.1728-4457.2013.00555.x.
- Wu, Ying. 2012. "Dali Xiluo Pingshan Baizu Chuantong Hunyin yu Jiating de Wenhua Shengtai Chanshi [A Cultural Ecology Interpretation of Traditional Marriage and Family among the Bai in Dali Xiluo Pingshan]." *Social Sciences in Yunnan* 1:5–9.
- Xiao, Mang. 2001. "Shixi Huizu de Qinshu Zhidu [A Study on Kinship of Hui Nationality]." *Social Sciences in Yunnan* 2:65–69.
- Xinhua, News. 2015. *China to Allow Two Children for All Couples*. October 29. <http://en.people.cn/n/2015/1029/c90000-8968821.html>
- Xu, Min. 2006. "Chuantong Wenhua Beijing Xia Hanizu Funv de Xiandaihua Wenti [Hani Women's Modern Issues under a Traditional Cultural Background]." *Journal of Honghe University* 4 (1):22–26.
- Yan, Yunxiang. 2003. *Private Life under Socialism: Love, Intimacy, and Family Change in a Chinese Village, 1949–1999*. Stanford, CA: Stanford University Press. doi:10.1086/ahr/109.2.493.
- Zeng, Yi. 2007. "Options for Fertility Policy Transition in China." *Population and Development Review* 33 (2):215–246. doi:10.1111/j.1728-4457.2007.00168.x.
- Zhang, Hong. 2007. "From Resisting to Embracing? The One-Child Rule: Understanding New Fertility Trends in a Central China Village." *The China Quarterly* 192:855–875.
- Zhao, Ying. 2002. "Cong Hunyin Jiating Kan Bulangzu Funv de Shehui Diwei [On the Social Position of the Bulang Women through a Study of Their Family and Marriage]." *Journal of Yunnan University of the Nationalities* 19 (4):76–78.
- Zheng, Zhenzhen, Yong Cai, Wang Feng, and Gu Baochang. 2009. "Below-Replacement Fertility and Childbearing Intention in Jiangsu Province, China." *Asian Population Studies* 5 (3):329–347. doi:10.1080/17441730903351701.
- Zhou, Jiayu. 2010. "Muxi Fuxi Jiaozhi de Hunyin: Huangwa Hunyin Dijie Xingshi Tanxi [Marriages Interwoven with Matrilineality and Patrilineality: Formal Analysis of Establishing a Marriage among the Huang Wa]." *Heilongjiang Minzu Congkan [Heilongjiang Ethnic Journal]* 119: 145–149.
- Zhou, Viola. 2016. "China Has World's Most Skewed Sex Ratio at Birth – Again." *South China Morning Post*, October 27.