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Involuntary Bachelorhood
in Rural China:
A Social Network Perspective

In China, the imbalanced sex ratio at birth is compounded by problems of surplus males at adult ages in certain regions of the country. Remote and less-developed rural areas are affected by mass out-migration of young people, women especially. In a society where social pressure to marry is very strong, the shortage of young single women is creating a serious male marriage squeeze, and men must apply a wide range of strategies to find themselves a wife. Using a matchmaking network to find a spouse before it is too late is one such strategy. Lige LIU, Xiaoyi JIN, Melissa BROWN *and* Marcus FELDMAN *examine access to marriage in a rural county of Anhui province using data from a quantitative survey of married and never-married men. While showing that the probability of marriage varies according to certain individual socioeconomic characteristics, they demonstrate that matchmaking networks play an essential role. The men who use such networks, based on kin or non-kin ties, are twice as likely to marry as the others.*

Confucian ideology, still influential in rural China, places great importance on filial piety and the family lineage, so childlessness is an unforgivable sin. Marriage is highly valued, and is regarded as essential for continuity of the male line and as the main source of old-age support for parents (Dyson, 2012). Accordingly, all men have a duty to marry. In recent years, in contrast to the United States and Europe where marriage rates are falling (Crowder and Tolnay, 2000), the marriage rate in China has remained high. Our calculation based

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on 2010 census data shows that the average age at marriage for rural men was 24.8 years, and 83% of rural men were married before age 28. At ages 35-39, 97.2% of men and 99.5% of women in rural areas were married. These data indicate that there is a "universal marriage" culture in China, especially in rural China.

However, because of China's increasingly unbalanced sex ratio at birth (SRB), excess female child mortality, and increasing female marriage migration, a male marriage squeeze has emerged in some rural areas, and finding a wife has become increasingly difficult in recent years. Involuntary bachelors, namely never-married men who want to get married, but cannot do so at a marriageable age because of their low socioeconomic status, are becoming more numerous. For example, an increasing number of reported "bachelor villages" (a name used by some news agencies for villages with a high percentage of involuntary bachelors) have been found in some rural areas. A survey conducted in 364 villages of 28 provinces of China found that there were involuntary bachelors aged 28 and above in most villages, and that the ratio of involuntary bachelors was larger in less-developed villages in the western regions of China (Jin et al., 2013b). As they have no children or a wife to rely on, these men are obliged to live with their parents, or to eke out lonely and dispossessed lives (Das Gupta et al., 2010; Jin et al., 2013a).

As the cohorts of excess males born in the 1980s are only now reaching the expected ages to marry and have children, the male marriage squeeze is not yet too serious. In the next few years, however, as the cohorts born after the 2000s reach marriageable age, the squeeze will become more long-lasting and acute, and more men will fail to marry (Guilmoto, 2012a). Based on the 2010 census data, the sex ratio between never-married men and women aged 15 and above is 134.5, indicating that there will be many more men than women in the marriage market. The culture of "universal marriage" may thus be challenged, at least for men. Recent studies estimate that even if the SRB returned rapidly to normal in 2020, 15% of Chinese men aged 50 in the 2050s would still not have found a wife (Guilmoto, 2012a, 2012b).

Men's difficulty in marrying is receiving increasing attention from the Chinese government and society. Some scholars have begun to explore the determinants and potential consequences of involuntary bachelorhood, and to devise measures to improve the well-being of men who are unable to marry (Tucker and Van Hook, 2013; Dyson, 2012; Liu, 2005; Lu, 2006; Zhang and Zhong, 2005; Jin et al., 2012; Das Gupta et al., 2010). Generally speaking, under the current male marriage squeeze in China, men's individual socioeconomic attributes are important in determining their attractiveness in the marriage market. Women are more likely to marry men with better jobs, higher social status, and higher incomes (Liu, 2005). Indeed, many women have migrated from inland to coastal areas or from the mountains to plain regions with the intention of making better marriages, and this migration has created geographic

variability in the severity of the marriage squeeze, with men in poverty-stricken rural and remote mountainous areas being more severely affected (Liu, 2005; Lu, 2006; Zhang and Zhong, 2005; Davin, 2007; Das Gupta et al., 2010). Families that are poor or have many sons cannot afford the huge sums of money necessary to contract a marriage (Zhang and Zhong, 2005; Lu, 2006), and men who are poor due to unemployment or lack of skills, or who are unable to purchase a new house, have difficulty finding a bride (Hudson and den Boer, 2002; Peng, 2004; Das Gupta et al., 2010). In addition, individual characteristics play important roles; for example, men who are older, less educated, poor communicators and feel more introverted will have fewer opportunities to marry (Peng, 2004; Ye and Lin, 1998; Zhang and Zhong, 2005).

According to social capital theory, network resources affect the socioeconomic status attained (Lin, 1999). China is viewed as a relationship-based society, and social networks, called *guanxi*, play an especially important role in obtaining access to resources and opportunities (Park and Luo, 2001; Warren et al., 2004). Social networks are also important components of the marriage process in China, and finding a bride can be seen as utilizing social networks to seek new social resources (Zhou and Liu, 2007; Kalmijn, 1998; Xia and Zhou, 2003). Under pressure from the marriage squeeze and the rising cost of marriage, social networks are important in providing opportunities for single rural men to meet women and to borrow enough money for marriage, so they are likely to have direct impacts on success in finding a bride. Although social networks have been well studied since the 1970s in the social and behavioural sciences (Wasserman and Faust, 1994), there has been little research on their role in the marriage process. A few studies (Zhou and Liu, 2007; Xu and Li, 2004; Kalmijn, 1998; Xia and Zhou, 2003) have mentioned the roles of networks in contracting a marriage, but quantitative analysis has not been used to explore the relationship between networks and the probability of first marriage.

This study focuses on the matchmaking networks used by rural men. These are social networks whose members introduce unmarried women to unmarried men. If a rural man possesses a matchmaking network before his first marriage, does it give him more opportunities to meet women, thereby increasing his chance of marrying? Using data from the survey "Gender Imbalance and Social Stability: Life of the Rural Population" conducted in X County (a pseudonym) of Anhui Province in 2008, we apply event history analysis to explore factors affecting rural men's probability of first marriage from the perspective of matchmaking networks.

Although the male marriage squeeze caused by the persistently high SRB since the 1980s has been strongly felt since 2000, a male marriage squeeze exists even when the SRB is normal. Analysing determinants of rural men's probability of first marriage for birth cohorts before the 1980s could reveal the regular pattern, and this could be compared with the cohorts born after the 1980s who will suffer a much more serious male marriage squeeze.

I. Theory and hypotheses

Marriage market theory can be applied to rural men's probability of first marriage under the current male marriage squeeze. This theory is often applied to explain marital phenomena and the consequences of imbalance between supply and demand in the marriage market. It proposes that individual social and economic characteristics and resources determine the criteria for selecting one's future partner, and also determine who is likely to be in an inferior position in the marriage market (Tucker and Taylor, 1989; South, 1991). With a male surplus in the marriage market, not everyone faces the same risk of being forced to remain single. Generally speaking, men with high socioeconomic status are likely to have plenty of potential marriage alternatives and therefore higher chances of marriage (South, 1991; Das Gupta et al., 2010).

Matchmaking network characteristics

In contemporary rural China, the process by which a man achieves a marriage includes getting to know a woman and paying the high costs that marriage involves. Meeting a potential partner, with or without a matchmaker, is the first step in the process (Zhou and Liu, 2007). In the period of Chinese history which most Chinese today think of as "traditional" (from the early sixteenth to the mid-twentieth centuries), most marriages were arranged by parents (Wolf and Huang, 1980; Ebrey, 1991; Gates, 1996), and therefore depended on the social network of the groom's (or bride's) family. In contemporary China, a matchmaker, who may be a relative or another network member, still often helps a man and a woman to meet; even in inter-provincial "rural-rural" marriage, or transnational marriage from poor countries to richer countries, matchmakers (including independent brokers) play important roles (Han and Eades, 1995; Yan, 2002; Wang and Chang, 2002). Relationships between a person and his or her network members, including kin, neighbours, friends, colleagues, and so on, remain important for unmarried persons who have not found suitable partners (Xia and Zhou, 2003). However, the once-dominant role of kin members in this process is being replaced by that of friends and colleagues (Xu and Li, 2004; Tian, 2001). Moreover, the fraction of marriages where partners are introduced by others is decreasing, and free choice is becoming increasing frequent; in some urban areas, it is now the most common mode of partner selection (Xu and Li, 2004; Ye and Ye, 2005). Our aim is thus to determine whether the matchmaking network is still a determining factor of men's ability to marry in rural China. If so, are there any differences between the roles of different types of network ties?

Social networks can be characterized by a number of structural elements, including size, density, configuration of ties, homogeneity, and so on (Tucker and Mitchell-Kernan, 1990; White and Riedmann, 1992). In this study, we measure the matchmaking network by size and configuration of network ties.

Network size is the number of network members; normally, the larger a person's social network, the more social capital he or she possesses, and the more likely it is that he or she occupies an advantageous position in society (Coleman, 1988). The network tie configuration of a focal person is the set of relations between that person and members of the network. It is usually measured in terms of strong and weak ties; of kin and non-kin ties; or of relatives, neighbours, friends, and so on (Merz and Huxhold, 2010; Xia and Zhou, 2003; Lai et al., 1998).

In this study, in order to recognize how and whether tie configuration contributes to successful arrangement of a man's marriage, we will record tie configuration in two steps. First we determine whether he does or does not have a network. Then we characterize the network as having only kin ties, only non-kin ties, or both kin and non-kin ties (mixed ties). Our first hypothesis is:

(1) the poorer the matchmaking network resources that a rural man possesses, the lower his probability of marriage. This hypothesis includes three components:

- men with a larger matchmaking network are more likely to marry;
- compared to men without a matchmaking network, men with such a network are more likely to marry;
- there are significant differences between the roles of only kin ties, only non-kin ties and mixed ties: men with mixed ties are most likely to marry, followed by men with only kin ties, and then men with only non-kin ties.

Individual characteristics

Recent studies emphasize the important role of individual socioeconomic status in achieving a marriage, including occupation, income, education, and social status. For example, studies conducted in the US and Europe on marriage criteria have found clear gender differences in people's stated spousal preferences. Women often value men's economic status and potential, while men pay more attention to women's age and appearance (Shackelford et al., 2005; Greitemeyer, 2007). Some studies find that men are also concerned about their potential partner's socioeconomic status; for men and women alike, persons with no stable job, low income, and limited education are often poorly placed in the marriage market (South, 1991; Lloyd and South, 1996; Dykstra, 2004; Greitemeyer, 2007). Generally, however, socioeconomic status affects men's ability to marry more strongly than women's. In China, men's economic characteristics can determine their marital status: women are more likely to marry men with better occupations and higher socioeconomic status, while men in poor socioeconomic positions are more easily rejected in the marriage market (Zhang and Zhong, 2005; Peng, 2004). A calculation using data from the Chinese censuses of 1990 (1% sample) and 2000 (0.1% sample) also shows the effect of education on Chinese men's marriage: for men in the birth cohort

of 1956-1965, over 98% of male college graduates had married by age 35 versus only 72% of men with less than a primary school education (Das Gupta et al., 2010). A survey conducted in Anhui Province also found that women prefer to marry men who can afford a higher standard of living, and low socioeconomic status is a key determinant of singlehood among rural men (Li et al., 2010).

Non-economic individual characteristics also have important effects: being older, disabled, more introverted, or less articulate all make marriage for rural men less likely (Peng, 2004; Ye and Lin, 1998; Zhang and Zhong, 2005). Age is an important factor in the spouse selection process. Most first marriages occur before age 30 in China (Das Gupta et al., 2010). A study in Taiwan found that men who did not marry until their 40s or older, who had wives from mainland China or Southeast Asian countries, usually belonged to vulnerable groups and were unable to marry at younger ages (Tsay, 2004). People with disabilities always face more difficulties in finding a spouse, but due to the population sex-ratio imbalance, disabled men are at an even greater disadvantage than disabled women, and their marriage rate is far below that of both able-bodied men and disabled women (Kohrman, 1999; Guo and Xie, 2009). A study on inter-provincial female marriage migration also showed that men who married women from poor provinces were mainly those whose poverty, older age, or disability prevented them from marrying local women (Davin, 2005).

The importance of character traits in the spouse selection process has received less attention (Yan, 2002; Peng, 2004). Xia and Zhou (2003) found that after the economic reforms of the 1980s, young women in a north Chinese village placed more value on romantic love and shared aspirations. Being extroverted and articulate were seen by young village women as essential traits for their ideal spouse. Men who cannot express their feelings have difficulty in the marriage market, and men who are not articulate or sociable are looked down upon by women, who see them as incapable of adapting to a changing society and as having poor economic potential (Yan, 2002; Peng, 2004).

In exploring the effect of individual characteristics on men's probability of first marriage, our second and third hypotheses are:

(2) rural men with lower socioeconomic status are less likely to marry;

(3) rural men with less attractive non-economic individual characteristics are less likely to marry.

Family and community characteristics

Marriage is a major event for both the groom's and the bride's natal families. In rural China there is a long-standing cultural expectation that parents will help their son(s) get married, in return for which they will receive support in old age and be worshipped as venerated ancestors after death (Wolf, 1974; Wolf and Huang, 1980; Gates, 1996). However, since the economic reforms that began in the early 1980s, the cost of rural marriage for men, including a new house, bride price and wedding ceremony, has risen dramatically; it has been

calculated that in some villages the cost of a son's marriage is generally eight to twenty times the annual income of a family (Han and Eades, 1995; Wei and Zhang, 2009). As a result, rearing a son is much more costly than rearing a daughter, and parents' economic status and their ability to borrow large amounts of money have become very important in ensuring a son's marriage. At the same time, it has become more difficult for a family with more than one son to pay for all their marriages (Chu, 2001; Zhang, 2000). Most families cannot afford more than two sons' weddings (Chu, 2001), and the probability that all sons in such families will marry is relatively low. A quantitative study of the late nineteenth and early twentieth centuries found that factors such as family poverty and many sons often resulted in differentiation between brothers in their family's contribution to financing a marriage (Wolf and Huang, 1980).

In the Chinese tradition of virilocal marriage, where a woman marries into her husband's household, marriage is a major opportunity for women, especially rural women, to escape poverty and improve their socioeconomic status (Fan and Huang, 1998; Davin, 2007). Thus the conditions in the prospective husband's village are important in the spouse selection process, and women usually move up to wealthier villages by marriage (Fan and Li, 2002). For example, Lavely (1991) found that in Shifang County, Sichuan Province, in-marrying brides were always from low-income counties, whereas women marrying out of Shifang always moved to more prosperous areas. When women consider a potential husband, the economic status of his community is of particular importance. Thus, location in the mountains or on the plains, transportation, communications, and other differences between regions often influence an entire community's capacity to attract brides for its young men. Women from poor and remote mountainous areas often adopt a strategy of migrating to the plains to marry, while women from the plains are unwilling to marry into mountainous areas (Liu, 2005; Lu, 2006; Davin, 2007). This pattern inevitably leads to a net transfer of the male marriage squeeze to poverty-stricken areas. Recent studies suggest that female marriage migration all over the world – including rural-rural and rural-urban migration in China, as well as international migration – reflects rational economic decisions, and shows the widespread importance attached to geographic location and the local economy (Davin, 2007). Hence, our fourth and fifth hypotheses are:

(4) rural men from disadvantaged families are less likely to marry;

(5) and rural men from poor communities are less likely to marry.

II. Survey data

The data for this study came from a sample survey in four towns (*zhen,* an administrative unit below the county and above the village, not just one single small town or urban locality) in X County of Anhui Province in August 2008,

conducted by the Institute for Population and Development Studies, Xi'an Jiaotong University. X County is located in eastern Anhui Province, and includes plains and mountainous areas. The county is at a medium economic level, and the rural per capita net income was 4,383 yuan (about 700 USD) in 2007, slightly above the national average of 4,140 yuan (about 670 USD). In this county, the towns and villages on the plains are more developed than those in the mountains. The marriage costs here are very high in relation to local villagers' incomes. In 2006-2008, it cost more than 100,000 yuan (about 16,100 USD) for a man in that county to get married, of which 70-100,000 yuan (about 11,300-16,100 USD) were spent to build a house and 30-50,000 yuan (about 4,800-8,000 USD) to cover bride price, new furniture and appliances, and the wedding itself. At the same time, the SRB in X County was very high. The 2000 and 2010 census data show the SRB here was above 130, substantially above the normal level of 104-107. The four towns covered in the survey had a total population of 187,188, including 1,757 bachelors aged 28 and above. Almost all of them were involuntary bachelors; for example, 96% of never-married men above 28 reported that they had experienced various difficulties in marrying, compared with just 37% among married men. In sum, X County is a suitable site to examine the marriage squeeze and its consequences in rural China.

The objective of this survey was to comprehensively explore the potential effects of the male marriage squeeze on bachelors, families and communities. In addition to never-married and married men, we also surveyed never-married and married women, some parents and village cadres. All of the respondents were rural residents of the surveyed villages. Since we focus here on the factors affecting rural men's probability of first marriage, only never-married and married men are analysed in this study.

First, we used multiple-stage sampling to select respondents from three levels: town, village, and individual. Based on their geography and economic development, we selected four neighbouring towns in X County, two on the plains and two in the mountains. In every town, we selected nine or ten villages randomly, for a total of 38 villages. Second, in every administrative village (which includes multiple natural villages), we used disproportionate stratified random sampling to select the respondents from the sampling frames for never-married men aged 28 and above, and married men under 50, respectively. As there were far fewer never-married aged 28 and above than married men of the same age group, we oversampled the former and downsampled the latter in order to make the statistical analysis possible. Third, because most young never-married men (those less than 28 years old) randomly and frequently leave the county to work in cities, we could not obtain a valid sampling frame for them. Consequently, we included any young never-married man we could find in the surveyed households that were sampled for never-married men aged 28 and above, and married men under 50, who were willing to be interviewed. In short, compared with married men and older never-married men, young

never-married men are more likely to out-migrate to cities for work. Accordingly, our sampling of rural men is generally representative of the age and marital status distribution of rural male residents in contemporary China.

To ensure reliability, the data were collected through face-to-face interviews, and each investigator surveyed all of the respondents in the village to which he or she was assigned. Interviewers were village family planning staff who had high school education or above, and each was assigned a village with which he or she was familiar. Altogether 614 valid questionnaires for men were collected, including 26 never-married men under 28, 323 never-married men aged 28 and above (of whom 158 were under 50), and 265 married men under 50. Because the survey was organized with the support of local government authorities, the response rate was close to 100%. Additionally, the research team trained investigators in advance of the survey, supervised investigators during the survey, reviewed questionnaires, and re-interviewed a 5% sample to ensure data quality. Preliminary analysis suggests that the quality of data (including matchmaking network data) is quite reliable, with a consistency rate above 90% between formal sample interviews and post-survey repeat interviews, apart from some items concerning attitudes (these were about 80% consistent).

Although the legal minimum age at marriage for Chinese men is 22, the 2000 and 2010 census data indicate that it is not rare to contract an early marriage before that age. In rural China, 18 is still usually recognized as the critical age of manhood and most rural males are considered marriageable from age 18 (Lloyd and South, 1996; Liu et al., 2005). Although generally expected to marry before age 28, men occasionally marry as late as age 50, after which they are considered too old to father children and thus no longer marriageable (Dykstra, 2004). However, over the past half-century, especially after the economic reforms and opening-up of Chinese society in the early 1980s, the economy and culture have changed dramatically, and men above 50 today are distinctly different with respect to education, occupation, and so on from men under 50. For this reason we only included men aged between 18 and 50, and excluded 176 men who were not in this age group. In order to ensure that all analyses were based on the same respondents, we removed 26 men with missing values of the variables in the models, leaving a total sample of 412 men, of whom 161 were never-married and 251 were married.

III. Measures and method

Dependent variable

In the survey, we asked respondents their date of birth, their marital status, and the date of married men's first marriage; this made it easier to calculate the duration of their bachelorhood after 18 years of age. For the never-married,

we do not know whether they will marry in the future or, if they do, when they will marry, so the data for them are "censored". For the 161 individuals concerned, event history analysis was used to analyse the effects of relevant factors on rural men's probability of first marriage. The dependent variable is the time between a rural man's 18th birthday and his first marriage.

Independent variables

The independent variables concern the matchmaking network. In the survey, we measured the actual matchmaking network, and each respondent was asked to answer the question "When you looked for a potential spouse, how many family members, relatives, neighbours, friends, or others, respectively, helped introduce you to a potential spouse?" Table 1 shows the distribution of network size for each category by the respondents' marital status. First, the numbers were summed to obtain the value for the "network size" variable. Then we divided the network ties into having a network (when the network size is positive) and no network (when the network size is equal to 0), with no network as reference. We also divided network members into kin and non-kin ties, the former being patrilateral family members and other relatives (e.g. matrilateral or affinal kin), and the latter including neighbours, friends and others. Four categories were thus obtained: no network, only kin ties, only non-kin ties, and both kin and non-kin ties, with no network as the reference.

Table 1. Distribution of network types by size and men's marital status (%)

| Network type | Network size | | | | | |
| | Never-married men (N=161) | | | Married men (N=251) | | |
	0	1	2 +	0	1	2 +
Family members	76	7	17	59	18	13
Relatives	86	7	7	68	21	11
Neighbours	95	3	2	86	9	5
Friends	89	7	4	84	10	6
Others	98	2	0	96	3	1
Total network	60	17	23	24	28	48

Interpretation: 76% of never-married men received no help from family members to find a wife, 7% received help from one family member and 17% received help from two or more family members.
Coverage: 412 rural men aged 18-50.
Source: Data from the 2008, survey of rural residents in X County, Anhui Province.

Control variables

Control variables include individual socioeconomic variables, individual non-economic variables, family variables and community variables.

Individual socioeconomic variables are measured by education and occupation. We asked the respondents to give their educational level, coded as: "primary school and lower", "middle school" and "high school and higher",

with "middle school" as the reference, and their current occupation, with responses classified into agricultural labour and non-agricultural labour, with non-agricultural labour as the reference. This measure may be slightly biased to reflect younger men's relative to older men's occupations. Though people may change their occupations, the new ones still belong to agriculture or non-agriculture. We therefore consider this indicator to be representative of men's socioeconomic status before marriage.

Individual non-economic variables include age, age squared, personality, and the presence of physical disability. Age is a continuous variable. Because the effect of age on the dependent variable may be non-linear, the square of age is also considered. Personality was measured simply by asking the respondents "Do you think you are extraverted?" In our analysis, we coded the responses as extraverted (including "very extraverted", "extraverted"), neutral, and introverted (including "introverted" and "very introverted"), with the first as the reference. For the presence of physical disability, we asked respondents "Do you have any physical disability"? The response is coded as "yes" and "no", with "no" as the reference.

Family characteristics include the family's economic situation when the respondent was about 20 years old and the number of brothers (himself included). We asked "What was the economic situation of your parents when you were about 20 years old?" The self-reports were coded as "medium and above" and "poor", with "medium and above" as reference. The number of brothers is treated as a continuous variable.

For community characteristics, there is a strong correlation between a village's economic standing and its geographic location. Only geographic location was entered into our analysis. We coded it as dichotomous: plains (higher economic standing) and mountains (lower economic standing), with plains as the reference.

Methods and models

We applied three event history analysis methods. First, a Kaplan-Meier survival analysis was used to estimate the duration of rural men's bachelorhood (Table 2). Second, a life table analysis was used to construct curves of the probability of first marriage for tie configurations of the matchmaking network. These curves allow us to compare the dynamics of network tie configurations and men's probability and timing of first marriage. Finally, multivariate Cox hazard regression models were generated to analyse how the various factors affect the probability for rural men of entering first marriage.

Three models were generated. Model 1 is designed to analyse the effects of individual socioeconomic status, individual non-economic characteristics, and family and community characteristics, respectively, on the dependent variable. The two other models are designed to analyse the gross effects of the matchmaking network (Model 2) and the net effects after controlling for

Table 2. Description of variables by men's marital status (N = 412)

Variables	Mean and distribution		
	Total	Never-married men	Married men
Dependent variable			
Duration of bachelorhood after age 18 (years)	15.1 years	18.9 years	5.4 years
Being married	61%	–	–
Independent variables			
Matchmaking network			
Network size (number of members)	1.4	1.1	1.7
Proportion of men with a network	62%	40%	76%
Only kin ties	38%	26%	45%
Only non-kin ties	13%	6%	18%
Both kin and non-kin ties	11%	8%	12%
Individual socioeconomic characteristics			
Primary school and lower	34%	57%	21%
High school and higher	11%	10%	12%
Agricultural labour	41%	51%	36%
Non-economic individual characteristics			
Age	35.5	36.9	34.6
Age^2	1,312.8	1,417.7	1,245.5
Neutral	44%	40%	46%
Introverted	32%	45%	24%
Physically disability	17%	34%	6%
Family characteristics			
Parents with poor economic situation	51%	68%	40%
Number of brothers	1.9	2.1	1.8
Community characteristics			
Mountainous area	49%	59%	43%

Coverage: 412 rural men aged 18-50.
Source: Data from the 2008, survey of rural residents in X County, Anhui Province.

covariates (Model 3). Model 2 explores the effect of having a matchmaking network, and Model 3 examines whether various types of network ties have different effects on the basis of Model 2. The statistical information (including mean and distribution) for all variables is listed in Table 2.

Among the 412 men sampled, 39% were never-married and 61% were married. The average period of bachelorhood of all men (from 18th birthday to age at marriage for married men, or to 2008 for unmarried men) computed by Kaplan-Meier survival analysis was 15.1 years. It was 5.4 years for married men, and 18.9 years on average for never-married men, which means the average marriage age for the married men was slightly above 23 years, and the average age of the never-married men was almost 37 at the time of the survey. Regarding the independent variables, the average size of the matchmaking networks was

small (1.4 persons),[1] and 62% of respondents had such a network. Among those with a network, 38% had kin ties only, a significantly higher proportion than those with only non-kin ties (13%) and those with both kin and non-kin ties (11%). This indicates that family members and relatives were the main matchmakers in our sample.

The small network size reflects the special characteristics of matchmaking networks in China. First, not everyone needs a matchmaking network, and some people find their spouses by themselves. This was the case for 24% of the 251 married men. Second, some men want a matchmaking network, but do not have one because no-one around them knows an appropriate and marriageable partner or is willing to make the introduction. Third, persons are willing to help when the relationship is close, or when being a matchmaker is beneficial or profitable. Thus, considering the cost involved, a man will not have a large network if it is not necessary. Finally, when a man finds his spouse, he no longer needs a matchmaking network, and it will stop growing.

IV. Results

Network tie configuration and men's age at first marriage

A life table analysis was applied to analyse changes in the probability that men in our sample remain single with increasing age under different network tie configurations (Figure 1).

With increasing age, the probability of men remaining single decreases. From 18 to 21 years old, the probability decreases slowly, indicating that only a few rural Anhui men marry in this age group; from 22 to 27 years old the curves drop rapidly, as these are the ages at which most men in our sample got married and at which the proportion of married men in the population increases rapidly. After age 28, the probability of remaining single decreases slowly again, and the "no network" curve remains almost constant.

Having or not having a network affects the probability of marriage. Men with no network have the highest probability of remaining unmarried (about 60% at 28 years old, by which age the overwhelming majority of first marriages have already occurred), and most men with no network are effectively removed from the marriage market at an earlier age (by about 28); however, men with a network, of whatever kind, are relatively less likely to remain single (less than 30% are still single at age 28), and opportunities for a first marriage continue until their early 30s.

Third, among men with a network, the various network tie configurations have different effects. Before age 25, the curve of "kin ties" is the lowest, indicating that kin ties play a more important role at the most common marriage

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(1) For men with a network, the average network size was 2.3 persons.

Figure 1. Men's probability of remaining single by matchmaking network ties before marrying
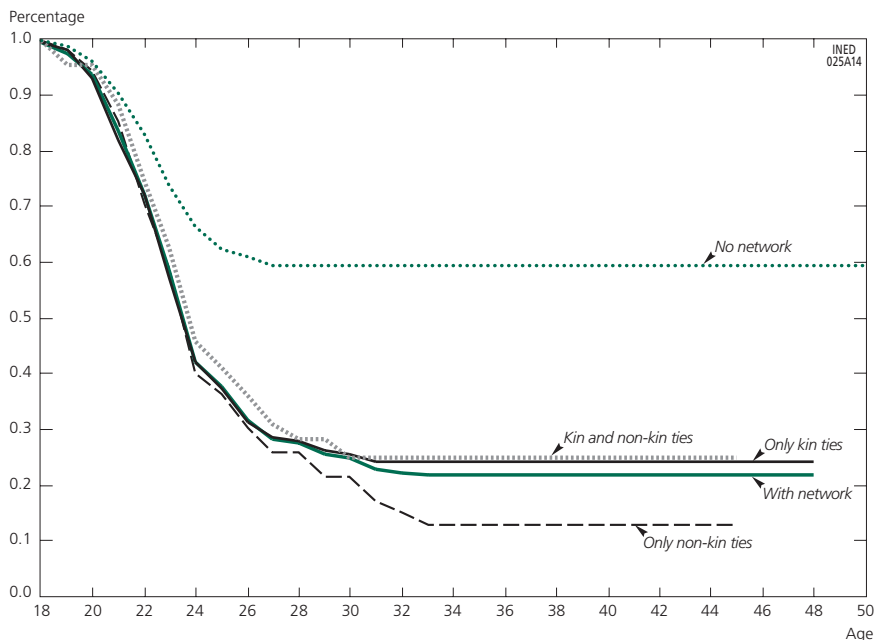
ages than other network ties, but the difference is small. After age 25, the curve of "non-kin ties" is the lowest, showing that among this older age group, non-kin ties play a more important role in increasing men's probability of marrying. Surprisingly, the curve of "both ties" is higher after age 20. In sum, having a matchmaking network does indeed increase the chance of first-marriage for men in our sample. Moreover, kin and non-kin ties contribute differently: at the primary ages for marriage (18-25), kin ties play a more important role, but at the later ages (over 25), non-kin ties are more important while the combined role of both ties is weaker.

So far only the gross effect of the network tie configuration has been taken into account. After other factors are considered, does the matchmaking network play an important role in increasing the probability of first marriage for rural men in Anhui, and do different types of ties have markedly different effects on this probability? We used multivariate regression to address this question.

Results of Multivariate Regression

A Cox hazard regression method was applied to produce three models, the results for which are reported in Table 3. Model 1 is intended to estimate the effects of individual socioeconomic status, individual non-economic characteristics, and family and community characteristics on the probability of first marriage for men in our sample. Models 2 and 3 then estimate the

Table 3. Cox regression of determinants of rural men's risk of first marriage

Variables	Model 1			Model 2		Model 3	
	Socioeconomic characteristics	Non-economic characteristics	Family and community characteristics	Gross effect	Net effect	Gross effect	Net effect
Matchmaking network							
Network size				0.960 (0.036)	0.940 (0.040)	0.962 (0.041)	0.952 (0.047)
Having a network				2.651 (0.168) ***	2.225 (0.174) ***	2.569 (0.178) ***	2.296 (0.185) ***
Only kin ties						2.835 (0.205) ***	2.052 (0.212) **
Only non-kin ties						2.665 (0.290) **	1.926 (0.303) *
Both kin and non-kin ties							
Socioeconomic characteristics							
Primary school and lower (*ref.* middle school)	0.354 (0.161) ***				0.571 (0.171) **		0.567 (0.171) **
High school and higher	0.798 (0.202)				0.811 (0.210)		0.812 (0.210)
Agricultural labour (*ref.* non-agricultural)	0.743 (0.134)				0.979 (0.145)		0.986 (0.146)
Non-economic characteristics							
Age		0.966 (0.099)			0.961 (0.104)		0.952 (0.104)
Age^2		1.000 (0.001)			1.001 (0.001)		1.001 (0.001)
Neutral personality (*ref.* extraverted)		0.599 (0.162) **			0.674 (0.165) *		0.668 (0.165) *
Introverted		0.392 (0.178) ***			0.478 (0.180) ***		0.472 (0.181) ***
Physical disability (*ref.* no disability)		0.237 (0.264) ***			0.274 (0.267) ***		0.273 (0.268) ***
Family characteristics							
Parents in poor economic situation (*ref.* medium or good economic situation)			0.536 (0.135) ***		0.698 (0.149) *		0.692 (0.149) *
Number of brothers			0.756 (0.086) **		0.783 (0.090) **		0.786 (0.091) **
Community characteristics							
Mountainous area (*ref.* plain)			0.666 (0.129) **		0.733 (0.131) *		0.725 (0.132) *
-2LL	2,765.5 ***	2,726.5 ***	2,764.9 ***	2,783.4 ***	2,656.5	2,783.1	2,655.7 ***

Notes: Relative risk ratios and standard errors are in parentheses; N = 412.
Interpretation: A relative risk ratio lower than 1 means a negative effect while a ratio higher than 1 means a positive effect.
Significance levels: * p < 0.05; ** p < 0.01; *** p < 0.001.
Source: Data from the 2008, survey of rural residents in X County, Anhui Province.

effects of the matchmaking network on that probability. Most non-matchmaking network factors have significant effects on the probability of rural men's first marriage (Model 1). In terms of individual socioeconomic characteristics, educational level and occupation have significant effects. Compared to men with a middle-school educational level, men with a level of primary school or lower are less likely to get married. Compared with men in non-agricultural jobs, the probability of a first marriage for men working in agriculture is lower. Both the risk ratios and the model are significant, indicating that individual socioeconomic characteristics are important factors in rural Anhui men's marital status.

In terms of individual non-economic characteristics, personality and reported disability have significant effects. Personality has a linear effect on the dependent variable. Compared with extroverted men, the probability of first marriage for neutral personalities is lower (59.9%), but is lowest for introverted men (39.2%). Men with disabilities are much less likely to marry than men without disabilities.

Family and community factors also have significant effects. For men whose parents' economic situation was poor when these men were around 20 years old, their probability of first marriage is only 54% that of men whose parents' economic condition was not poor. The number of brothers also has a significant negative effect: for any man, each increase in the number brothers will lower the probability of first marriage by 24%. Living in a mountainous area also greatly decreases men's opportunity for a first marriage.

In Models 2 and 3, social network factors are entered to explore the gross effects of the matchmaking network on the probability of first marriage and the net effects after covariates are controlled. We find that the tie configuration, but not the size of the matchmaking network, has an important effect on the probability of men's first marriage. From Model 2, in terms of gross effects, the probability of first marriage for men having a network is more than twice that of men without a network. After controlling for the covariates, the net effect of network configuration is still significant, although the risk ratio is slightly lower.

In order to explore whether there are significant differences among different kinds of network ties, we divided "having a network" into three categories: only kin ties, only non-kin ties, and both kin and non-kin ties (Model 3). All categories of network ties have positive and significant effects on the probability of men's first marriage compared to having no network. Moreover, among the three categories of network ties, the probability of a first marriage for men with only kin ties is slightly higher than that of men with the other two kinds of ties. This indicates that kin ties still play a more important role in matchmaking. The probability of a first marriage for men with both kin and non-kin ties is still the lowest, which is unexpected. But the difference between all three is small. Perhaps this just reflects the matchmaking strategy for some men who

have difficulty in getting married. In families with social networks, when a man cannot get married at an appropriate age, his family may ask more people (including both relatives and non-relatives) for help to introduce him to unmarried women. This may under-estimate the role of both ties, as well as partly explain why men with larger matchmaking networks are not always the most likely to marry.

Relative to Model 1, except for occupation, the significance levels of the covariates are practically unchanged, although some slight changes emerge for the risk ratios. For occupation, the strong correlation with education and disability explains this result, but the selection of respondents and the local economy at the survey site may also contribute. The survey was carried out in rural villages, and the respondents were residents of the surveyed villages who were engaged in agricultural production, or were hired by local enterprises, or had been running their own business within the county for a long time, while migrants who left the rural county for the urban county seat, or for other cities, were not included. In addition, local cash crops and poultry farming can increase farmers' incomes, so the income level of people engaged in agricultural occupations in our sample may not be much lower than that of non-agricultural workers. As the fertility rate has declined since the implementation of family planning in the late 1970s, there is also a strong correlation between age and number of brothers, and when both of these variables are entered into the same model, the effect of age may not be significant.

V. Discussion

This article reveals the major factors behind involuntary bachelorhood among rural Chinese men, and those that may help to facilitate their first marriage. For the determinants of Chinese rural men's probability of first marriage, previous research has focused on individual characteristics, especially individual socioeconomic characteristics such as education and occupation, but few studies have adopted a social network perspective. This article reveals the relationship between type of a matchmaking network and men's probability of marrying by age at first marriage. Although education, an important individual socioeconomic variable, significantly affects matchmaking network ties (results not shown here), the matchmaking network itself has direct effects on men's probability of first marriage, even after controlling for some key individual socioeconomic variables. In a relationship-based society like China, matchmakers, who are men's relatives or non-relatives, usually play an important role in increasing men's chances of marrying. Men who have no matchmaking network face a high risk of remaining single. Among men with a matchmaking network, network configurations affect their probability of marrying: kin ties play a more important role in increasing probability, especially at men's expected ages for marriage (between ages 18-25), while the role of non-kin ties are more

important at later ages (over 25). This could explain the finding that men who marry earlier usually find their spouses through family arrangement, while men who marry later usually find them through their own friends or others, probably because they are more independent and socialized, or because the kin ties were ineffective. Unexpectedly, the probability of a first marriage for men with both kin and non-kin ties is the lowest. Perhaps this reflects the matchmaking strategy for some men who have more difficulties in finding a wife. When a man cannot get married at an appropriate age, his family may attempt to ask more people (including both relatives and non-relatives) for help. This may under-estimate the roles of both kinds of ties and partly explains why men with larger matchmaking networks are not always the most likely to marry.

Apart from the matchmaking network, our analyses confirm that other characteristics, such as low socioeconomic status, being introverted, having disabilities, having many brothers, and coming from a poor community, greatly increase the probability of remaining unmarried. Marriage market theory appears to provide a good explanation for the competitive disadvantages of men with lower socioeconomic status and resources in local marriage markets in rural China. These men are more likely to be excluded from the marriage market.

We also find that rural men's probability of first marriage changes as their age increases, and age 27 is an important watershed for their marriage probability. Most men marry between the ages of 22 and 27, and the probability of first marriage decreases sharply from age 28, dropping almost to zero above age 34.

The male marriage squeeze is not new in rural China: throughout the country's history there have always been some men who were unable to find a wife at marriageable ages even when fertility was high and sex ratios at birth were normal. However, the marriage squeeze caused by the persistently high SRB after the1980s will be much more serious, and there will be large numbers of surplus males in the coming years (Ebenstein and Sharygin, 2009). Our findings throw indirect light on the importance of matchmaking networks for rural Chinese men wishing to marry in the context of a male marriage squeeze in future years. Because many of the men in our analysis were born before the 1980s when the SRBs were close to normal and the fertility rates were higher, we did not expect our findings to reflect directly the determinants of the first marriage probability for rural men born after the 1980s. It will not be possible to analyse the marriage squeeze caused by high SRBs and low fertility until the younger birth cohorts enter the future marriage market. First, men's strong demand for marriageable women could lead to a rise in illegal marriage strategies such as abduction, mercenary marriage, and forced marriage. The number of legal and illegal professional marriage brokers may increase and they may become important members of men's matchmaking networks. Further research

may show whether the number of brothers affects the probability of first marriage for men born after the 1980s.

Our findings only reflect the situation in moderately developed regions of central China like our study site, Anhui Province, which cannot be generalized to the whole country. Because the male marriage squeeze is more serious in poverty-stricken, remote, and mountainous rural areas, usually located in western China (Jin et al., 2013b; Das Gupta et al., 2010), the findings may differ in other places. Further research will focus on less-developed rural areas.

There are limitations on our measurement of the matchmaking network. A man's network may undergo numerous changes before he finds his spouse. Because the time needed to find a wife is uncertain and variable, we do not know if the matchmakers are actually successful in helping men to meet potential partners. The timing of resorting to the network may have a significant effect on men's first marriage probability, but our study did not have the data to evaluate this. Moreover, in the absence of any recognized standard measurement for matchmaking networks, we used a simple question to collect as much matchmaking network data as possible via a comprehensive questionnaire of feasible length. This approach was effective in the context of Chinese rural society. In the future we will improve our measurement of matchmaking networks by introducing social network measurements such as name generators or position generators.[2]

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[2] The name generator method is used to measure the social network using members' names and the characteristics of their relations with the respondent (social support, discussion, visit, etc.) and to collect information on network density and intensity of ties (Marin and Hampton, 2007). The position generator method is used to collect information on social capital (occupation, position in the social hierarchy) and to measure how the network provides access to certain occupations (Lin, 1982; Van Der Gaag and Snijders, 2005).

REFERENCES

CHU J., 2001, "Prenatal sex determination and sex-selective abortion in rural central China", *Population and Development Review*, 27(2), pp. 259-281.

COLEMAN J. S., 1988, "Social capital in the creation of human capital", *American Journal of Sociology*, 94(1), pp. 1-11.

CROWDER K. D., TOLNAY S. E., 2000, "A new marriage squeeze for Black women: The role of racial intermarriage by Black men", *Journal of Marriage and the Family*, 62(3), pp. 792-807.

DAS GUPTA M., EBENSTEIN A., SHARYGIN E. J., 2010, *China's Marriage Market and Upcoming Challenges for Elderly Men*, World Bank Policy Research Working Paper Series.

DAVIN D., 2005, "Marriage migration in China: The enlargement of marriage markets in the era of market reforms", *Indian Journal of Gender Studies*, 12(2-3), pp. 173-188.

DAVIN D., 2007, "Marriage migration in China and East Asia", *Journal of Contemporary China*, 16(50), pp. 83-95.

DYKSTRA P. A., 2004, "Who remains unmarried?", symposium "The never-married in later life: Potentials, problems, and paradoxes", Gerontological Society of America, Washington D.C.

DYSON T., 2012, "Causes and consequences of skewed sex ratios", *Annual Review of Sociology*, 38, pp. 443-461.

EBENSTEIN A. Y., SHARYGIN E. J., 2009, "The consequences of the 'missing girls' of China", *The World Bank Economic Review*, 23(3), pp. 399-425.

EBREY P. B., 1991, "Shift in marriage finance from the sixth to thirteenth century", *in* Rubie S. W., Ebrey P. B. (eds.), *Marriage and Inequality in Chinese Society*, Berkeley, CA, University of California Press, pp. 97-132.

FAN C. C., HUANG Y., 1998, "Waves of rural brides: Female marriage migration in China", *Annals of the Association of American Geographers*, 88(2), pp. 227-251.

FAN C. C., LI L., 2002, "Marriage and migration in transitional China: A field study of Gaozhou, western Guangdong", *Environment and Planning A*, 34(4), pp. 619-638.

GATES H., 1996, *China's Motor: A Thousand Years of Petty Capitalism*, Ithaca, NY, Cornell University Press, 326 p.

GREITEMEYER T., 2007, "What do men and women want in a partner? Are educated partners always more desirable?", *Journal of Experimental Social Psychology*, 43(2), pp. 180-194.

GUILMOTO C. Z., 2012a, *Sex Imbalances at Birth: Current Trends, Consequences and Policy Implications*, UNFPA Asia and Pacific Regional Office.

GUILMOTO C. Z., 2012b, "Skewed sex ratios at birth and future marriage squeeze in China and India, 2005-2100", *Demography*, 49(1), pp. 77-100.

GUO M., XIE T., 2009, "The marriage of disabled adults and its determinants: A case study on the hearing-impaired population", *Chinese Journal of Population Science*, 3, pp. 67-75 (in Chinese).

HAN M., EADES J. S., 1995, "Brides, bachelors and brokers: The marriage market in rural Anhui in an era of economic reform", *Modern Asian Studies*, 29(4), pp. 841-869.

HUDSON V. M., DEN BOER A., 2002, "A surplus of men, a deficit of peace: Security and sex ratios in Asia's largest states", *International Security*, 26(4), pp. 5-38.

JIN X., GUO Q., FELDMAN M. W., 2013a, "Marriage squeeze and intergenerational transfers in contemporary rural China: Evidence from Yi County of Anhui Province", the 27th IUSSP International Population Conference, Busan, Korea.

JIN X., LIU L., LI Y., FELDMAN M. W., LI S., 2013b, "'Bare branches' and the marriage market in rural China: Preliminary evidence from a village-level survey", *Chinese Sociological Review*, 46 (1), pp. 83-104.

KALMIJN M., 1998, "Intermarriage and homogamy: Causes, patterns, trends", *Annual Review of Sociology*, 24(1), pp. 395-421.

KOHRMAN M., 1999, "Grooming Quezi: Marriage exclusion and identity formation among disabled men in contemporary China", *American Ethnologist*, 26(4), pp. 890-909.

LAI G., LIN N., LEUNG S., 1998, "Network resources, contact resources, and status attainment", *Social Networks*, 20(2), pp. 159-178.

LAVELY W., 1991, "Marriage and mobility under rural collectivization", in Watson R. S., Ebrey P. B. (eds.), *Marriage and Inequality in Chinese Society*, Berkeley, CA, University of California Press, pp. 286-312.

LI S., ZHANG Q., YANG X., ATTANÉ I., 2010, "Male singlehood, poverty and sexuality in rural China: an exploratory survey", *Population, English Edition*, 65 (4), pp. 679-693.

LIN N., 1999, "Social networks and status attainment", *Annual Review of Sociology*, 25, pp. 467-487.

LIU Z., 2005, "The inspiration from a village", *China's National Conditions and Strength*, 11, pp. 41-43 (in Chinese).

LIU J., LARSEN U., WYSHAK G., 2005, "Prevalence of primary infertility in China: In-depth analysis of infertility differentials in three minority province/autonomous regions", *Journal of Biosocial Science*, 37(1), pp. 55-74.

LLOYD K. M., SOUTH S. J., 1996, "Contextual influences on young men's transition to first marriage", *Social Forces*, 74(3), pp. 1097-1119.

LU J., 2006, "An investigation into the shortage of women in western rural China", *Chinese Writers*, 19, pp. 117-146 (in Chinese).

MARIN A., HAMPTON K. N., 2007, "Simplifying the personal network name generator alternatives to traditional multiple and single name generators", *Field Methods*, 19(2), pp. 163-193.

MERZ E.-M., HUXHOLD O., 2010, "Wellbeing depends on social relationship characteristics: Comparing different types and providers of support to older adults", *Ageing and Society*, 30(5), pp. 843-857.

PARK S. H., LUO Y., 2001, "Guanxi and organizational dynamics: Organizational networking in Chinese firms", *Strategic Management Journal*, 22(5), pp. 455-477.

PENG Y., 2004, "An exploration into the phenomenon of involuntary bachelors in poverty-stricken area", *Youth Studies*, 6, pp. 18-20 (in Chinese).

SHACKELFORD T. K., SCHMITT D. P., BUSS D. M., 2005, "Universal dimensions of human mate preferences", *Personality and Individual Differences*, 39(2), pp. 447-458.

SOUTH S. J., 1991, "Sociodemographic differentials in mate selection preferences", *Journal of Marriage and the Family*, 53(4), pp. 928-940.

TIAN X., 2001, "Spouse selection patterns and variation in the transition period", *Zhejiang Academic Journal*, 1, pp. 99-101 (in Chinese).

TSAY C., 2004, "Marriage migration of women from China and Southeast Asia to Taiwan", *in* Jones G., Ramdas K. (eds.), *(Un)tying the Knot: Ideal and Reality in Asian Marriage*, Singapore, Asia Research Institute, National University of Singapore, pp. 173-191.

TUCKER M. B., TAYLOR R. J., 1989, "Demographic correlates of relationship status among Black Americans", *Journal of Marriage and the Family*, 51(3), pp. 655-665.

TUCKER M. B, MITCHELL-KERNAN C., 1990, "New trends in Black American interracial marriage: The social structural context", *Journal of Marriage and the Family*, 52(1), pp. 209-218.

TUCKER C., VAN HOOK J., 2013, "Surplus Chinese men: Demographic determinants of the sex ratio at marriageable ages in China", *Population and Development Review*, 39(2), pp. 209-229.

VAN DER GAAG M., SNIJDERS T. A. B., 2005, "The resource generator: Social capital quantification with concrete items", *Social Networks*, 27(1), pp. 1-29.

WANG H., CHANG S., 2002, "The commodification of international marriage: Crossborder marriage business in Taiwan and Vietnam", *International Migration*, 40(6), pp. 93-116.

WARREN D. E., DUNFEE T. W., LI N., 2004, "Social exchange in China: The doubleedged sword of Guanxi", *Journal of Business Ethics*, 55(4), pp. 353-370.

WASSERMAN S., FAUST K., 1994, *Social Network Analysis: Methods and Applications*, Cambridge, MA, Cambridge University Press, 825 p.

WEI S., ZHANG X., 2009, "Sex ratios and savings rates: Evidence from 'excess men' in China", *NBER Working Paper.*

WHITE L. K., RIEDMANN A., 1992, "Ties among adult siblings", *Social Forces*, 71(1), pp. 85-102.

WOLF A. P., 1974, "Gods, ghosts, and ancestors", in Wolf A. P. (ed.), *Religion and Ritual in Chinese Society*, Stanford, CA, Stanford University Press.

WOLF A. P., HUANG C. S., 1980, *Marriage and Adoption in China*, Stanford, CA, Stanford University Press.

XIA Y. R., ZHOU Z. G., 2003, "The transition of courtship, mate selection, and marriage in China", in Hamon R. R., Ingoldsby B. B. (eds.), *Mate Selection Across Cultures*, Thousand Oaks, CA, Sage Publications, Inc., pp. 231-246.

XU A., LI Y., 2004, "Young people's mating process: Changes in the transition period", *Youth Studies*, 1, pp. 14-23 (in Chinese).

YAN Y., 2002, "Courtship, love and premarital sex in a north China village", *China Journal*, 48, pp. 29-53.

YE W., LIN Q., 1998, "Analysis on the reasons for and countermeasures against the problem of the involuntary bachelors in China", *Population Science of China*, 4, pp. 16-22 (in Chinese).

YE Y., YE W., 2005, "The spouse selection model and its affection factors of floating population: Use floating population in Xiamen as an example", *Population Journal*, 3, pp. 46-52 (in Chinese).

ZHANG W., 2000, "Dynamics of marriage change in Chinese rural society in transition: A study of a northern Chinese village", *Population Studies*, 54(1), pp. 57-69.

ZHANG C., ZHONG Z., 2005, "Analysis of the causes of involuntary bachelors in rural China: Cases from Y Village in Z Town of Qianjiang City, Hubei Province", *Youth Studies*, 1, pp. 17-19 (in Chinese).

ZHOU C., LIU M., 2007, "People's mating behaviors from the perspective of social network", *Exploration and Free Views*, 9, pp. 26-29 (in Chinese).

Lige LIU, Xiaoyi JIN, Melissa J. BROWN, Marcus W. FELDMAN • **INVOLUNTARY BACHELORHOOD IN RURAL CHINA: A SOCIAL NETWORK PERSPECTIVE**

If a man has a matchmaking network, will this increase his chance of marrying? Using survey data from X County in Anhui Province collected in 2008, we analyse the determinants of first marriage probability for 18 to 50-year-old rural Chinese men (N = 412) in terms of their social networks. We find that age at first marriage for rural Chinese men is concentrated in the interval between 22 and 27 years, and the probability of first marriage decreases sharply from age 28, and drops to almost zero above age 34. We also find that tie configuration, but not the size of the matchmaking network, has an important effect on the probability of men's first marriage. The men who have no matchmaking network face a high risk of remaining single. Among men with a matchmaking network, different network configurations have slightly different effects: kin ties play a more important role in increasing men's probability of marrying, especially at men's most common marriage ages. The probability of first marriage for men with both kin and non-kin ties is the lowest, which may reflect the matchmaking strategy for some men who have more difficulties in getting married.

Lige LIU, Xiaoyi JIN, Melissa J. BROWN, Marcus W. FELDMAN • **LE CÉLIBAT MASCULIN INVOLONTAIRE EN CHINE RURALE : UNE APPROCHE PAR LE RÉSEAU SOCIAL**

Si un homme dispose d'un réseau d'intermédiaires, ses chances de se marier en sont-elles accrues ? En exploitant des données d'enquête recueillies en 2008 dans le district X de la province d'Anhui en Chine, les auteurs analysent les déterminants de la probabilité de premier mariage selon le type de réseau d'un échantillon d'hommes âgés de 18 à 50 ans vivant en milieu rural (N = 412). L'âge au premier mariage des hommes se concentre entre 22 et 27 ans, et la probabilité de se marier chute fortement après 28 ans, pour devenir quasiment nulle au-delà de 34 ans. Le type de lien qui existe entre l'individu et les membres de son réseau a beaucoup plus d'influence sur la probabilité de primo-nuptialité masculine que la taille du réseau. Les hommes sans réseau présentent un risque plus important de rester célibataires. Pour ceux qui en ont un, les types de réseau ont des effets légèrement différents : ce sont les réseaux familiaux qui renforcent le plus la probabilité de mariage, particulièrement aux âges auxquels la plupart des hommes se marient. La probabilité de premier mariage des hommes qui bénéficient d'un réseau mixte, à la fois familial et non familial, est la plus faible : ceci peut traduire la stratégie de recherche de conjoint de certains hommes qui ont plus de difficultés pour se marier.

Lige LIU, Xiaoyi JIN, Melissa J. BROWN, Marcus W. FELDMAN • **LA SOLTERÍA MASCULINA INVOLUNTARIA EN CHINA: UN ENFOQUE A TRAVÉS DE LAS REDES SOCIALES**

Si un hombre dispone de una red de intermediarios para buscar su futuro cónyuge ¿su probabilidad de casarse aumenta? A partir de una encuesta realizada en 2008 en medio rural, en el distrito X de la provincia de Anhui en China, sobre una muestra de 412 hombres de 18 a 50 años, los autores analizan los determinantes de la probabilidad de contraer un primer matrimonio según el tipo de red. Constatan que la edad al primer matrimonio de los hombres se concentra entre 22 et 27 años y que la probabilidad de casarse disminuye fuertemente a partir de 28 años, para ser casi nula más allá de 34 años. Los autores observan también que el tipo de lazos que existen entre el individuo y los miembros de su red influye más en la probabilidad de casarse que la dimensión de la red. Los hombres sin red de intermediarios corren un mayor riesgo de quedarse solteros. El tipo de red tiene efectos un poco diferentes: las redes familiares son las que tienen más influencia, sobre todo en las edades de mayor frecuencia del matrimonio. Los hombres que poseen una red mixta (a la vez familiar y no familiar) son los que tienen una menor probabilidad de casarse: ello puede traducir una estrategia de búsqueda de cónyuge de ciertos hombres que tienen más dificultades para casarse.