Patterns and Determinants of Permanent Bachelorhood, 20th Century China

Dwight Davis

Population Association of America Annual Meeting, New Orleans, April 11-13, 2013

Extended Abstract: As of 2000, more than 99.5 percent of Chinese women above age 30 had already been married. Given this fact, rates of permanent male bachelorhood have been primarily driven by arithmetic differentials in sex ratios with a minor potential role for differential by gender remarriage rates. Therefore the main interest in studying permanent bachelorhood is not enumerating the raw numbers of bachelors but analyzing its determinants.

In this paper I will analyze historical patterns in permanent bachelorhood for men in mainland China using microdata from the 1982-2000 China censuses (Minnesota Population Center: IPUMS International, China National Bureau of Statistics). This study will help fill a gap in the China marriage literature, which up to now has been primarily concerned with historical female marriage patterns (Coale 1984, 1989; Ye 1992) and possible future male marriage patterns (Attané 2006, Goodkind 2006). Few studies have examined the historical determinants of permanent male non-marriage (for a partial exception see Das Gupta et al. 2010), even though permanent bachelorhood was not uncommon for Chinese men in the recent past (Lee and Wang 1999) and the marriage squeeze literature predicts a return to these higher rates of bachelorhood in the near future (Jiang et al. 2011).

Given the renewed concern about male marriage in China due to impending sex ratio imbalances and the alleged negative personal and social consequences of permanent bachelorhood (Poston and Glover 2005, Ebenstein and Sharygin 2009) a more thorough study of its recent patterns and determinants is warranted. To date, studies that include consideration of historical patterns of male marriage have shown between a third to a half of unmarried men in the 1935-1955 birth cohorts were illiterate (Ebenstein and Sharygin 2009); for 20th century birth cohorts (through 1964) Chinese men with schooling had higher rates of marriage than illiterate men (Wang and Tuma 1993); and according to estimates from the 1990 and 2000 censuses and 1991 survey data, men with less education continued to have lower probabilities of marriage (Xu et al. 2002, Das Gupta et al. 2010).

Studies that apply classic event history techniques cannot distinguish between factors that delay marriage from factors that make permanent singlehood more likely (for instance Wang and

Tuma 1993, Xu et al. 2002). Education, for instance, increasingly appears to have contrasting effects on marriage across the life course, at least for women. In the recent U.S. context, education reduced the odds of marriage for younger women but increased the likelihood of ever marrying (Goldstein and Kenney 2001). This "educational crossover" for women has not yet occurred in mainland China, according to a recent study (Qian 2012). For other studies of East and Southeast Asia, however, there is evidence of an educational crossover for men characterized by later marriage for both men and women but a rush into marriage for men in their thirties by socioeconomic status. This leaves more men than women unmarried at older ages overall but relatively more highly educated women and fewer educated men unattached at older ages (Raymo 2003, Jones 2004, Jones and Gubhaju 2009).

Data and Methods

I will use 1982-2000 China census microdata to create five-year birth cohorts from 1915 through 1960 (Minnesota Population Center: IPUMS International, China National Bureau of Statistics). I anticipate gaining access to 2005 and perhaps 2010 census data in time for the meeting, which would allow me to extend the analysis through the 1966-1970 birth cohort. The 2000 census microdata include marital status and first marriage timing as well as indicators of educational attainment, migration, occupation, ethnicity, current employment status, housing conditions, and household composition. The 1982-90 census data do not include all of these variables but do include marital status, education, and household composition, as well as current place of residence. I will run reduced form models with these older data. The older census data will let me partially test whether the results from the 2000 data are due to differential survival across cohorts.

I will define "permanent bachelorhood" to refer to men who are never married as of the census enumeration and who are at least 40 years old. More than 99 percent of male marriages enumerated in the 2000 census occurred before age 40. I will create five-year birth cohorts from 1915 through 1960 and first describe geographic variability at the macro-regional and provincial level in bachelorhood across cohorts. The data include sufficient measures of lifetime migration so I can determine whether individuals have moved from their place of birth. More than 94 percent of individuals remained in their province of birth as of 2000. Second, I will model the determinants of bachelorhood using logistic regression. Right-hand side predictors will include educational attainment, ethnicity, partial migration history, urban/rural (hukou) status,

employment status, and occupational category. I will also include measures of provincial-level economic conditions as of 2000 using published indicators from the China National Statistics Bureau.

As a supplementary analysis, I will describe the current (as of the census date) living conditions of bachelors in terms of employment status, household composition, and housing conditions. Because of the rapid drop in fertility over the past 40 years in China, with the single-child family increasingly becoming the norm (Scharping 2003), there is increasing concern over the wellbeing of single people (Das Gupta et al. 2010). The main idea is permanent singles will lose connections to extended kin as family size shrinks in a society that has traditionally been based on such extended kin ties (Parrish and Whyte 1978, Lee and Wang 1999). Research in other contexts has shown permanent singlehood is associated with negative outcomes across both bio-psychological and socio-economic dimensions (Waite 1995, Williams 2003, Light 2004). I will also perform this descriptive analysis of living conditions for all currently unmarried older (than age 40) individuals regardless of previous marriage history. For wellbeing current marital status may be the more important indicator. In this analysis, for comparison, I will include currently single woman as well, the vast majority of whom are widows.

Preliminary Results

Figure 1 shows the percent permanent bachelors across five-year birth cohorts by macro region using the 2000 census data. As of 2000 bachelorhood remained relatively uncommon with no region-by-cohort population exceeding five percent. There is noticeable variation across regions with the west and northeast having roughly half the percentage of bachelors as the other regions. The shrinking of the percentage bachelor in the oldest cohorts provides first-order evidence of the association between marriage and survival. A noticeably smaller percent of the older cohorts are permanent bachelors presumably due to differential mortality by bachelorhood status.

Table 1 shows the results of a logistic model estimating the effects of education, ethnicity, residential status (hukou), residential migration, and region on the probability of permanent bachelorhood. This model also is based on data from the 2000 census. The time trend is controlled with a series of dummies for each five-year birth cohort through 1960. All of these variables are significant predictors of bachelorhood. For instance each additional year of education reduces the odds of bachelorhood by 23 percent. The profile of the typical permanent

bachelor according to this model is someone of Han ethnicity, who lives in the west or northeast, has not moved from his place of birth in a rural area, and who has low educational attainment.

Bibliography

Attané, Isabelle. 2006. "The Demographic Impact of a Female Deficit in China, 2000-2050." *Population and Development Review* 32(4):755-770.

China National Bureau of Statistics. 2000. China 2000 Population Census 0.1% Sample.

Coale, Ansley J. 1984. *Rapid Population Change in China, 1952-1982*. National Academies Press.

Coale, Ansley J. 1989. "Marriage and Childbearing in China Since 1940." *Social Forces* 67 (4) (June 1): 833–850. doi:10.1093/sf/67.4.833.

Das Gupta, Monica, Avraham Ebenstein, and Ethan Jennings Sharygin. 2010. "China's Marriage Market and Upcoming Challenges for Elderly Men." World Bank Policy Research Paper, no. 5351.

Ebenstein, Avraham Y., and Ethan Jennings Sharygin. 2009. "The Consequences of the 'Missing Girls' of China." *The World Bank Economic Review* 23(3):399-425.

Goldstein, Joshua R., and Catherine T. Kenney. 2001. "Marriage Delayed or Marriage Forgone? New Cohort Forecasts of First Marriage for U.S. Women." *American Sociological Review* 66(4):506–519.

Goodkind, Daniel. 2006. "Marriage Squeeze in China: Historical Legacies, Surprising Findings." Paper presented at the Annual Meeting of the Population Association of America, March 30-April 1, Los Angeles, CA.

Jiang, Quanbao, Shuzhuo Li, and Marcus W. Feldman. 2011. "Demographic Consequences of Gender Discrimination in China: Simulation Analysis of Policy Options." *Population Research and Policy Review* 30(4):619-638.

Jones, Gavin.2004. "Not 'When to Marry' but "Whether to Marry": the Changing context of Marriage Decisions in East and Southeast Asia," In Gavin Jones and Kamalini Ramdas (Eds.), *(Un)tying the knot: ideal and reality in Asian marriage*. Singapore University Press.

Jones, Gavin W., and Bina Gubhaju. 2009. "Factors Influencing Changes in Mean Age at First Marriage and Proportions Never Marrying in the Low-Fertility Countries of East and Southeast Asia." *Asian Population Studies* 5(3):237–265.

Lee, James Z., and Wang Feng. 1999. *One quarter of humanity: Malthusian mythology and Chinese realities, 1700-2000*. Harvard University Press.

Light, Audrey. 2004. "Gender differences in the marriage and cohabitation income premium*." *Demography* 41(2):263–284.

Minnesota Population Center. *Integrated Public Use Microdata Series, International: Version 6.1* [Machine-readable database]. Minneapolis: University of Minnesota, 2011.

Parrish, William L., and Martin King Whyte. 1978. *Village and Family in Contemporary China.* Chicago: University of Chicago Press.

Poston, Jr., Dudley L., and Karen S. Glover. 2005. "Too Many Males: Marriage Market Implications of Gender Imbalances in China." *Genus* vol. LXI (2):119-140.

Qian, Yue. 2012. "Marriage Squeeze for Highly Educated Women? Gender Differences in Age and Education Assortative Marriage in Urban China (extended abstract)." Population Association of America Annual Meeting, San Francisco, May 3-5, 2012.

Raymo, James M. 2003. "Educational Attainment and the Transition to First Marriage among Japanese Women." *Demography* 40(1):83–103.
Scharping, Thomas. 2003. *Birth control in China, 1949–2000: Population Policy and Demographic Development*. New York: RoutledgeCurzon.
Waite, Linda. 1995. "Does marriage matter?" *Demography* 32(4):483–507.
Wang Feng, and Nancy Tuma. 1993. 'Changes in Chinese marriage patterns during the twentieth century', in *Proceedings of the IUSSP International Population Conference, Montreal, 1993*, 337-352. East-West Center Reprints, Population Series, No. 296.
Williams, Kristi. 2003. "Has the Future of Marriage Arrived? A Contemporary Examination of Gender, Marriage, and Psychological Well-Being." *Journal of Health and Social Behavior* 44(4):470–487.
Xu, Lixin Colin, Christine Zhen-Wei Qiang, and Limin Wang. 2002. "The Timing of Marriage in China." *SSRN eLibrary*. (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=368402).
Ye, Wenzhen. 1992. "China's 'later' Marriage Policy and Its Demographic Consequences." *Population Research and Policy Review* 11 (1): 51–71. doi:10.1007/BF00136394

Figure 1.

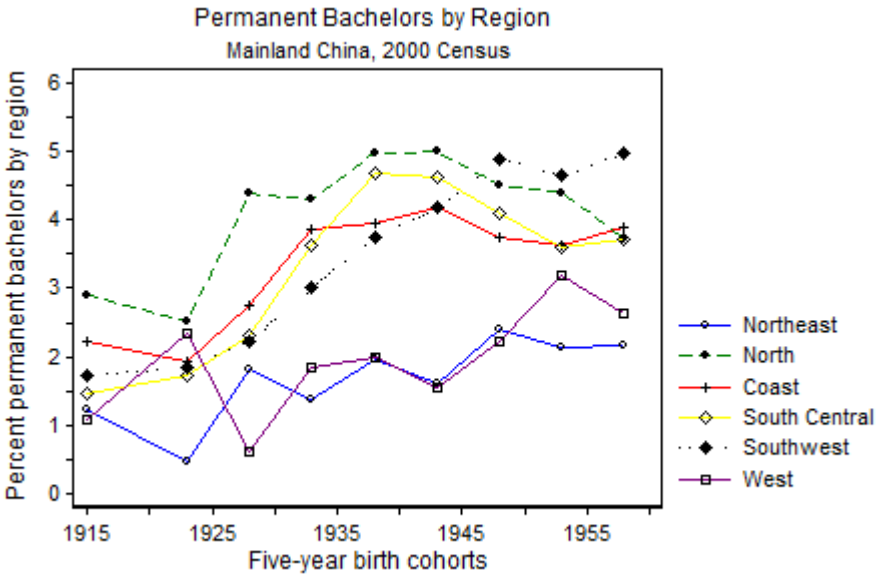

Table 1. Logistic model predicting probability of permanent bachelorhood

	Odds Ratio	S.E.	P-value
Education	0.771	0.003	0.000
Urban hukou	0.405	0.019	0.000
Han ethnicity	1.652	0.087	0.000
Region (Northeast omitted)			
North	1.713	0.096	0.000
Coast	1.426	0.080	0.000
South Central	1.286	0.075	0.000
Southwest	1.321	0.077	0.000
West	0.590	0.054	0.000
Moved from birth place	0.796	0.038	0.000
Birth Cohorts (pre-1921 omitted)			
1921-25	1.089	0.142	0.511
1926-30	1.839	0.208	0.000
1931-35	2.788	0.301	0.000
1936-40	4.211	0.447	0.000
1941-45	5.723	0.607	0.000
1946-50	6.165	0.649	0.000
1951-55	6.961	0.730	0.000
1956-60	8.976	0.950	0.000
Constant	0.019	0.002	0.000

Data: 2000 China census, N=224,412