Was There a Revolution? Kinship and Inequality over the Very Long Term in Liaoning, China, 1749-2005

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Introduction

The era in China that followed the founding of the People's Republic in 1949 was one of the most ambitious attempts at social and economic leveling in human history. Through the Land Reform of the nineteen-fifties, the Cultural Revolution of the late nineteen-sixties, and numerous other efforts, the socioeconomic order that had existed before 1949 was supposed to be erased or even inverted. In the new society, the elites that had dominated society before 1949 were to be stripped of their power and influence. Through the assignment of hereditary class labels and application of linked programs of discrimination, they were to be turned into a new underclass. Society would be opened up, so that individual attainment would be based on merit and political commitment, not parental characteristics. To the extent that family background mattered, associations should have been reversed, so that elite origins should have disadvantaged individuals, while humble origins should have advantaged them.

This paper carries out an initial assessment of the long-term consequences of social and economic leveling after 1949 by examining changes in stratification in one small part of China over the very long term, from the middle of the eighteenth century to the present. Making use of a unique dataset that follows a selection of families in rural Liaoning from the middle of the eighteenth century to the present, we address two basic questions. First, we examine whether father-son correlations in attainment in the Qing dynasty (1644-1911) and the People's Republic differed. To the extent that the changes that followed 1949 increased fluidity, father-son correlations in attainment should have been lower after 1949 than during the Qing. Second, we assess change and continuity in the social order, assessing how the relative standing of families evolved between the Qing and the present. Specifically, we examine how the rankings of families in terms of attainment of official position and education corresponded between the Qing and the period after 1949.

We analyze a unique dataset that follows selected families in rural Liaoning in northeast China from 1749 to the present. The core of the dataset comprises historical household registers from rural Liaoning between 1749 and 1909. These registers allow for linkage of individuals into descent groups and descent group branches, and for the measurement of aggregate characteristics of these kin groups such as their attainment. To these historical data we have linked retrospective survey data that describe social and economic outcomes during the twentieth century of the descendants of a small number of descent groups covered by the registers. The result is a dataset that follows a specific and well-defined population from the middle of the eighteenth century to the present, and allows for a systematic examination of changes over time in father-son correlations in attainment, and the rankings of families in terms of their attainment.

The analysis advances the analysis of intergenerational mobility by moving beyond consideration of parent-child correlations in attainment to assessment of the role of kin networks. We have already shown that models of intergenerational mobility that only allow for parent-child associations yield an incomplete picture of stratification processes in a society like China where kin networks are a key unit of social and

economic organization (Campbell and Lee 2003, 2006). Whereas those studies focused on the role of specific paternal kin such as grandparents, uncles, and cousins, this analysis considers descent group membership as a mechanism of stratification. We show that in rural Liaoning before the twentieth century descent group membership was a more important determinant of social and economic outcomes than village of residence, and that there was long-term continuity from the late imperial era to the present in the relative standing of descent group branches.

The paper is organized as follows. First, we provide background on stratification in China, briefly reviewing the literature on historical and contemporary social mobility. Second, we introduce our data, describing the historical household registers, the contemporary survey data, and the extract file that we analyze that combines data from both sources to provide records of members of selected descent groups from the middle of the eighteenth century to the present. Third, we summarize the methods that we use to assess changes in father-son correlations in attainment, the importance of descent group membership to stratification, and changes in the rank ordering of descent group branches. Fourth, we present our results. Like Gaul, our presentation is divided into three parts. We begin with an assessment of changes in social fluidity between the late imperial era and the present by comparing father-son associations in attainment. We then assess the importance to inequality in individual outcomes in the past of descent group membership, comparing its role to that of village of residence. Finally, we examine continuity from the past to the present in the standing of descent groups and descent group branches. The paper concludes with remarks about the implications of our results for our understanding of stratification in China, and directions for future research.

The results here are tentative. They are the first fruits of an ongoing effort to clean and organize the contemporary survey data and link them to the household register data. As described later, analyses involving the aggregate characteristics of descent group branches, including the examination of correlations in the rank ordering of families by attainment, make use of a subset of the contemporary data. This subset is from the households that could be linked directly to specific descent group branches in the historical registers. The remaining households can also be associated with specific descent group branches, but this requires additional linkage that is still ongoing. More generally, we plan in the next few years to collect contemporary data from more villages, dramatically expanding the number of descent groups and descent group branches for which data are available.

Background

At least until now, the literatures on social mobility in contemporary and historical China have been separate. For the most part, discussions of social mobility and stratification in China before the twentieth century took place among historians, and focused on the role of family background in the attainment of national-level government positions through success in the imperial examination system (Ho 1962, Hymes 1986). Systematic studies of social mobility and stratification that consider more common forms of attainment are rare. The primary exceptions are recent analyses of attainment of

various types of official position in the Qing (1644-1911) dynasty household registers from rural Liaoning that we analyze here. Lee and Campbell (1997), the first analysis of social mobility in the registers, demonstrated an association between father's and son's attainment chances through simple cross-tabulations.

In a more systematic follow-up that applied more advanced methods to an expanded dataset of Liaoning household registers, Campbell and Lee (2003) showed that the sons of men who held an official position experienced an eight-fold increase in the odds of attaining a position of their own. Comparison with the results from the limited number of published studies of European and North American populations before the twentieth century suggested that by the standards of historical Western populations this was actually a relatively weak association. Elites in the other populations were much more successful at transmitting their status. Campbell and Lee (2003) also demonstrated the role of kin networks beyond the household in stratification processes by showing that kin other that the father who held official positions raised the attainment chances of individuals.

The literature on intergenerational social mobility in contemporary China is much larger, and located primarily within sociology. Most relevant to the work here are efforts to reconstruct trends since 1949 in the influence of family background on educational and occupational attainment. Cheng and Dai (1995) examined trends in intergenerational occupational mobility in data from a retrospective survey and concluded that while there had been fluctuations in openness since 1949 in response to specific state policies, there was little in the way of long-term trend, and no evidence of monotonic increases in openness. Analyzing data on multi-generational households in the 1982 Chinese census, Deng and Treiman (1997) examined trends in intergenerational associations in educational attainment among male birth cohorts starting from the nineteen-forties and concluded that the influence of father's characteristics on educational attainment was relatively weak to begin with and declined afterward. Zhou, Moen and Tuma (1998) report little change over time in the influence of father's occupation on educational attainment, but substantial fluctuations in the influence of family class background that are related to state policy.

The most important conclusion from this brief review is that existing work does not allow for direct assessment of the influence of political, social and economic changes associated with the founding of the People's Republic on patterns of stratification. All of the historical studies cover the period before the twentieth century. The contemporary studies refer to largely cohorts who came of age after 1949, and therefore experienced an educational system and labor market that had already been altered by the monumental changes that immediately followed the founding of the People's Republic in 1949. of the nineteen-fifties. Thus while studies such as Deng and Treiman (1997), Zhou, Moen and Tuma (1998), and Cheng and Dai (1995) illuminate fluctuations in stratification patterns after 1949 that occurred in response to the Cultural Revolution, the subsequent shift back to a market economy, and other state interventions, they do not compare stratification patterns after the founding of the People's Republic with those before. To the extent that they report results for the nineteen-forties or early nineteen-fifties that might hint at

historical patterns, it should be kept in mind that the country was in turmoil in the decades before 1949, and results might not be representative of longer-term patterns. This study accordingly fills a gap in the existing literature by following a specific population from the eighteenth century to the present, and comparing the influence of family background on attainment before and after 1949.

Review of these contemporary studies suggests that our own study can add little to knowledge of trends and patterns after 1949. Previous studies based on national data have already measured changes in the influence of family background on social attainment using data that are more representative of China as a whole, and linked fluctuations in the determinants of attainment after 1949 to specific changes in the political, social, and economic environment. Thus for the time being, we do not attempt a fine-grained analysis of short-term changes in the determinants of attainment after 1949. As our dataset expands, of course, we are likely to return to the issue of changes after 1949, and in our conclusion we outline some likely future directions.

Historical and especially contemporary studies of stratification in China mostly neglect the potential role of kin networks in shaping individual attainment chances, by focusing on parent-child, usually father-son, associations in attainment. The primary exceptions are Hymes (1986) and Campbell and Lee (2003, 2006). Responding to Ho's (1962) suggestion that the high proportion of successful imperial exam candidates who were neither the sons nor grandsons of exam candidates was evidence of historical China's social fluidity, Hymes (1986) argued that such weak father-son associations exaggerated social fluidity because they failed to account for the role of kin networks. Analyzing data from eighteenth- and nineteenth-century Liaoning, Campbell and Lee (2003, 2006) confirmed that while father-son associations were relatively weak compared to historical Western populations, characteristics of more distant kin were associated with attainment chances. They found, however, that even when such associations were accounted for, social fluidity in historical Liaoning appears to have been higher than in the West, in the sense that relatively high proportions of men in each generation who attained elite position were from undistinguished backgrounds.

The large literature on kinship in historical and contemporary China suggests a need to consider the descent group itself as an analytic unit. Cultural and other capital transmitted within descent groups may have raised the chances of attaining rare elite positions for all members without generating high correlations in the attainment of such positions in the pairs of closely related kin considered in Campbell and Lee (2003, 2006). In China and other non-Western societies, various tangible and intangible resources circulated among kin who lived in different households (Bian 1997, Das Gupta 1997, 1998; Davis 1955; Skinner 1997, Wolf 2005). Many Chinese kin groups followed formal rules to define the jurisdiction of kin authority by residence, family relationships, and gender (Ebrey 1984, 1991; Liu 1959). Especially in south China, lineage organizations often engaged in collective activities (Freedman 1958, 1966; Szonyi 2002; Zheng 2001). Lineages were also important units of organization in north China, even if they were not organized as formally as in south China (Cohen 1990).

Data

Our data combine eighteenth- and nineteenth-century population registers from Liaoning province in northeast China with twentieth-century retrospective surveys of the descendants of register families in selected villages. From these linked data, we generate an extract in which each record describes an adult male who was a member of one of the surveyed descent groups. Information on the male descent group members who lived during the eighteenth and nineteenth century are drawn from the historical household registers, while information on those who lived during the twentieth century is drawn from the retrospective surveys. Each record includes outcome measures such as attainment of official position and education, basic control variables, and constructed explanatory variables that measure the characteristics of the individual's father and the aggregate characteristics of their descent group and descent group branch. In the remainder of this section, we describe the household registers and retrospective surveys, and then describe the extract file that we constructed for the analysis in this paper.

Household registers

The household registers cover the descendants of Han Chinese settlers who migrated from Shandong and elsewhere in the seventeenth and eighteenth century and became hereditary tenants on frontier land owned by the state and administered through the Eight Banners, a civil and military administration under the Qing (Ding, Guo, Lee and Campbell 2003). Originally the Eight Banners were the army, primarily Manchu, which conquered China to form the Qing dynasty and then formed garrisons through the country. Eventually the Eight Banners acquired bureaucratic and administrative roles as well, including the management of state land. The map in Figure 1 summarizes the geographic distribution of the more than 500 villages covered by the Eight Banner registers. They are scattered across a swath of Liaoning province that includes the coastal area around Gaizhou that was the hinterland of Yingkou, the agricultural plain that surrounded Haicheng, Shenyang and intervening cities, and the remote and hilly area around Kaiyuan and Tieling in the northeast of the province. We have already described the origins of the registers as well as our procedures for data entry, cleaning and linkage in Lee and Campbell (1997, 223-237). Thus, here we focus on specific features relevant to the analysis.

Figure 1 here

At present we have transcribed twenty-eight distinct series of triennial registers. Each series covers a distinct state farm population affiliated with the Eight Banner system, which in turn could consist of anywhere from a handful of villages to several dozen villages. Table 1 lists the state farm populations and identifies the total number of available observations as of January 2006. It also identifies for each of the state farm populations any additional sources such as retrospective surveys, genealogies, or ancestral tablets that we have collected through fieldwork. Figure 2 summarizes the temporal distribution of the observations. The increases in the numbers of available

observations in the second half of the eighteenth century mostly reflect the fact that surviving registers only became available in larger numbers at the end of the eighteenth century, and that few registers from the middle of the seventeenth century survive. The spectacular growth in numbers of observations in the late nineteenth century reflects a combination of rapid natural increase in the population and the inclusion of new individuals or families in the register population.

Table 1 and Figure 2 here

The Liaoning household registers provide far more comprehensive and accurate demographic and sociological data than the household registers and lineage genealogies available elsewhere in China (Harrell 1987, Jiang 1993, Skinner 1987, Telford 1990). This is because the Northeast, which was the Qing homeland, was under special state jurisdiction, distinct from the provincial administration elsewhere. Regimentation of the population actually began as early as 1625, when the Manchus made Shenyang their capital and incorporated the surrounding communities into the Eight Banners (Ding 1992, Elliott 2001). By 1752, with the establishment of the General Office of the Three Banner Commandry, the population was also registered in remarkable precision and detail, and migration was strictly controlled, not just between Northeast China and China Proper, but between communities within Northeast China as well. Government control over the population was tighter than in almost any other part of China (Tong and Guan 1994, 1999). Movement within the region was annotated in the registers, and individuals who departed the area without permission were actually identified in the registers as 'escapees' (*taoding*).

The Qing state implemented a system of internal cross-checks to ensure the consistency and accuracy of the registers. First, they assigned every person in the banner population to a residential household (*linghu*) and registered him or her on a household certificate (*menpai*). Then they organized households into household groups (*zu*), and compiled annually updated genealogies (*zupu*). Finally, every three years they compared these genealogies and household certificates with the previous household register to compile a new register. They deleted and added people who had exited or entered in the previous three years and updated the ages, relationships, and official positions of those people who remained as well as any changes in their given names. Each register, in other words, completely superseded its predecessor.

The result was a source that closely resembled a triennial census in terms of format and organization. Entries in each register were grouped first by village, then by household group (*zu*) and then by household. Individuals in a household were listed one to a column in order of their relationship to the head, with his children and grandchildren listed first, followed by siblings and their descendants, and uncles, aunts, and cousins. Wives are always listed immediately after their husbands, unless a widowed mother-in-law supersedes them. For each person in a household, the registers recorded relationship to household head; name(s) and name changes; adult occupation, if any; age; animal birth year; lunar birth month, birth day, and birth hour; marriage, death, or emigration, if any during the intercensal period; physical disabilities, if any and if the person is an adult

male; name of their household group head; banner affiliation; and village of residence.

The registers also record official positions held by adult males. There were altogether five types of position: banner, civil service, examination, honorary and household group leader. In our analysis we consider only the first four because the holders constituted the local elite. The first three categories were formal governmental offices and included a generous salary and other perquisites. While they predominantly comprise lower-level occupations such as soldier, scribe, or artisan, they do include some high administrative offices that entailed not only a salary, but power as well. For most of these offices, we have been able to identify salaries by consulting relevant archival sources. The fourth category, honorary, was typically purchased, and indicates substantial personal resources or access to such resources through the family.

In contrast with most historical censuses, the triennial registers allow for linkage of the records of an individual in successive registers. Households and their members appeared in almost the same order in each register, even if they moved to another village. Thus, linkage from one register to the next is straightforward. From the linked records for each individual, we reconstruct life histories. By comparing observations for the same individual in successive registers, we can construct outcome measures indicating whether particular events or transitions took place in the time between two successive registers. Thus, for the event-history analysis that we describe later, we construct indicators of whether men without an official position attain one by the next register, whether men who have not yet married do so by the next register, and how many sons a married man fathered by the next register.

The extensive detail on household relationship, meanwhile, allows for reconstruction of pedigrees and identification of kin living in the same or different households. We first parse the household relationships recorded in the registers to link sons to their fathers. Relationships were recorded in great precision in the original registers. Thus, the software we have developed can carry out this linkage automatically. Once we have established links between fathers and sons, we combine them to identify grandfathers, great-grandfathers, and more distant male ancestors. This process is also automated. Many of the men who appear in the later registers, for example, can have their ancestry traced back six or seven generations. Figure 3 summarizes time trends in the proportions of men for whom we identify fathers, grandfathers, and great-grandfathers. Once we constructed pedigrees, additional data processing identified brothers, cousins, first cousins, second cousins, and other kin and measure their characteristics, regardless of whether they were in the same household or not.

Figure 3 here

Based on this intergenerational linkage and additional processing, we divide the 251,940 individuals recorded in the household register into 1,051 descent groups. We define descent groups to comprise individuals with the surname whose households and household groups were listed adjacent to each other in the earliest available register in a series. Households or household groups that were adjacent to each other in the earliest

available register were generally related to each other by common descent from a male ancestor who preceded the registers. Evidence for this comes not only from the registers, where for example adjacent households and household groups with the surname typically shared generation characters in their given names, but also from our fieldwork. Inspection of family genealogies revealed that almost invariably, households and household groups with the same surname that were adjacent in the household registers were all related. Thus far, we have been able to associate each descent group that we have surveyed with a specific descent group identified in the registers via our linkage.

For the purposes of analysis, we divide the descent groups in the registers into subunits that we refer to as descent group branches. These are defined as groups of individuals in the registers who share common descent from a male recorded in the earliest available register. There were a total of 24,411 such descent group branches. Because extinction was common, many of these branches were small, consisting only of a founder in the earliest available register who had no surviving descendants at all, or a founder and a few generations of descendants. Thus the top 10 percent of the descent group branches in terms of size accounted for 62.7 percent of the register population. The top 25 percent accounted for 83.6 percent of the population, and the top one-third accounted for 88.8 percent of the population.

The household registers have some limitations relevant to the analysis. First, they do not record any employment other than official position. If family members had occupations other than as employees of the state, there was no record. Since the populations were largely rural and agricultural during the period covered by the household register data, it is unclear how serious a limitation this was. At least until the beginning of the twentieth century, employment with the state was likely to be the primary or even sole opportunity for a non-agricultural income in the rural villages covered by the registers. Second, the data do not record data on wealth. It is accordingly impossible to consider effects of family holdings of land or other assets.[1]

Retrospective Surveys

For the past several years, we have carried out retrospective surveys of the contemporary descendants of the household register populations in selected villages in rural Liaoning as part of our fieldwork. Our surveys not only gather information on the respondents and their co-residing kin, but via proxy reports, more distant relatives who live elsewhere in the village, or have left the village. Linkage of respondents and their relatives to the household registers is based on the identity of an ancestor of the respondent, usually a grandfather or great-grandfather, who we can locate in the household registers from the beginning of the twentieth century. In our fieldwork, we also gather additional data on the families covered by the household registers, such as

[1] We are initiating a parallel project for a region in Heilongjiang province for which both household registers and landholding data are available during the late nineteenth century, and results from that analysis should eventually help assess how serious a limitation this is.

genealogies and grave inscriptions, and we have begun to analyze these data elsewhere (Campbell and Lee 2006).

The retrospective surveys collected and linked thus far contain data on 10,329 people in 27 distinct descent groups and 64 descent group branches in twelve villages in three distinct areas of Liaoning. In figure 1, the first of these areas was the agricultural plain of Shenyang, where we collected data in five villages. Some of these villages have already become northern suburbs of Shenyang, and the economies of the rest are intertwined with Shenyang's. The second was in the hilly area to the east of Tieling, where we have collected data in four villages. These villages are located in remote valleys and remain primary agricultural. The third area was outside of Haicheng and Liaoyang, where we collected data in three villages.[2] These villages remain primarily agricultural.

In the surveys, we collect basic social and demographic data for individuals. Demographic data include years of vital events such as birth, marriage, and death. We also collect basic data on social attainment, including educational attainment, occupation, Party membership, and selected other characteristics. Since we rely on proxy reports for information about most of the individuals in the dataset, information about many individuals is incomplete. Thus, for example, we are missing years of birth for one-quarter of individuals. For obvious reasons, the individuals for whom data are most likely to be incomplete are ones who are distant relatives of the respondent who have been away from the village for some time. In such cases, we may only have a name and a relationship.

Educational attainment was reported as highest level attained, for example, lower elementary, elementary, middle school, high school, technical college, or university. Some individuals born before 1949 were identified as illiterate or as having had a form of traditional education known as *sishu*. For the purposes of analysis, we have converted these to corresponding numbers of years of education. Translating completed levels into corresponding years was usually straightforward. In some cases where individuals had some sort of vocational training after middle or high school, we estimated equivalent numbers of years after consulting relevant literature or individuals with relevant expertise.

Responses for occupation were open-ended. For the purposes of analysis, we translated responses into sets of constructed dichotomous indicator variables identifying groups of occupations with particular characteristics. For the purpose of comparability to the occupational data from the historical household registers, in this analysis we make use of a created dichotomous variable that identifies individuals who held local leadership positions such as village head, Party secretary, and accountant, as well as higher positions in the Party and government hierarchy. Additional variables that we created identify a

[2] Though we have visited some of the villages around Gaizhou in the south and collected historical materials such as genealogies and grave inscriptions, we have yet to carry out retrospective surveys there. Similarly, we have visited several other villages around Shenyang and Tieling to gather historical materials, but not yet carried out retrospective surveys there.

variety of other categories of occupation, including health, law enforcement, and education, and in future analyses we will make use of these as well.

Extract for Analysis

The data that we analyze combine extracts from the historical household registers and the contemporary retrospective surveys. Table 2 summarizes the observations available for the analysis after applying appropriate restrictions. The data drawn from the contemporary surveys consists of males born between 1930 and 1980. These are males who reached adulthood after the formation of the People's Republic of China in 1949 but before we began to carry out retrospective surveys in 2001. To be included, the observation for a male also had to include detail on their educational attainment and their occupation. Since we examine intergenerational mobility, we further restrict to males for whom there are information on fathers, including occupation and educational attainment.

Table 2 here

The organization of the extract is straightforward. Each observation describes one adult male. A dichotomous indicator variable indicates whether they lived during the contemporary or historical period. According to table 2, roughly three-quarters of the men were from the historical household registers, and one-quarter were from the contemporary surveys. The registers account for a high proportion of males used in the analysis because they cover a longer period of time, more than 150 years. They also include branches of the descent groups that became extinct.

We constructed a dichotomous indicator variable to indicate whether men held an official position. Men from the historical period were defined to hold an official position if they held any official title, whether because they had a salaried position, or an honorary or purchased title. Approximately three percent of men in the household registers held official positions as defined here. Men from the contemporary period were defined to hold an official title if they served as village head, Party secretary, or accountant, or held a higher administrative or political office. Slightly more than four percent of adult males in the contemporary retrospective surveys held such positions.

Because official positions in the historical household registers are not directly comparable to official positions after 1949, we should treat attainment of official position as an identifier of members of the local social and political elite, not a marker for possession of specific skills and training. The structure and organization of government changed completely from the end of the Qing in 1909 and the founding of the People's Republic in 1949. Among other things, the selection criteria for official positions differed fundamentally. The official positions in the registers were ostensibly awarded according to merit in a highly bureaucratic process. Many if not most of the salaried positions had formal criteria. After 1949, some form of merit may have played a role in appointment to official positions, but other criteria such as political reliability and family class background mattered as well.

We also constructed a dichotomous indicator variable to identify men with high educational attainment. For men covered in the historical household registers, we used possession of an exam title to identify highly-educated males. Exam titles identified men who had taken one of the official exams. 0.4 percent of adult males held such titles. For men in the retrospective surveys, we defined high educational attainment to include anyone who had more than twelve years of completed education. 4.9 percent of adult males met the criteria. For the men from the retrospective surveys, we also included a variable identifying number of years of completed education. As was the case with official position, attainment of an exam title before the twentieth century is not directly comparable to attainment of more than twelve years of education after 1949. Accordingly, we treat our as a general indicator of membership in the upper tail of the distribution of education attainment, not as an indicator of possession of skills and abilities that are the same from the eighteenth century to the present.

The surveyed descent groups differed in predictable ways from others recorded in the historical household registers, largely because they were fortunate enough to survive to the present in large enough numbers to be located and interviewed. Table 3 compares the demographic and social outcomes of the surveyed descent groups during the eighteenth and nineteenth centuries to those of other descent groups recorded in the household registers, controlling for time period and area of residence. The ancestors of the surveyed descent groups married in higher proportions than others recorded in the registers, had more sons, were more likely to give their sons high status names, and were more likely to hold official positions and exam titles. Thus, the odds that a male in a surveyed descent group would be married by their early forties were 1.17 times those of other men recorded in the registers. Men in surveyed descent groups had on average 0.20 more boys by the time they reached their early forties. They were 1.45 times more likely to hold an official position, and more than twice as likely to hold an exam title.

Table 3 here

For the assessment of the continuity in the relative statuses of descent group branches from the eighteenth century to the present, we also construct a variety of aggregate measures of the characteristics of descent group branches. We describe them later in the discussion of methods. We restrict our analysis of temporal correlations in the aggregate attainment of descent group branches to the 34 of 64 that had at least 5 adult males recorded in the contemporary surveys. These 34 accounted for 91.9 of the contemporary survey population that could be associated with descent group branches.[3] As was the case in the historical registers, the numbers of males in contemporary descent

[3] At present we have only linked half of the males in the retrospective survey data to specific descent group branches in the historical registers, though we have linked all of them to specific descent groups. The men we have associated with descent group branches lived in households in which at least one member could be linked directly to an individual in the historical registers, and from whom a descent group branch could be identified. We are in the midst of additional machine linkage of family members who lived in different households in the contemporary survey data. Once that is complete, we will be able to associate each of the individuals in the contemporary data with a descent group branch, and recalculate the temporal correlations in aggregate attainment using a larger number of observations.

groups varied. The top ten in terms of size accounted for half the surveyed population. The top twenty accounted for three-quarters of the surveyed population.

Methods

To assess change and continuity in stratification patterns over the very long term, we carry out three distinct sets of calculations. The first set consists of simple measurement of intergenerational associations in attainment. We first estimate logistic regressions in which the dependent variable is a dichotomous indicator of whether an adult male attains an official position. Explanatory variables of substantive interest include an indicator of whether their father held an official position, whether the individual was born between 1950 and 1980, and an interaction between father holding an official position and birth between 1950 and 1980. We estimated one regression with controls for area of residence, and another regression with controls for village of residence.

The odds ratio estimated for the interaction between father holding a position and birth between 1930 and 1980 will reveal whether or not intergenerational correlations in attainment of official position changed after 1949. To the extent that society became more fluid, and the importance of father's attainment declined as a result of policies introduced in 1949, we would expect the odds ratio associated with the interaction term to be less than 1. Thus, for example, if the association between father's and son's chances of attaining official position were halved after 1949 as a result of new policies, the odds ratio should be 0.5. If there was no change after 1949, then the odds ratio should be close to one. In the unlikely scenario that society became less fluid after 1949, and the association in father's and son's attainment chances increased, then the estimated odds ratio should be greater than one.

We repeat this procedure for educational attainment. We estimate a pair of logistic regressions in which the dependent variable indicates attainment of high education, as defined earlier. One regression includes controls for area, and the other includes controls for village. Variables of substantive interest identify whether the individual's father was highly educated, whether the individual was born between 1950 and 1980, and the interaction between the two. We restrict individuals from the surveys to those born between 1950 and 1980 to ensure that they began and ended their education after 1949. Again, the key results will be those for the interaction between father's education and birth between 1950 and 1980. A value less than one will indicate increased fluidity, a value close to one will indicate no change in fluidity, and a value greater than one will indicate reduced fluidity.

The second set of calculations compares the importance of village and descent group as units of social and economic organization before the twentieth century. We estimate random intercept models that decompose variation in social and demographic outcomes into the components attributable to variation between villages, descent groups, and descent group branches. To reduce the time needed for estimation, rather than estimate logistic regressions directly on the original observations of individuals at

specific points in time, we estimate them on collapsed observations that summarize the experience of groups of siblings. The binomial outcome variable measures the number of siblings with a specified characteristic or who experience a specified event, and a denominator includes a count of the number of siblings. Formally speaking, in the multi-level analysis the first level consists of sets of siblings, the second level consists of descent group branches, and third level consists of descent groups, and the third level consists of villages. We compare the estimated variances of the random intercepts for village, descent group, and descent group branch to assess the relative importance of variation between villages and between descent groups in shaping demographic and social outcomes.[4]

The third set of calculations assesses the influence on the attainment chances of individuals in the twentieth century of the aggregate attainment of their descent group branch before the twentieth century. It consists of two regressions. The first is a logistic regression in which the dependent variable indicates whether a male born between 1930 and 1980 attains official position. The explanatory variable of primary interest is an indicator of whether or not anyone in their descent group branch attained an official position in the eighteenth or nineteenth centuries. An estimated odds ratio above one would indicate that men in the twentieth century were more likely to attain an official position if at least one member of their descent group branch held a position before the twentieth century. An odds ratio close to one would indicate no association, and an odds ratio below one would indicate an inverse association. To the extent that efforts at social leveling after 1949 succeeded in erasing the advantage of previously privileged families, we expect the odds ratio to be zero. To the extent that efforts to invert the social order succeeded in turning high status before 1949 into a disadvantage, we might even expect an odds ratio below one.

The second regression consists of a linear regression of number of years of education attained for men born between 1950 and 1980 on an indicator of whether anyone in their descent group branch held an exam title in the eighteenth and nineteenth century. If men were advantaged during the twentieth century by membership in a descent group branch in which at least one member had held an exam title before the twentieth century, the coefficient for the indicator should be positive. If the twentieth-century educational attainment of men in such descent group branches was unremarkable, the coefficient should be around zero. To the extent that active discrimination against the members of previously high status families succeeded led to a disadvantage in educational attainment during the twentieth century, the coefficient should be negative.

The remaining calculations examine change and continuity in the rural social order from the eighteenth century to the present by looking at correlations in rankings of descent group branches according to aggregate measures of their attainment. We use descent group branches as the unit of analysis instead of descent groups because our fieldwork experiences suggests that they are more likely to correspond to a socially

[4] We use the `gllamm` (Rabe-Hasketh et al. 2004) procedure in STATA for our estimations, specifying a binomial family with a logit link. `Gllamm` constrains the variance of the random intercepts at the first level to be equal to one.

meaningful unit of contemporary kinship organization. In our fieldwork, we observed that descent groups within a village were typically divided into distinct branches based on descent from a more recent ancestor than the original descent group founder, and that the characteristics of these branches could vary widely. Descent group branches tended to correspond more closely to the networks of kin that held meaning for individuals.[5]

For the 36 descent group branches that had sufficient numbers of adult males recorded in the twentieth century data, we calculated several aggregate measures of attainment. For branch members before the twentieth century, we calculated the proportions who attained official position, average income from official positions, the proportion of boys who were given high status names, the proportion of boys who were given low status names, and the proportion who held an exam title. We include the naming variables because our recent analyses have suggested that family naming practices were correlated with their socioeconomic standing, so that better-off families were more likely to give their boys high-status names and less likely to give them low-status names. For branch members during the twentieth century, we calculate proportions of males born between 1930 and 1980 who attained official position, proportions of males born between 1950 and 1980 who attained high education, the average number of years of education for these males, and the proportion of males born between 1930 and 1980 who attained locally prestigious non-official positions such as educator, doctor or nurse, manager, or soldier that implied a non-agricultural income but were not administrative positions.

We then computed three sets of rankings for each of the descent group branch based on these measures. The first set of rankings was for descent group branches overall, regardless of location. For example, for the historical attainment of official position, the descent group branch with the highest proportion of males who held position was ranked first, and the remaining branches ranked in order of proportions of males with position. Similar rankings were computed for the other measures described above. To assess long-term continuity in the ordering of descent group branches according to these attainment measures, we then estimated correlations in the historical and contemporary rankings. To the extent that there was long-term continuity in the ordering of descent group branches according to their attainment, correlations between historical and contemporary rankings should have been high. To the extent that leveling efforts after 1949 were successful, correlations across time should have been weak. If efforts to invert the social order succeeded, the correlations should have been negative.

To account for differences in the availability of opportunities for education and official position during the twentieth century, we also estimate rankings within areas and within villages and correlate those as well. If areas or villages experienced very different rates of development during the twentieth century and thus had very different opportunities for attainment of official position or education, it might reduce correlations in the overall rankings of descent group branches even if their positions within the area or village were unchanged. Conversely, if the areas or villages that were most advantaged before the twentieth century developed the most quickly during the twentieth century,

[5] In future work, we will 'drill down' even further to consider even narrower groupings of kin.

and saw the greatest expansion in opportunity, it might increase correlations in the overall rankings of descent group branches even if their positions within the village or area changed dramatically.

Results

Father-Son Associations

There was long-term stability in intergenerational associations in the attainment of official position. Table 4 presents results from the logistic regressions of attainment of official position on father's attainment. The results for the model that included fixed effects of area reveal that before the twentieth century, attainment of official position by father multiplied an individual's own odds of attainment by 7.89. The association in the last half of the twentieth century was almost the same: the odds ratio associated with the interaction between father's official position and birth between 1930 and 1980 was 0.89. According to the results of the statistical test, the interaction was not statistically significant.

Table 4 here

The conclusion from the model that included a fixed effect of village was the same. Once village was controlled for, the influence of father's attainment weakened slightly, indicating that at least part of the association between father and son was attributable to a tendency for residents of some villages to be especially successful at attaining position. The association remained strong, with father's attainment of official position multiplying the odds of attainment by 5.84. Again, the effect of father's attainment did not change in the last half of the twentieth century. The odds ratio for the interaction term was close to one, and the difference from one was not statistically significant.

Changes in intergenerational associations in educational attainment were more ambiguous. According to table 5, having a father who held an exam title multiplied the odds of obtaining one by 12.04 when area was controlled for, and 12.00 when village was controlled for. According to the odds ratio for the interaction between father's attainment of high education and birth between 1950 and 1980, father being highly educated had a much weaker effect on the chances of being highly educated: an odds ratio of 12.04*0.56=6.74 in the model with fixed effects for area, and 12.00*0.59=7.08. The change from before the twentieth century was not statistically significant. Given the massive expansion of the educational system in the middle of the twentieth century, and the higher proportions of men overall attaining high levels of education, a weakening in father-son associations would be expected, but a definitive assessment will have to await collection and analysis of more data.

Table 5 here

Descent Groups and Inequality Before the Twentieth Century

Descent group membership was more important than village of residence for social and economic outcomes in rural Liaoning before the twentieth century. According to the estimates in table 6, differences between descent groups in the same village were more pronounced than differences between villages for attainment of official position by age 31-40 sui, marriage, and use of a diminutive or non-Han name in childhood and adulthood. The role of the descent group in the attainment of official position was especially striking: the standard deviation of the random intercepts estimated for descent groups was 1.1 (=1.211^0.5), implying that an individual in a descent group one standard deviation above the mean in terms of its success at attaining position had three ($=e^{1.1}$) times the odds of attaining a position of a member of a descent group that was at the mean in terms of its attainment of position. By contrast, a resident of a village that was one standard deviation above the mean in terms of attainment of position saw their odds of attainment multiplied by only 2.23 ($=e^{0.642\text{^}0.5}$).

Table 6 here

For male marriage prospects, descent group membership was more important than village of residence. Figure 4 presents predicted proportions marrying by different ages for men according to whether their village or descent group was at the mean or one standard deviation above or below in terms of the logged odds of marriage. According to figure 4 and the relevant results in table 6, there was little systematic difference between villages in the chances that men would marry before age 31 *sui*. Within villages, however, descent groups varied in terms of the proportions of men who married early. For example, whereas in a descent group at the mean 7.3 percent of men would marry by ages 11-20, in a descent group one standard deviation above the mean 9.0 percent of men would marry. At later ages, village of residence became more important as a determinant of marriage chances, but differences between descent groups within the same village were more pronounced than differences between villages. For example, in a descent group at the mean, 86.5 percent of men would marry by age 41-50 *sui*. In another descent group one standard deviation above the mean, 89.9 percent of men would marry. By contrast, in a village that was one standard deviation above the mean, 88.3 percent of men would marry.

Figure 4 here

For mortality, village of residence was more important than descent group membership. According to table 6, mortality variation between villages was more pronounced than variation between descent groups in the same village. This is in line with expectations. Residents of the same village experienced a common disease environment that was conditioned by the geographic and ecological setting of the village: its proximity to major towns or location on a major road, its water supply, and so forth. We speculate based on observations during our fieldwork that differences between descent groups in the same village were attributable to the tendency for villages to be residentially segregated by descent group, in the sense that households that were part of the same descent group tended to cluster together in specific neighborhoods within the

village. Within a village, in other words, the members of a descent group may have shared a common disease environment defined by the ecological characteristics of the area of the village in which they concentrated.

For marital fertility, meanwhile, neither village nor descent group was an important source of variation. While the variances were statistically significant, their magnitudes were so small as to be substantively insignificant. This is not to say that fertility was uniform across couples, only that village of residence and descent group membership were not sources of variation in fertility between couples. Fertility in fact varied between couples in the same household (Lee and Campbell 1997) and it is likely that such variation, driven by differences in economic circumstance and social context according to their location within the household hierarchy, were much more important than systematic differences between larger social units.

For socioeconomic outcomes, kinship was more important than village, and more closely related kin were more important than more distantly related ones. Table7 presents results from estimates of four-level models that allow for random effects of village, descent group, and descent group branch. According to table 7, variation in socioeconomic outcomes between descent group branches was more important than variation between descent groups. For attainment, marriage, and adult naming, differences between branches of the same group were more pronounced than differences between descent groups in the same village. More importantly, descent group and descent group branch together accounted for a much larger share of variation between individuals than village of residence. Kinship, in other words, was much more important for the outcomes considered in table 7 than community of residence.[6] Thus while father-son associations in attainment estimated for Liaoning were weaker than in the historical West and were suggestive of a relatively fluid society (Lee and Campbell 1997; Campbell and Lee 2003), networks of kin in the form of descent groups and descent group branches played a key role in stratification and inequality. Hymes' (1986) insight that measures of social fluidity such as father-son associations that were developed in the analysis of Western contexts may overestimate openness by neglecting the role played by kin groups in China appears to be borne out.

Table 7 here

Conversely, for mortality, community was more important than kinship. According to table 7, village was more important than descent group, and descent group was more important than descent group branch. Descent groups within the same village differed in terms of their mortality, but differences between descent groups were less pronounced than differences between villages. With a descent group, differences branches were negligible. We view this as confirmation of our speculation that common neighborhood environment drove differences between the residentially segregated descent groups in a village. Since descent group branches tended to live together in the

[6] Estimating four-level random-effects models with binomial responses is much slower than estimating three-level models in table 6, thus computations for the remaining outcomes are still ongoing. We will include the results in a revised version of the paper.

same area or areas within a village, they experienced a common disease environment, and differed little in terms of their mortality risks.

Taken together, these results indicate that in rural Liaoning before the twentieth century, kinship was more important than village in accounting for inequality in socioeconomic outcomes. Descent group affiliation was more important than village of residence for male chances of marriage and attainment. Descent group affiliation was also more important than village for expression of identity via choice of name. There was further differentiation within descent groups, so that branches of the same group differed more than descent groups in the same village. Even though descent groups in northeast China took on fewer collective activities than their well-studied counterparts in south and southeast China (Szonyi 2002; Freedman 1958, 1966), the results here confirm that like the north China descent groups described by Cohen (1990) they were important units of social and economic organization.

Long-term Continuity in the Role of Kin Groups

Having confirmed the importance of kinship to patterns of socioeconomic inequality in rural Liaoning before the twentieth century, we now investigate the implications for contemporary social organization. Specifically, to address the possibility that there was long-term continuity in the relative standing of kin groups in the face of relatively weak father-son associations in attainment and monumental efforts at socioeconomic leveling after 1949, we turn our attention to continuity from the nineteenth century to the present in the attainment of descent group branches. According to the results in table 8, there was such continuity. The descent group branches that were most successful before the twentieth century tended to be the ones that were more successful after 1949. Specifically, membership in a descent group branch in which someone attained position before the twentieth century raised the chances of attaining official position during the twentieth century. Controlling for village of residence, men born between 1930 and 1980 who were members of descent group branches in which at least one member had attained official position before the twentieth century were more than twice as likely to attain official position themselves. Such continuity may imply that certain descent groups had intangible social or cultural capital that advantaged them in the competition for political advantage and was transmitted from one generation to the next and persisted in the face of efforts at economic leveling.

Table 8 here

Long-term continuity in the educational attainment of descent group branches is less apparent. According to table 8, the members of descent group branches in which at someone held an exam title before the twentieth century had higher educational attainment after 1949, but the effect was not statistically significant. Men born between 1950 and 1980 who were members of descent group branches in which at least one person held an exam title during the Qing on average had 0.40 more years of schooling than other men, controlling for village of residence.

Change and Continuity in the Rural Social Order

Continuity was apparent as well in the ordering of descent group branches according to levels of occupational and educational attainment. Table 9 presents overall correlations in the historical and contemporary attainment measures for descent group branches. As noted earlier, analysis was restricted to the 36 branches with enough recorded of contemporary males to compute meaningful averages for the measures of attainment. According to table 9, the descent group branches that had been successful at attaining exam titles before the twentieth century were also successful at attaining education and official position after 1949. As noted in our discussion of methods, such correlations may be affected by the pace of development of areas or villages during the twentieth century, and could be skewed in one direction or another depending on regional or local patterns of growth.

Table 9 here

Continuity was actually more apparent for rankings within areas in table 10 than for overall rankings in table 9. According to table 10, when descent group branches were ranked within areas, attainment of official position before the twentieth century was positively associated with attainment of official position after 1949. Attainment of exam titles before the twentieth century, meanwhile, continued to be a strong predictor of attainment of official position and education after 1949. The families that before the twentieth century had a habit of giving their boys high-status non-Han names, meanwhile, were more successful at attaining prestigious positions after 1949. The emergence of continuity in the attainment of official position in moving from the overall rankings in table 9 to the area-specific rankings in table 10 suggests that differences between areas in changes in attainment opportunities suppressed correlations.

Table 10 here

Continuity was also apparent in correlations in village-specific rankings of descent group branches in table 11. As was the case with the area-specific rankings in table 8, the descent group branches that were most successful at attaining official position and education before the twentieth century were also more successful at attaining official position and education after 1949. According to table 11, the descent group branches that were especially successful at obtaining exam titles before the twentieth century were also more successful at educating their members after 1949. Higher proportions of such branches had more than twelve years of education, and on average, the members of such branches had more years of education. Meanwhile, the descent group branches that were successful at attaining official position before the twentieth century were more successful at attaining official position after 1949, and on average appear to have been better educated after 1949. Once again, the branches that before the twentieth century gave their boys high status non-Han names were more successful at attaining prestigious positions after 1949.

Table 11 here

Conclusion

Taken together, the results here are suggestive of long-term stability in patterns of stratification in the rural villages for which we have data from the mid-eighteenth century to the present. According to the results for father-son associations, the influence of father's attainment of official position and high education on own chances of attainment was essentially unchanged between the Qing and the period after 1949. This was in spite of the fact that the processes that allocated official position differed fundamentally between the period before 1909 and the period 1949, and that the definitions of high education differed fundamentally between the two periods. The results for attainment of official position and the attainment of high education both suggest that father's membership of the upper tail of the distribution multiplied own chances of reaching that tail anywhere from five-fold to eight-fold.

Results for the attainment of descent group branches, meanwhile, suggest long-term continuity across the 1949 divide in the social order of the villages for which we have data. After 1949, men were more likely to attain official position if they were part of a descent group branches in which at least one member had held an official position before 1909. Similarly, after 1949, men had higher levels of education if they were part of a descent group branch in which at least one member had held an exam title before 1909. Examinations of correlations in the rank ordering of descent group branches in terms of their attainment of education and official position, meanwhile, revealed continuity between the Qing and the People's Republic. The descent group branches in which higher proportions of men had held official position or exam titles before 1909 tended to be descent group branches in which men were better educated and more likely to hold official position after 1949.

This is not to say, of course, that there was no change after 1949. The correlations in tables 9 through 11 are less than one. For attainment of official position, they are between 0.3 and 0.4, suggesting that there were shifts in the rank order of families, perhaps as a result of changes in the criteria for the attainment of official position. Correlations for educational outcomes were stronger, 0.5 to 0.6, but still indicative of some movement. That correlations for educational outcomes were stronger may suggest that the cultural capital that generates advantages in educational attainment is more easily transmitted across generations than the cultural, social and other capital capital that may generate advantages in the attainment of official occupation.

Nevertheless, that there was as much continuity as we have observed comes as something of a surprise. As noted in the introduction, the period after 1949 in China was one of the most ambitious efforts in human history at social and economic leveling. Policies were introduced that not only sought to flatten the social and economic hierarchy, but in some periods at least, invert it. Certain policies introduced after 1949 would if successful have led not to a classless society, but the formation of a caste system based on social class before 1949. Through introduction of hereditary class labels and policies of discrimination based on these labels, previously high status families and their

descendants were to be made into a new disadvantaged class. Of course, there was no evidence of inversion in the results in tables six through nine.

One possible explanation for such long-term continuity is that intangibles like cultural capital that are transmitted within families and which are nearly impossible to manipulate via policy may be a key source of advantage. Economic leveling through the redistribution of wealth or active discrimination in the assignment of occupations and official positions may have little effect on the transmission of attitudes and orientations within families. Families in which an emphasis on education, achievement, and socioeconomic advancement are successfully transmitted from one generation to the next may be especially likely to prosper in any political, social, or economic environment because they are more likely to understand the rules, adapt to them, and eventually take advantage of them.

Our work is just beginning. As noted in the introduction, we are still in the process of linking additional contemporary data, and we plan to collect data from additional villages. As our contemporary data expand, we hope to take advantage of it to compare the trajectories of descent groups after 1949, and assess whether the families that seized the opportunities offered by the market reforms that began in 1979 and rose to prominence in the last two decades are 1) ones that had been successful before 1909, and disadvantaged between 1949 and 1979 as the result of active discrimination against previously high status families, 2) families that had been undistinguished before 1949, but rose to political power by taking advantage of policies implemented between 1949 and 1979 and then parlayed that power into economic success after 1979, or 3) families that constituted ‘new blood’ in the sense that they were undistinguished before 1909 and between 1949 and 1979.

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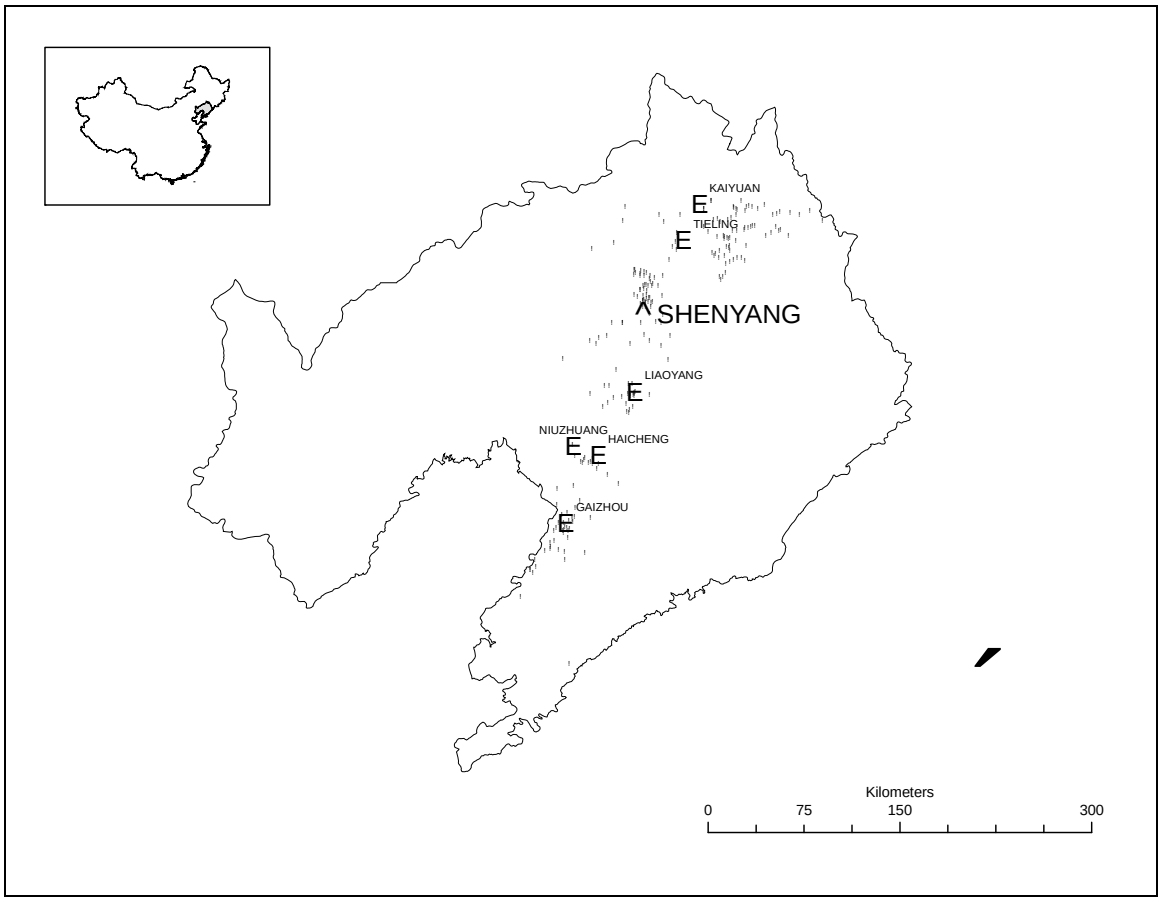

Figure 1 Villages Covered by Liaoning Household Registers, 1749-1909

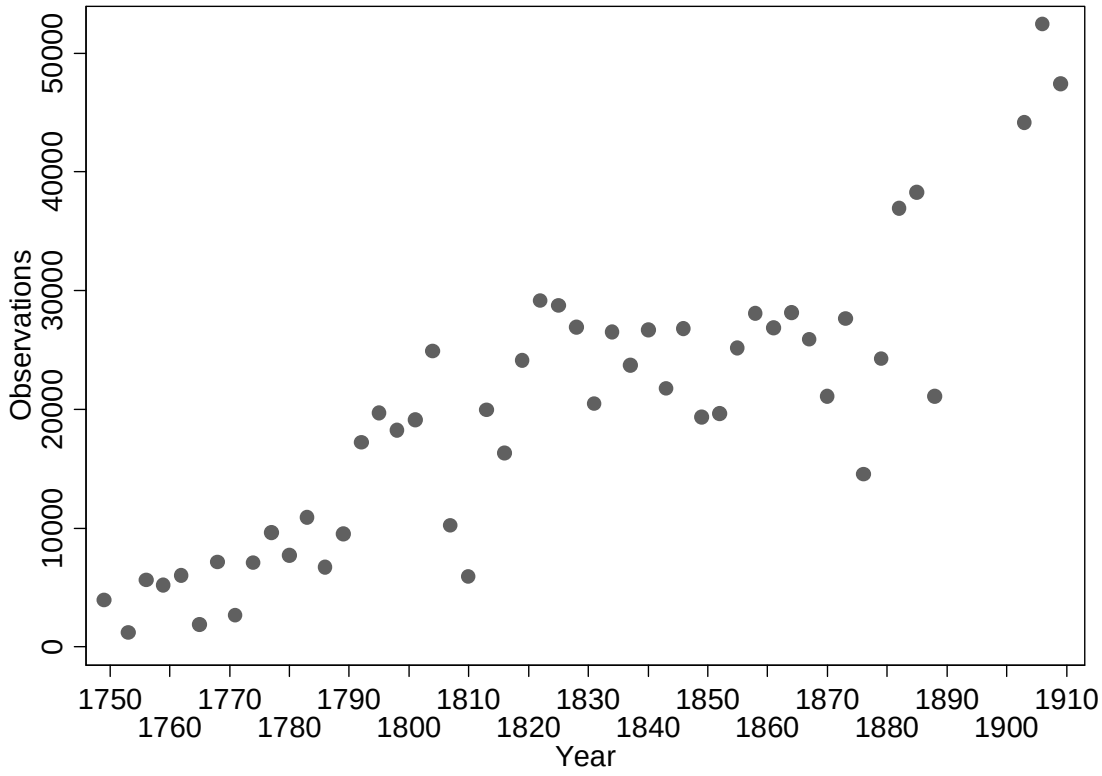

Figure 2 Observations by Year, 1749-1909

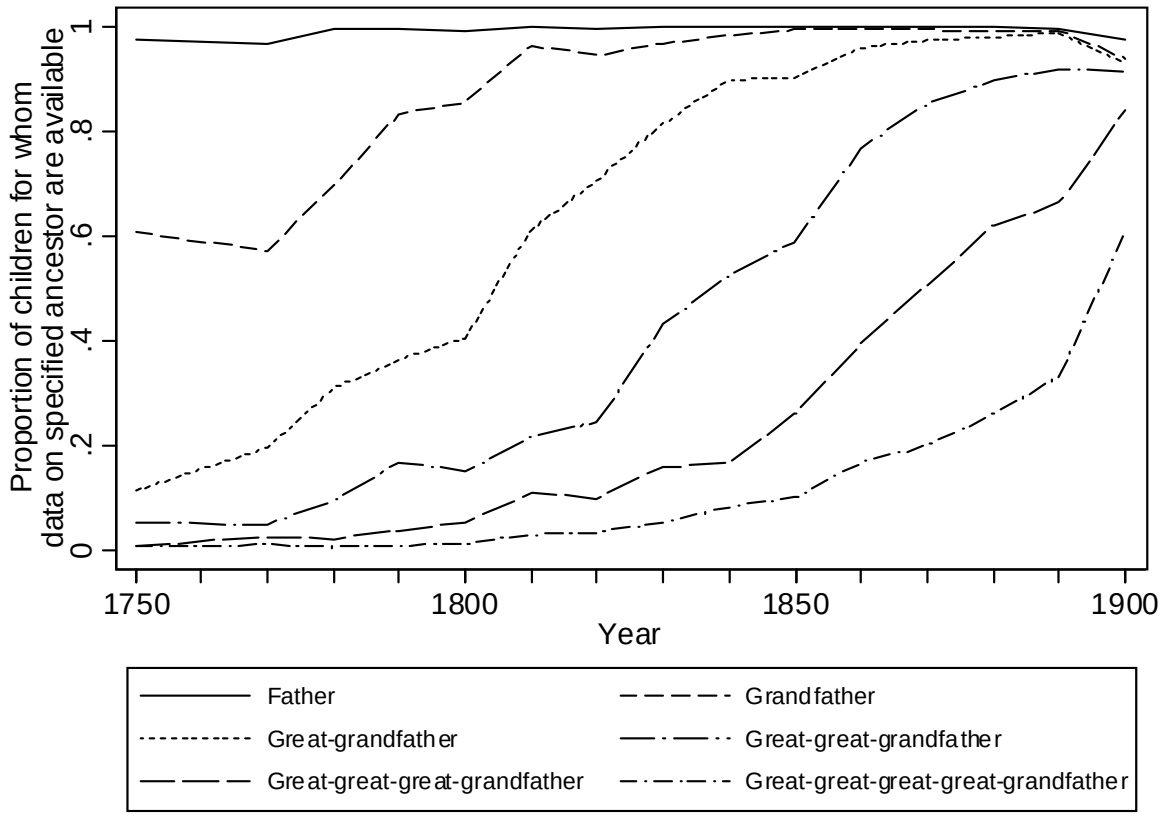

Figure 3 Children by the Number of Generations that their Ancestry Can be Traced in the Registers, 1749-1909

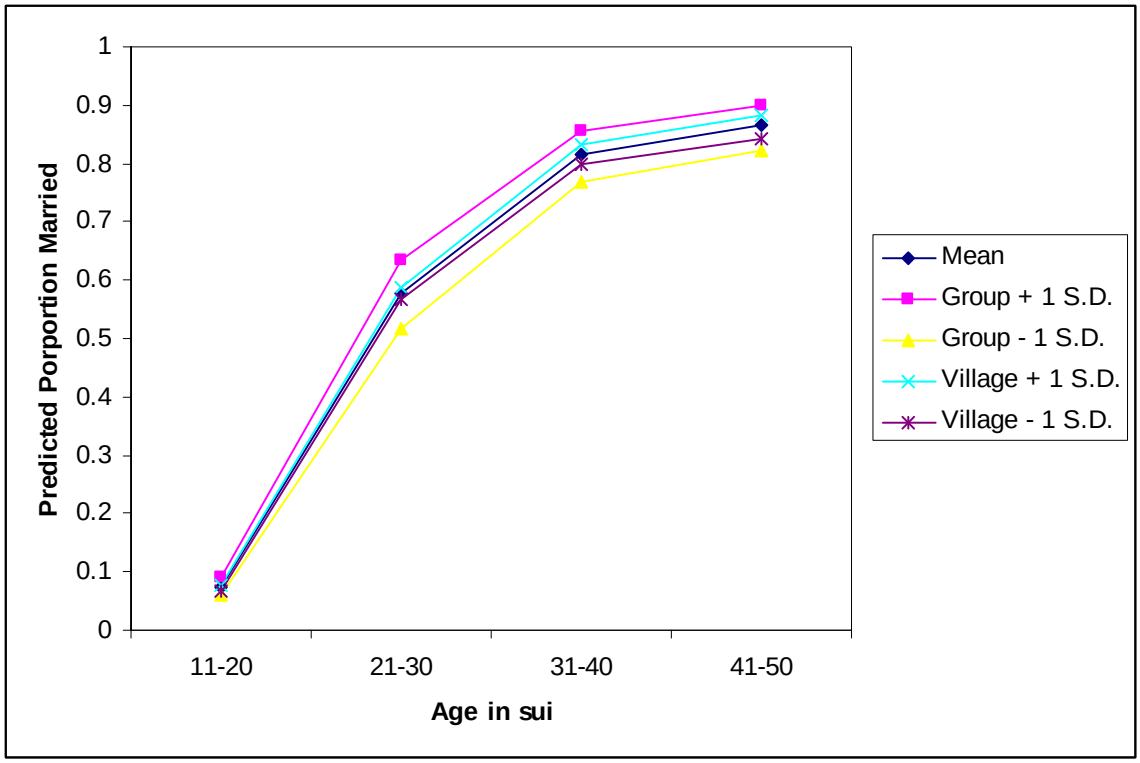

Figure 4 Predicted Proportions of Males Married by Village and Descent Group, 1749-1909

Location	Period	Registers	Observations	Genealogies	Inscriptions etc.	Survey
Aerjishan	1813-1909	18	13,622			
Bakeshu	1759-1909	32	48,709	7	5	5
Changzhaizi	1768-1909	25	46,810	10	14	4
Chengnei	1798-1909	24	55,671			
Dadianzi	1756-1909	27	76,984	2	1	
Dami	1759-1909	32	31,544	2		
Daoyitun	1774-1909	35	118,633	20	7	6
Daxintun	1749-1909	29	86,956	10		1
Diaopitun	1768-1909	26	70,153			
Feicheng	1756-1909	39	70,175	8	5	
Gaizhou Manhan	1753-1909	20	50,110			
Gaizhou Mianding	1789-1909	25	56,051			
Gaizhou	1762-1909	27	42,834	4		
Guosantun	1774-1909	34	35,073	4	2	1
Haizhou	1759-1909	26	119,207	14	5	2
Kaidang	1810-1852	7	4,476			
Kaidang Toucong Baoyang	1792-1888	12	13,310			
Langjiabao	1756-1909	25	47,340	1	3	2
Mianyanding	1768-1910	27	71,919			
Nianmadahaizhai	1749-1909	29	53,882	4	9	1
Niuzhuang Liuerbao	1780-1906	23	50,253	16	20	5
Subai	1864-1910	9	3,787			
Wangduoluoshu Rending	1792-1909	16	18,404			
Wangduoluoshu Shengding	1864-1910	8	9,043			
Wangzhihuitun	1765-1909	28	60,339		5	
Waziyu	1777-1906	21	55,522			
Wuhu	1789-1906	23	39,373			
Zhaohuatun	1774-1909	26	50,865	1	1	
			1,402,056			

Table 2. Numbers of Adult Males in the Linked Descent Groups

Area	Village	Contemporary Surveys	Historical Registers	Total
Liaoyang/Haicheng	1	47	118	165
	2	249	281	530
	3	257	1159	1416
Shenyang	4	208	1369	1577
	5	253	664	917
	6	117	541	658
	7	57	153	210
	8	165	140	305
Tieling/Kaiyuan	9	54	122	176
	10	171	549	720
	11	187	376	563
	12	205	1237	1442
	Total	1970	6709	8679

Table 3. Associations of Demographic and Social Outcomes with Membership in a Surveyed Descent Group, 1749-1909

	Odds ratio	P	N	Surveyed Descent Groups N
Diminutive names, boys -1-10 *sui*	0.76	0.00	87088	4700
Non-Han names, boys 1-10 *sui*	1.23	0.00	87088	4700
Ever married, men 21-25 *sui*	1.08	0.03	70589	3765
Ever married, men 41-45 *sui*	1.21	0.00	54753	2718
Official position, men 41-45 *sui*	1.53	0.00	54416	2718
Exam title, men 41-45 *sui*	1.97	0.00	52849	2718
	Coefficient	p		
Number of boys born, men 41-45 sui	0.21	0.00	54753	2718

Estimations for naming, marriage, and attainment were logistic regressions. Estimation for number of boys born was linear regression. In each case, controls for area of residence and time period were included. Results are not presented here to save space. Number of observations is lower for attainment than for marriage or boys born because two areas had no one who held an official position and were excluded.

Table 4. Effect of Father's Attainment of Official Position on Chances of Attaining Official Position, 1749-2004

With fixed effects of area	Mean	Odds ratio	p
Father held an official position	0.03	7.68	0.00
Born 1930-1980 (Reference: born before 1718-1880)	0.23	2.79	0.00
Father held an official position * Born 1930-1980	0.01	0.89	0.73
Observations	8627		
Log-likelihood	-914.24		
Degrees of freedom	5.00		
Pseudo r-squared	0.12		

With fixed effects of village	Mean	Odds ratio	p
Father held an official position	0.03	5.84	0.00
Born 1930-1980 (Reference: born before 1718-1880)	0.24	2.65	0.00
Father held an official position * Born 1930-1980	0.01	0.91	0.78
Observations	8462		
Log-likelihood	-887.13		
Degrees of freedom	13		
Pseudo r-squared	0.15		

For men born before 1880, official positions included any salaried, purchased or honorary title recorded in the household registers. For men born 1930-1980, official positions included village head, Party secretary, and accountant, as well as higher level positions. To save space, odds ratios for areas in the first model and villages in the second model are not presented. The number of observations differs because one village in which no one held an official position was excluded from the estimation that included fixed effects of village.

Table 5. Effect of Father's Educational Attainment on Chances of High Educational Attainment, 1749-2004

	Mean	Odds ratio	p
With fixed effect of area			
Father highly educated	0.01	12.04	0.00
Born 1950-1980 (Reference: born before 1718-1880)	0.15	13.69	0.00
Father highly educated * Born 1950-1980	0.01	0.56	0.56
Observations	7811		
Log-likelihood	-404.9		
Degrees of freedom	5		
Pseudo r-squared	0.15		
With fixed effect of village			
Father highly educated	0.01	12.00	0.00
Born 1950-1980 (Reference: born before 1718-1880)	0.15	14.95	0.00
Father highly educated * Born 1950-1980	0.01	0.59	0.60
Observations	7863.11		
Log-likelihood	-387.79		
Degrees of freedom	14.00		
Pseudo r-squared	0.19		

For men born before 1880, highly educated was defined to include men who held an exam title. For men born 1950-1980, highly educated was defined to include men who had education beyond high school. To save space, odds ratios for areas in the first model and villages in the second model are not presented.

Table 6. Contributions of Village and Descent Group to Demographic and Social Outcomes, 1749-1909

Outcome	Village			Descent Group			Sibling set
	Intercept Variance	S.E.	Units	Intercept Variance	S.E.	Units	Units
Males							
Attainment at 31-40 *sui*	0.642	0.097	553	1.211	0.133	1968	33005
Diminutive Name							
1-10 *sui*	0.108	0.014	538	0.182	0.019	1898	44060
31-40 *sui*	0.161	0.041	553	0.482	0.043	1968	33005
Non-Han name							
1-10 *sui*	0.074	0.018	538	0.094	0.024	1898	44060
31-40 *sui*	0.198	0.037	553	0.431	0.065	1968	33005
Married by							
11-20 sui	0.075	0.023	550	0.231	0.030	1956	41021
21-30 sui	0.040	0.008	549	0.244	0.021	1988	37243
31-40 sui	0.118	0.025	553	0.284	0.029	1968	33005
41-50 sui	0.166	0.040	557	0.331	0.040	1969	28487
Marital Fertility 11-50 *sui*	0.026	0.005	517	0.026	0.006	1843	33101
Mortality							
1-20 *sui*	0.733	0.081	527	0.222	0.041	1813	41215
21-50 *sui*	0.623	0.082	534	0.354	0.082	1917	37533
51-70 *sui*	0.806	0.137	465	0.309	0.052	1569	16406
Females							
Marital Fertility 11-50 *sui*	0.035	0.007	534	0.022	0.007	1905	33334
Mortality							
21-50 *sui*	0.767	0.109	536	0.354	0.067	1907	32640
51-70 *sui*	0.614	0.118	14149	0.312	0.062	1505	14149

For each of the outcomes specified in the row headings, a three-level random-intercept binomial response model with logit link was estimated with the *gllamm* package in STATA. The first level consisted of sets of siblings: each observation in the analysis summarized the experience of a set of siblings. The variable used as a response consisted of a count of the number of siblings with the specified characteristic, or in the case of fertility or mortality, experienced the specified event. Another variable provided a count of the number of siblings in the set was used as the denominator. To account for trends over time, a control for the year of birth for the eldest sibling was included. In the analyses of fertility and mortality, control variables accounted for the age distribution of the siblings at risk. The second level consisted of descent groups. The third level consisted of villages.

Table 7. Contributions of Village, Descent Group, and Descent Branch to Socioeconomic Outcomes, 1749-1909

	Male								Female	
	Attainment by 31-40 *sui*	Name at age 31-40 *sui* Diminutive	Name at age 31-40 *sui* Non-Han	Marriage by 31-40 sui	Marital Fertility 11-50 *sui*	Mortality 1-20 *sui*	Mortality 21-50 *sui*	Mortality 51-70 *sui*	Mortality 21-50 *sui*	Mortality 51-70 *sui*
Village										
Intercept Variance	0.938	0.214	0.205	0.192	0.026	0.729	0.627	0.815	0.769	0.620
S.E.	0.176	0.040	0.043	0.032	0.005	0.082	0.084	0.139	0.112	0.120
Units	553	553	553	553	517	527	534	465	536	461
Descent Group										
Intercept Variance	0.741	0.380	0.352	0.252	0.024	0.201	0.343	0.300	0.351	0.307
S.E.	0.124	0.068	0.049	0.045	0.005	0.043	0.055	0.055	0.068	0.063
Units	1968	1968	1968	1968	1843	1813	1917	1569	1907	1505
Descent Group Branch										
Intercept Variance	1.284	0.501	0.872	0.797	0.009	0.085	0.030	0.030	0.010	0.031
S.E.	0.122	0.087	0.067	0.070	0.004	0.038	0.036	0.040	0.034	0.048
Units	10523	10523	10523	10523	9560	9524	10732	7091	10159	6394
Sibling Set										
Units	33005	33005	33005	33005	33101	41215	37533	16406	32640	14149

For each of the outcomes specified in the column headings, a four-level random-intercept binomial response model with logit link was estimated with the *gllamm* package in STATA. The first level consisted of sets of siblings: each observation in the analysis summarized the experience of a set of siblings. The variable used as a response consisted of a count of the number of siblings with the specified characteristic, or in the case of fertility or mortality, experienced the specified event. Another variable provided a count of the number of siblings in the set was used as the denominator. To account for trends over time, a control for the year of birth for the eldest sibling was included. In the analyses of fertility and mortality, control variables accounted for the age distribution of the siblings at risk. The second level consisted of descent group branches, the third level consisted of descent groups, and the fourth level consisted of villages.

Table 8. Association of Individual Attainment Chances During the Twentieth Century with the Attainment of Descent Group Branch During the Eighteenth- and Nineteenth Centuries

Outcome: Attainment of official position, males born 1930-1980		
	Odds ratio	p-value
Any member of descent group branch held an official position 1749-1909	2.21	0.05
Observations	724.00	
Log-likelihood	-168.31	
Degrees of freedom	9.00	
Pseudo r-squared	0.06	
Outcome: Number of years of education attained, males born 1950-1980		
	Coefficient	p-value
Any member of descent group branch held an exam title, 1749-1909	0..40	0.19
Observations	46200	
MSE	5.25	
Degrees of freedom	11.00	
R-squared	0.05	

Estimates included controls for village of residence. Results for village are not reported here to save space. Observations are restricted to contemporary households that could be assigned to a descent group branch via direct linkage beween a household member and an ancestor in the household registers. We are currently carrying out additional linkage within the contemporary data that will eventually result in the assignment of remaining households to descent group branches. Numbers of observations differ because not all men for whom an occupation was reported also had educational attainment reported.

Table 9. Correlations in the Historical and Contemporary Rankings of Descent Group Branches (n=36)

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			Historical Rankings of Descent Group Branches					Contemporary Rankings of Descent Group Branches		
			Official Income	Official Position	Exam titles	Low status boys' names	High status boys' names	Official position	Prop. > 12 years of education	Average years of education
Historical Rankings of Descent Groups Branches	Official position	*r*	**0.98**							
		p value	**0.00**							
	Exam titles	*r*	**0.38**	**0.37**						
		p value	**0.02**	**0.02**						
	Low status boys' names	*r*	-0.32	-0.26	-0.22					
		p value	0.06	0.13	0.19					
	High status boys' names	*r*	**0.38**	**0.35**	0.06	-0.21				
		p value	**0.02**	**0.04**	0.72	0.22				
Contemporary Rankings of Descent Groups Branches	Official position	*r*	0.27	0.27	**0.33**	0.08	0.09			
		p value	0.11	0.11	**0.05**	0.64	0.58			
	Prop. > 12 years of education	*r*	-0.04	-0.06	**0.39**	-0.05	-0.07	0.31		
		p value	0.82	0.73	**0.02**	0.78	0.67	0.06		
	Average years of education	*r*	0.10	0.09	0.27	-0.22	0.20	0.25	**0.33**	
		p value	0.57	0.62	0.11	0.19	0.25	0.14	**0.05**	
	Prestige position	*r*	0.04	0.01	0.06	-0.35	0.27	0.06	0.18	**0.49**
		p value	0.81	0.97	0.73	0.04	0.11	0.73	0.29	**0.00**

Aggregate characteristics of contemporary descent group branches are calculated from observations in households that could be assigned to a descent group branch via direct linkage between a household member and an ancestor in the household registers. We are currently carrying out additional linkage within the contemporary data that will eventually result in the assignment of remaining households to descent group branches.

Table 10. Correlations in the Historical and Contemporary Rankings of Descent Group Branches Within Areas (n=36)

			Historical Rankings of Descent Group Branches within Areas					Contemporary Rankings of Descent Group Branches within Areas		
			Official Income	Official Position	Exam titles	Low status boys' names	High status boys' names	Official position	Prop. > 12 years of education	Average years of education
Historical Rankings of Descent Groups within Areas	Official position	*r*	**0.98**							
		p value	**0.00**							
	Exam titles	*r*	**0.53**	**0.48**						
		p value	**0.00**	**0.00**						
	Low status boys' names	*r*	-0.19	-0.16	-0.08					
		p value	0.28	0.34	0.64					
	High status boys' names	*r*	**0.54**	**0.51**	0.34	-0.07				
		p value	**0.00**	**0.00**	0.04	0.70				
Contemporary Rankings of Descent Group Branches within Areas	Official position	*r*	**0.40**	**0.40**	**0.34**	0.15	0.24			
		p value	**0.01**	**0.02**	**0.05**	0.39	0.17			
	Prop. > 12 years of education	*r*	0.23	0.19	**0.47**	0.10	0.17	**0.40**		
		p value	0.18	0.27	**0.00**	0.57	0.31	**0.02**		
	Average years of education	*r*	0.23	0.21	0.30	-0.05	0.23	0.29	**0.50**	
		p value	0.18	0.21	0.07	0.78	0.18	0.09	**0.00**	
	Prestige position	*r*	0.14	0.10	0.22	-0.17	**0.34**	0.03	0.20	**0.58**
		p value	0.43	0.58	0.19	0.33	**0.04**	0.85	0.23	**0.00**

Aggregate characteristics of contemporary descent group branches are calculated from observations in households that could be assigned to a descent group branch via direct linkage between a household member and an ancestor in the household registers. We are currently carrying out additional linkage within the contemporary data that will eventually result in the assignment of remaining households to descent group branches.

Table 9. Correlations in the Historical and Contemporary Rankings of Descent Group Branches Within Villages (n=33)

.			Historical Rankings of Descent Group Branches within Villages					Contemporary Rankings of Descent Group Branches within Villages		
			Official Income	Official Position	Exam titles	Low status boys' names	High status boys' names	Official position	Prop. > 12 years of education	Average years of education
Historical Rankings of Descent Group Branches within Villages	Official position	*r*	**0.96**							
		p value	**0.00**							
	Exam titles	*r*	**0.58**	**0.55**						
		p value	**0.00**	**0.00**						
	Low status boys' names	*r*	-0.10	-0.06	0.21					
		p value	0.58	0.72	0.25					
	High status boys' names	*r*	**0.48**	**0.47**	**0.35**	0.25				
		p value	**0.00**	**0.01**	**0.05**	0.16				
Contemporary Rankings of Descent Group Branches within Villages	Official position	*r*	**0.39**	**0.43**	0.23	0.22	0.15			
		p value	**0.02**	**0.01**	0.21	0.22	0.40			
	Prop. > 12 years of education	*r*	0.26	0.23	**0.52**	0.20	0.22	0.15		
		p value	0.15	0.20	**0.00**	0.27	0.22	0.41		
	Average years of education	*r*	0.31	0.26	**0.53**	-0.16	0.28	0.04	**0.55**	
		p value	0.08	0.15	**0.00**	0.37	0.12	0.82	**0.00**	
	Prestige position	*r*	0.16	0.10	0.32	-0.01	**0.44**	0.17	**0.37**	**0.74**
		p-value	0.36	0.60	0.07	0.94	**0.01**	0.35	**0.04**	**0.00**

Aggregate characteristics of contemporary descent group branches are calculated from observations in households that could be assigned to a descent group branch via direct linkage between a household member and an ancestor in the household registers. We are currently carrying out additional linkage within the contemporary data that will eventually result in the assignment of remaining households to descent group branches.