The Study Area
In the early 1980s, the population of Anhui Province totaled approximately 50 million; in 1997, it was about 61 million. The province’s socioeconomic status is low to medium for China: For example, in 1986, the per capital gross national product was 916 yuan nationally and 698 yuan in Anhui; in 1997, these figures were 6,048 yuan and 4,378 yuan, respectively. Our analysis, which focuses on the Anqing region, is based on a 1993 community survey conducted in two counties, Huaining and Zongyang, where the majority of people are employed as agricultural workers. In the mid-1980s, the population of Huaining was 745,500, and that of Zongyang was 934,000; the average life expectancy in both counties was similar to that for China overall (about 65 years). The two counties are quite similar, the main difference being that Huaining produces cotton and Zongyang produces rice as a main crop. Additionally, Huaining was settled much more recently, has a substantial immigrant population and is closer to the city of Anqing than Zongyang.

Data from our preliminary work show that from the mid-1970s to the early 1990s, the ratio of male to female infant deaths in the province was low, although a detailed analysis was outside the scope of this article. Before one month of age, 99 male and 86 female infants had died, for a sex ratio of 1.15; before one year, the numbers were 219 and 193, respectively, for a ratio of 1.13. On the basis of data from developing and Western countries, the normal ratio expected is significantly higher—about 130 male to 100 female infant deaths before age one.

Consistent with this, a life table based on life expectancies similar to those in contemporary China (67.5 years for females and 63.5 for males) showed a ratio of 129. However, the nationwide ratio in a report of the 1982–1987 Two-per-Thousand Survey (114 male per 100 female infant deaths) is very similar to Anhui’s. Furthermore, a review of data from 44 developing countries, a number of which are characterized by son preference, revealed that the average ratio of male to female infant deaths was 1.20 in the 1980s and 1.14 in the 1970s.

Methodology
The household-based community survey was conducted in October–November 1993. The two counties were chosen at random from the province’s eight rural counties. We selected four townships (three in Zongyang and one in Huaining), and a list of all households was supplied by local government census bureaus. Special ly trained interviewers and permanent staff from Anhui Medical University visited each household and conducted face-to-face interviews. The respondents were all Han, the main nationality in China. Approximately 16,000 women and 20,000 men were extensively interviewed about their health status and medical history, occupational exposures, smoking, living conditions and diet.

An additional questionnaire, administered to 14,017 women aged 15 or older, included questions on women’s pregnancy history, lifestyle before childbirth, menstrual cycle and age at menarche. Of the 10,904 respondents who had had at least one delivery, 3,520 did not report their children’s sex; since 84% of these women were born before 1950, we restricted the analysis to women born in 1950 and later.

The sample included 5,779 married women born in 1950 or later who had had at least one live birth and had complete reporting of birth dates and key background information. These women, who are representative of the district populations, had a total of 14,553 births.

We hypothesized that couples with sons would be less likely to have another child than would couples with one or two daughters. To determine the prevalence of son preference, we calculated sex ratios for three time periods (before 1980, 1980–1986 and 1987–1993) and over all three time periods, and compared them by birth order and family size. (The selected periods represent different phases in the development and enforcement of the national population policy.) Furthermore, we hypothesized that sons and daughters would receive differential treatment. To test this, we examined duration of breastfeeding and place of delivery.

We hypothesized that the interval between births would depend on the sex of the previous children because of the desire to have at least one son. To determine waiting time to subsequent birth by the sex of the previous child, we calculated Kaplan-Meier life tables. We used Cox proportional hazards models to estimate the risk of second and third births, after adjusting for variables that were statistically significant at the .05 level according to the likelihood ratio test in univariate analysis. The analyses of childbearing patterns were confined to progressions from first to second birth and second to third birth because too few women had had a fourth or a fifth child (703 and 371, respectively). Time to first birth could not be analyzed because information on marriage date was not complete.

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*Significantly different from expected ratio of 1.06 at p<.05. **Significantly different from expected ratio of 1.06 at p<.01. ***Significantly different from expected ratio of 1.06 at p<.001.

Note: Excludes 1,080 births with incomplete information on the year of birth.

Results
Sex Ratios
Overall, 1.18 male births occurred for every female birth (Table 1). For first, second and third or higher order births, the sex ratios were 1.17, 1.12 and 1.16, respectively. All of these sex ratios were significantly different from the expected ratio of 1.06. For each parity, the sex ratio was somewhat higher prior to 1980 than in 1980–1986. Given that the rural population of Anhui had almost no access to technology such as ultrasound and amniocentesis in the 1970s, these elevated sex ratios are not attributable to sex-selective abortion, but are probably due to underreporting of female births. In 1980–1986, the sex ratio was not significantly higher than expected for any parity, possibly because strict enforcement of population control policies included measures that made sex-selective abortion difficult to obtain and nonreporting of female births unlikely to occur.

For first and second births, sex ratios in 1987–1993 were significantly higher than expected (1.27 and 1.21, respectively). Fetal sex determination methods became available in the latter half of the 1980s, and are widely accessible today in China, although the government has outlawed them. Many couples find ways through the “back door” to learn the sex of their unborn child, and abortion is an accepted form of birth control in China. Thus, an abortion following an ultrasound examination is unlikely to be challenged. Furthermore, data from the survey suggest that in more recent years, couples’ average desired family size has declined; this decline probably contributed to the high sex ratios at lower parities observed in 1987–1993.

Our results are generally consistent with national and provincial-level data from...