

Fertility Decline in Rural China Processes in Core and Periphery

In an important 2000 article in *Social Science History*, G. William Skinner, Mark Henderson, and Yuan Jinhua show how the timing of China's fertility decline between 1960 and 1990 varied through what they call "hierarchical regional space," or HRS, a hybrid model combining the level of a place on an urban-rural continuum with its place in a series of core-periphery zones. They use the example of the lower-Yangtze macroregion (Skinner 1977) to show that fertility declined first in the more urban core zones of the HRS model, and diffused over time through the more peripheral zones over a period of decades. In this model, there was high fertility and relatively low variance before 1960; expanding variance starting in the late 1960s, when the core regions began a decline in fertility; contracting variance after 1980; and low fertility and also relatively low variance after 1985, as a relatively uniform pattern of low fertility prevailed over all of China (Skinner et al. 2000). In their model, four possible kinds of factors influenced fertility decision-making differentially through the zones of HRS: the spatiotemporal patterning of birth-planning policy and practice; the level of socioeconomic development; changes in traditional family system norms; and the space-time dynamics of the spread of sex-selective abortion (Skinner et al. 2000: 646-47). Each of these factors took hold first in the core regions and spread to the periphery over time.

We find that this model of spatial differentiation and diffusion is much more satisfactory than models proposed earlier, which generally dichotomized China into urban and rural zones. One influential model was proposed by Greenhalgh (1988), who argued that fertility fell faster in urban areas because urban couples were relieved of the necessity to have children by the provision of state-funded pension systems and the declining value of children's labor in a wage economy, while rural fertility fell more slowly because people needed children for labor and for security in old age, given that the collective agricultural system of the 1960s through the early 1980s did not provide these. A related model was proposed by Lavelly et al (xx), who posited that fertility decline happened earlier in urban areas because the desired number of children fell in response to a modernizing socialist economy before there were any official programs to

limit fertility, while in the rural areas there was no incentive to limit fertility until the state forced the issue with the *wan, xi, shao*, or "late, sparse, and few" program beginning in 1971. Both these models capture some of the variation and some of the factors addressed by Skinner et al., but in dichotomizing rural and urban fertility decline, they ignore both the variance *within* the cities or *within* the countryside and also the overlap between the higher-fertility areas within the urban sphere and the lower-fertility rural zones.

At the same time, a macro-analysis of regional variation of the type performed by Skinner et al does not tell the entire story. Regional patterns are made up of individual decisions made by couples in particular communities, and in order to understand fully how the process of fertility took place when it did where it did, it is valuable to look at the process in detail in specific localities, looking closely at *just what was different* at different times in different places. A set of surveys, combined with ethnographic research on people's fertility-related decision making, which we conducted between 1999 and 2008 in three areas ~~1999 and 2002 in two areas~~, can lend substance to the local workings of the process of fertility decline as it played out in ~~three~~ ~~we~~ areas located very differently on the HRS continuum. Since the population of ~~both~~ these three areas was rural and primarily agricultural during the period of the rapid fertility decline, we find that an analysis based on a rural-urban dichotomy does not work to explain the differential timing of fertility decline in the ~~three~~ ~~we~~ areas. Rather we must look at the particular occurrence of factors such as the four mentioned by Skinner et al., as well as other factors not mentioned by them, to determine the reasons why our three ~~we~~ sets of rural populations ~~communities~~ experienced China's fertility decline at such different times.

Our first dataset refers to ~~When we compare our data from~~ Xiaoshan district in Zhejiang province, an area that is located in the second-innermost core zone of the Lower Yangtze Macroregion where according to Skinner et al.'s analysis (2000: 626) fertility decline starts much earlier than it does in much of rural China. Unsurprisingly, when we compare the Xiaoshan data with our data from ~~t~~, ~~which lies in the second-innermost core zone of the Lower Yangtze Macroregion according to Skinner et al.'s analysis (2000: 626)~~ fertility decline starts much earlier than it does in much of rural China, with data ~~wo~~ much more peripheral zones in the North China and Lingnan Macroregions – Ci county in Hebei and Yingde county in Guangdong -, we find that

~~essentially the same~~ pattern of fertility transition occurred in Xiaoshan 10 years earlier than in Ci County and 20 to 30 years earlier than in Yingde County. ~~Ci County happened about 10 years later than in Xiaoshan.~~ In Ci County, or better still in the two rural townships closely surveyed by one of us (Wang), we find that fertility remained high through the 1960s and did not begin to decline until after 1971 with the implementation of the *wan, xi, shao* policy ~~after 1971~~. In Yingde city county, or better still in the small 'single-lineage village' closely studied by one of us (Santos), the fertility decline only started to occur in the late 1980s after the *jihua shengyu* (or birth planning) policy was effectively implemented in the village area.

NOTE:

- CAN WE GET THREE MAPS OF CORE-PERIPHERY STRUCTURES (INCLUDING ONE ON THE LOWER YANGZI MACROREGION, ONE ON NORTH CHINA AND ANOTHER ON LINGNAN) WITH CI COUNTY, XIAOSHAN AND YINGDE (HARMONY CAVE) DOTTED ACCORDINGLY ON EACH?

- THESE MAPS WOULD SHOW THAT:
 - 1) XIAOSHAN IS AT THE INNER CORE OF THE LOWER YANGZI REGION
 - 2) CI COUNTY IS SOMEWHERE AT THE PERIPHERY OF THE NORTH CHINA REGION.
 - 3) YINGDE COUNTY IS LOCATED IN THE SEMI-PERIPHERY OF THE LINGNAN REGION.

- ANOTHER ISSUE THAT MAY BE WORTH NOTING HERE IS THE QUESTION OF THE RELATIVE CENTRALITY OF THESE MACRO-REGIONS IN CHINA'S GREATER ECONOMY.

~~(CAN WE GET TWO MAPS OF CORE-PERIPHERY STRUCTURES OF BOTH THE LOWER YANGZI MACROREGION AND NORTH CHINA WITH CI COUNTY AND XIAOSHAN DOTTED ACCORDINGLY ON EACH? IF YES, WE CAN SHOW~~

VISUALLY HOW XIAOSHAN IS AT THE INNER CORE OF THE LOWER YANGZI REGION BUT CI COUNTY IS SOMEWHERE AT THE PERIPHERY. OR USE ONE MAP TO INCLUDE BOTH?). ~~Revise this to include Gonçalo's data.~~

At one level, the simple difference between the spatial location of our ~~three~~ ~~we~~ study areas “explains” the differential timing of the fertility transition. But in fact, this is not explanation unless we determine the actual factors that were different in the ~~three~~ ~~we~~ areas. We believe that, since a population-level phenomenon such as fertility decline is at its base the cumulative result of individual fertility decisions and fertility histories of individual women and families, large-scale patterns of fertility decline, are not completely explained until we can understand them from a micro-perspective, i.e. by looking at the childbearing careers of successive cohorts of childbearers, by looking at the changes in the pattern of fertility behavior from one cohort of women to the next. If we are going to understand why couples in the core of the Lower Yangzi region started limiting their fertility sooner than couples in the periphery of the North China and Lingnan macroregions, we need to understand the factors that led them to their decisions to bear fewer children. They did not sit around thinking “we are in the periphery; we can continue to have children.” Rather they made their decisions on the basis of certain ‘rational calculations’ that had to do with many different factors that differed in the ~~three~~ ~~we~~ areas here in question.

We think that ~~in~~ order to understand the changes in people’s fertility ~~their~~ decision-making and the factors behind it, we need to conduct a two-step analysis. The first step is to analyze the timing of fertility changes from a micro-, or bottom-up perspective, looking at the local differences in age-specific fertility, parity progression (including, where possible, progression depending on the sex of previous births), birth intervals, and timing of first and last births. By looking at these statistics that allow us a look into childbearing careers, we can see the ways in which successive cohorts of women in the ~~three~~ ~~we~~ study areas have changed their fertility habits. Once we have delineated the differences between the fertility careers of successive cohorts of women in the two localities, the next step is to look at the independent variables, varying institutionally or regionally, that may be responsible for the differential timing of these changes in fertility. We ~~only~~ examine ~~two~~ ~~three~~ possibilities here.

The first possibility ~~One~~ is institutional and follows from the observations by Greenhalgh (1988, 1993), that rural fertility (she sticks with a dichotomous model, but

we can replace her “rural fertility” with “fertility in more peripheral zones) did not decline until there were government campaigns that raised the cost of non-compliance with governmental norms. Skinner et al ~~suggest~~ (2000: 646-47) suggest that the birth-limitation campaigns, beginning with *wan xi shao* and proceeding to *jihua shengyu* (or birth planning), after 1979, were implemented at different times and with different severity in different zones of the HRS space. If this were the case, fertility would decline faster where implementation happened sooner, was more severe, or both.

The second possibility is that social and economic factors that Greenhalgh, and others, using dichotomous models, see as operating only in the cities in the 1960s, in fact operated at different times across regional space, rather than wholly in the cities or wholly in the countryside, and that in some rural areas closer to the core of the HRS system, such as our survey villages in Xiaoshan, they operated much more like they operated in the cities, than like they operated in a much more “typically rural” and peripheral location as those surveyed in Ci County and Yingde County. These factors might include, among others, higher levels of education, higher standards of living, lowered infant mortality rates, or a more commercialized economy. It is plausible that Xiaoshan, with its high standard of living in traditional times (Schoppa 1989) and its proximity to the great metropolitan center at Hangzhou, was more “developed” or “modern” than Ci County or Yingde County, and that fertility decline there, as in China's cities, began to happen before there were any campaigns urging birth limitation.

[Also cultural change as indicated in Yan's *Private Life* book and in the recent CQ article on central China.](#)

[Do we want to continue third explanation?](#)

We had also planned to explore here another variable less directly related to birth-limitation campaigns or to any obvious aspect of the regional systems model, but we shall not have the space to do this here. This line of inquiry would have drawn attention to the difference between the compensation systems of the three areas during the period of relatively stable collective agricultural organization between 1962, when the radical features of the original People's commune system were dismantled, and 1981-82, when collective agriculture itself was disbanded in favor of the household responsibility system. Differences in the amounts of compensation in grain and/or cash received by families who added a child might well have changed the calculus of

whether a further birth was likely to be economically advantageous to a family in the short- or medium-run. If this hypothesis were right, we would be adding a previously neglected factor that needs to be considered in any further regional analysis of differential fertility decline. Lack of space will also prevent us from considering in our comparative analysis two very important factors also mentioned by Skinner et al. (2000: 647), namely change in family systems and increasing availability of sex-selective abortion.

In the remainder of this article, we present a brief introduction to our research sites in Xiaoshan, ~~Cand Ci~~ County and Yingde County; describe our research methods, and present and analyze our results in light of the questions raised above.

THE RESEARCH SITES

Xiaoshan District (formerly County), Zhejiang

Xiaoshan lies on the south bank of the Qiantang River, which has long been an important transport corridor and source of marine fisheries for the area around Hangzhou, the capital of prosperous Zhejiang province on the east coast of China, south of Shanghai. The provincial capital itself lies immediately across the Qiantang River, and Xiaoshan's proximity both to the longtime provincial capital to the north and particularly to the important administrative and cultural center of Shaoxing to the east has meant that Xiaoshan itself has long been a center of elite culture as well as a flourishing center of commerce (Schoppa 1989; Lai 2001), and its social and cultural institutions in traditional times were representative of the "Eastern Zhijiang" cultural area centered on Shaoxing and the important port city of Ningbo farther to the east. Extended patrilineages have historically played an important social and economic role in the society of Xiaoshan and neighboring areas, and the genealogical records compiled by these lineages are extraordinarily rich and numerous, providing the basis for our research and others' on the premodern precursors of the demographic patterns outlined in this paper (Harrell 1985; Harrell and Pullum 1995; Liu 1985, 1995; Holman, Harrell and Han 2005). These exogamous lineages, whose member men tend to be concentrated in particular villages and town neighborhoods, also provide social and cultural continuity with the pre-revolutionary society. **(fn on admin divisions)**

Recently, Xiaoshan has become one of the "five tigers of northern Zhejiang," an

area of considerable industrial and urban development, rising incomes, substantial in-migration from poorer provinces, very little out-migration, and a tendency to build large and extravagant private homes, which as often as not are torn down within a few years to build high-rise luxury apartment complexes. Eastern Xiaoshan is also the site of the newly opened Hangzhou International Airport, and superhighways, as well as interprovincial rail trunk lines, serve the county seat and many parts of the county. Xiaoshan thus represents one of the wealthiest and most developed regions of China. At the same time, however, there is still considerable agricultural land, devoted to rice, vegetables, and cash crops such as rapeseed, tobacco, and tea; and animal husbandry, including commercial raising of pigs, chickens, and ducks, still contributes heavily to the rural economy.

Map 1 about here.

Within Xiaoshan, our ethnographic and survey work has been carried on in two specific areas. Changhe, now administratively part of Binjiang District of Hangzhou city, is the more developed of the two areas (See map 2), being characterized for a long time as the "head of Xiaoshan" in the regional economy (Changhe 1989). It lies immediately on the south bank of the Qiantang, only a stone's throw to the south of Hangzhou, giving it an important position in the regional economy. Running through the center of Changhe, Zhe-Gan and Xiao-Hang railways provide convenient transportation from Zhejiang to Jiangxi province. While an old town with a long history dating back to Neolithic times, Changhe is thriving economically and is booming socially as new developmental policies, designed to upgrade several rural Hangzhou suburbs, including Changhe, into development zones, have been implemented. Currently under construction is a new bridge (the fourth bridge across the Qiantang river), which will shorten the driving time from Changhe to Hangzhou to 15 minutes. Local officials of the township proudly told us that in 5 years, Changhe will be like Pudong is to Shanghai.

In Changhe, our research was supervised by Han Hua, and focused on members of the Lai extended patrilineage, an influential lineage resident in the area since the 1200s, which produced many prominent degree-holding scholars and officials. The Lais

compiled their genealogy periodically up to the early 20th century, and maintained a typical late-imperial ancestral cult, including lavish sacrifices in a grand ancestral hall. In 2002, among a total of 37,336 residents in Changhe, 5,506 (14.7%) were members of the Lai extended lineage (Han interview with Changhe township officials). There are two subgroups of Lais in Changhe. The rural Lais mostly live in two villages (formerly production brigades)—Chang'er and Changhe. They are agriculturalists, growing a variety of crops in different ecological zones. In the north of Changhe, close to the Qiantang river and where soil is sandy and not suitable for growing rice, cotton and hemp used to be the main cash crops. On the southern plain where soil is rich and where ponds and rivers provide abundant water resources for irrigation, wet rice, taro, and sugarcane were key staples. Year-round mild temperatures and enough rain made two crops of rice a year possible. Farther to the south and west are a range of low hills where families planted green tea and bamboo. Other crops include wheat, rapeseed, silkworms, berries, soybeans, cotton, and tobacco.

Other Lais lived in the old town. Located in the center of the township, the old town was a prosperous commercial neighborhood where many merchant and bureaucrat Lai families lived, and where many of their small shops have boomed and busted in unison with external socioeconomic changes. The town Lais ran numerous shops providing miscellaneous services and products such as spices and other cooking ingredients, dried food, sedan chairs, clothing, furniture, religious objects and so on that families needed but could not produce themselves. In many ways the socioeconomic ties between the old town and its neighboring villages helped sustain the families of both the town and village Lais until the economic reforms of the 1980s. The reforms not only downplayed the position of the old town as a local commercial center but also transformed village economies from farming to wage laboring.

As in much of the rest of rural China, in Changhe, the importance of traditional subsistence farming has receded since the reforms of the 1980s, and many families have found wage employment in private industries and enterprises during the last two decades. While there has been a great increase in the number of households engaged in entrepreneurship, the amount of arable land has decreased due to industrialization and lately commercial housing development. In 2002, average agrarian land per household in Chang'er village was about 1.5 mu, and it was anticipated that the village would lose another 900 mu of land in 2003 because of further housing development. Although they

have clearly lost their importance in the local economy, rice farming and vegetable gardening still provide food and supplementary income for some families, as well as work opportunities for old people who usually cannot find jobs otherwise. Even today, it is still possible to see aged parents working on their small vegetable gardens and wet paddies of rice, taro, and sugarcane divided by ponds, rivers, irrigation canals, and zigzag paths- the familiar components of rural life south of the Qiantang river.

Our other field and survey site in Xiaoshan was Yiqiao township, where research was supervised by Wang Yuesheng. Yiqiao township is located in the interior of Xiaoshan district (formerly county), about 12.5 kilometers to the south of downtown Xiaoshan. In traditional times it was an important center of water transport, lying near the conjunction of the Fuchun, Puyang, and Upper Qiantang Rivers, and was counted among the "8 major towns" of the Xiaoshan area. The population density in the area is extremely high for a rural district, and at the time of the redistribution of fields to the households in the agricultural responsibility system in 1980, households received only .4 mu (270 square meters) per person of irrigated land. In 1998, the mostly rural population of Yiqiao Township was slightly over 19,000. Today, in comparison to Changhe, Yiqiao seems more industrialized but less commercialized, and the elaborate and costly houses found in Chang'er are barely to be seen in the villages of Yiqiao.

Topographically, Yiqiao is mostly plains, and its villages are but a short walk from one another, generally less than a kilometer apart. About 70% of the population of the villages in the central part of the township are members of the Han extended lineage, which is represented in Yiqiao by four different branches, of which the largest is the Xiangnan branch, whose members also constituted the majority of our research subjects, drawn from a convenience sample of 500 households of the Han lineage, mostly living in Paixuan, Houtan, and Xiashantou Villages, with a few households each from Maoshantou, Langpeng, and Shanhou villages. We interviewed either the husband or the wife in each family, depending on who was available. Our interviewees comprised a majority of the Han families living in the villages investigated. In Changhe, we followed the same strategy to obtain interviews with 500 members or wives of members of the Lai lineage, living in the Old Town and in the administrative villages of Chang'er and Changhe.

Ci County, Hebei

Ci County lies at the extreme southern tip of Hebei Province, bordering on Henan in the South, and not far from Shandong and Anhui (see map 3).

Geographically and culturally, it belongs to the North China region. It lies far from any major urban center, about halfway between the medium-sized cities of Handan to the north and Anyang, the site of some of the earliest urban remains in China, on the south. The southern boundary of the county is formed by the Zhang River, which for part of its course is also the provincial boundary between Hebei and Henan. Despite its almost totally rural character, Ci County is not remote or isolated. China's most important railway, the Beijing-Guangzhou line, passes through Ci County, and before 1949 the Fuyang river, which also passes through Ci County, was an important transport waterway linking the southern Hebei area to the great port city of Tianjin.

Map 2 (Ci Xian) about here.

Ci County lies right at the juncture of the Taihang Mountains in the West and the North China Plain in the east, and about equal thirds of its territory are taken up by mountainous, hilly, and plains areas. The population in the mountain and foothill areas is sparse, but the plains, where our investigations took place, are densely populated. Before 1949, most farmers in the plains areas had to depend on rainfall agriculture for their subsistence. The summer monsoon climate with extreme year-to-year variability around a mean of only 500mm. meant that while droughts were common disasters, floods also happened occasionally, so that poorer farmers, especially in the hilly areas, were often reduced to traveling to more favored areas to beg for food. The plains areas were relatively free from climatic disasters, and so out-migration in search of livelihood was rather rare; in fact it was not uncommon for people from the poorer surrounding districts in the mountains and hills to work as hired agricultural laborers.

The main crops in the area are winter wheat, corn, and millet, with some soybeans and sweet potatoes; cotton cultivation was also quite common. In contrast to Xiaoshan, commercialization was not very advanced in Ci County in pre-PRC times; there was little commercial agriculture in the plains areas, and almost no industry or long-distance trading activity. After the PRC was established, land reform and collective agriculture contributed some stability to farmers' lives. The extreme

centralization of the initial period of the people's communes, beginning in 1958, lasted only a few years, and from 1962 until the collective system was dissolved, primary responsibility and accounting for agriculture remained at the level of the production team. In the 1970s a combination of irrigation pumps, chemical fertilizers, and improved seed varieties brought a rise in grain yields, so that basic livelihoods are now well assured in the area; average yields of corn and wheat increased from a pre-revolutionary 250 *jin* per *mu* to 800 or more. By the late 1970s, food and shelter were considered adequate. Despite these improvements, however, there was little industrial or commercial activity in the area even into the 1990s.

Our survey work in Ci County, supervised by Wang Yuesheng in 1999, was all concentrated in 7 villages in Shicun and Jiangwu townships, both located in plains areas of the County. Questionnaires concerning fertility and marital history, along with changes in household composition over time, were filled out for a stratified convenience sample of 545 women. This sample was constructed so as to avoid duplicating information on elder generations, by interviewing the wife of only one descendant of a common paternal grandfather. Within this limitation, we attempted to interview as many women as possible with over 59 years old in 1999.

In Ci County, especially its plains areas, population density has long been very high. Since the end of the 1970s, due to the expansion of the surface area of villages, the distance between villages has shortened to about 1000-1500 meters. Before the eve of the land reform, average agrarian land per person was about 3 *mu*. By the middle of the 1960s, it had declined to 2 *mu*. At present, arable land per person only is only about 1 *mu*. This is a very common situation in plains areas of north China. Because grain yields have increased, crops are sufficient to support farmers' livelihood. But they are unable to increase their income with so little land, so many rural laborers have to leave their villages to look for jobs.

Yingde [consider pseudonym] City (formerly County), Guangdong

Famous for its fragrant black tea, the Yingde area lies in the Northern 'hilly regions' of the famous Southern coastal province of Guangdong whose core area has long been located further South in the more irrigated flatlands near the provincial capital (the city of Guangzhou) and the Pearl River Delta region (see map 3). It was in the vicinity of this core area, and thus of the former European colonies of Hong Kong

and Macao, that three Special Economic Zones (Shenzhen, Zhuhai and Shantou) were implemented in the 1980s opening the way for a remarkable economic leap that is today often compared to the economic take-off of the Four Asian Tigers¹. Despite Yingde's relatively peripheral location – Skinner (2000) placed it in the 3-4 innermost-core zone of the Lingnan Macroregion as of 1985 -, the Yingde area is by no means remote or isolated. China's most important railway, the Beijing-Guangzhou line, passes through Yingde, and before 1949 the North River - which also passes through Yingde - was an important transport waterway linking Northern Guangdong to the Pearl River Delta region and linking this coastal region to North China.

The Yingde area is predominantly Cantonese speaking, but it also includes many Hakka speaking communities – indeed, Yingde lies precisely in the borderland between the Cantonese and the Hakka speaking parts of Northern Guangdong. If socio-economically speaking the Yingde area is closer to our Hebei fieldsite than to Zhejiang, the reverse is true socio-culturally speaking. This is because of Yingde's longstanding fascination with patrilineage organizations and genealogical records, which partake of a more general 'Southern or Southeastern cultural complex' thought to have taken shape during the late imperial period (Faure 2007). Although this fascination with patrilineage organizations and genealogical records prevails in much of 'traditional' rural China, it is nowhere stronger than in the Far South and the Southeast where people's lineage groupings are quite often objectified in concrete 'family-like' local units well above the level of a Chinese 'extended family' with three or five generations. These compact rural communities came to be technically known as 'lineage-villages' or 'localised lineages' precisely because their resident families claim to descend patrilineally from a common founding apical ancestor and practice patrilocal exogamy at the group level (see Freedman 1958, 1966; see also J.Watson 1982 for an overview). Contemporary rural Yingde is still filled with such 'lineage-villages', some being 'single-lineage villages', others being 'multi-lineage villages' with two or more exogamous lineage groupings.

Map 3 (Yingde Shi)

¹ Led by the core area of Guangzhou, Pearl River Delta and the three SEZ, the province's official GDP per capita has increased from c. 65€ to over 2.000€ between 1978 and 2005. In 2006, the official GDP per capita of the provincial capital Guangzhou surpassed the symbolic US\$10.000 mark.

Our research in Yingde has focused on a relatively out-of-the-way rural township we shall call 'Brightpath'. This township is located in a particularly deprived area of West Yingde away from major waterways. The township area and surroundings have no major industries other than cement. During the late 1990s, the provincial government decided to classify the region as an area suitable for tourism development due to its Guilin-like landscape of Limestone Mountains and Caves. Also because of this official decision, the transport network linking Brightpath to the county-level city of Yingde as well as to Guangzhou and to other major Southern cities was significantly improved during the last ten years. The trip to Guangzhou for example is no longer a one-day or half-day trip as it used to be, but only takes a mere three to four hours by bus. Within Brightpath, our research has focused more specifically on a small Cantonese 'single-lineage village' of about 700 residents that we shall take to be representative of most villages in Brightpath and of similarly poor rural areas in Yingde. We shall refer to this village as the village of 'Harmony Cave'. This is the village where one of us (Santos) has been undertaking longitudinal field research since 1999 with the support of the local population. During his first (and most prolonged) stay in Harmony Cave between 1999 and 2001, Santos had the opportunity to live in three different households and had the freedom to accompany the villagers in their daily activities. His field data was primarily collected through this on-going participant observation, but he has also used other more formal methodologies like interviews and surveys. Santos has already returned to this village on several occasions to cross check and update his demographic data.

The township of Brightpath was recently expanded and now includes 16 rural administrative areas with some 130 villages (most of them 'single-lineage villages') spatially distributed around the market town of Brightpath where the township government is located and the local periodical market is held on every day of the lunar calendar with a 4 and a 9. The landscape beyond the market town includes figure-shaped limestone mountains, extensive paddy-rice fields, plantations of sweet potatoes, peanuts, taro and cassava, and small compact villages still made up for the large part of 'old-style' houses built with clay bricks and tiles. This rustic scenery echoes the late imperial agrarian picture of Guangdong as one of China's 'double rice-cropping provinces' and is clearly at odds with the current image of Guangdong as one of the most booming, urbanised and industrialised provinces of the country. In many ways, there could hardly be a more powerful reminder of the growing peripheral position of

Guangdong's northern 'hilly areas' in the wider vibrant political economy of the province and of the Macro-region of Lingnan.

Agrarian as the Brightpath landscape may still seem, it is obvious that the local economy has been undergoing important transformations first with the Maoist reforms and more recently with the post-Mao reforms that prompted a complex process of transition to a mode of livelihood in which the local farming families are increasingly engaged in a fully monetarized market-oriented economy with global resonances. In Brightpath, this process of transition to a 'post-agrarian' and 'post-socialist' condition was largely led by the more energetic, educated and flexible younger generations, women included. Moreover, it was only possible due to the loosening of the Maoist restrictions on rural/urban migration that triggered a massive wave of 'temporary labour migration' to the wealthier Southern parts of the province, mostly to the industrialised suburban areas of major cities like Guangzhou. Here, the Brightpath sojourners remain classed as 'second class citizens' due to widespread urban scorn for rural migrants and to enduring official restrictions on residence change, and they tend to work in factories as wage-labourers, or else - an option they clearly prefer - set up small-scale family enterprises of vegetable gardening near major markets of redistribution. In the last two to three decades, these new strategies of livelihood have led to an overall increase of people's annual earnings that are no longer reckoned in kind and reached in some cases the unprecedented level of RMB10.000-20.000 [~1.000-2.000€]. Obviously, these changes have also resulted in growing levels of socio-economic inequality both within and between local rural communities.

At first sight, these evidently growing levels of social and spatial mobility could lead one to think that the local pre-Communist structures and idioms of 'lineage-village organization' may have already disintegrated, not least because the state had also promoted their disintegration during the Maoist period. In practice however, this disintegration was never complete and, today, the new local bourgeoisie of 'temporary labour migrants' is investing much of its cash-savings not just on personal family projects such as new modern family houses made of cement and bricks, but also on communal village projects such as the rebuilding of 'old' lineage ancestral halls that had been destroyed or abandoned during the Maoist period. This widespread investment in pre-Communist forms of symbolic capital is symptomatic of a broader process of 'revival' of 'old' idioms and customs associated with 'lineage-village organization'

including the open practice of ancestor worship at both the family and the collective levels. This growing visibility of the 'lineage' was also encouraged by the recent administrative withdrawal of the state from the grassroots village level to the township level, but it was only possible because, to begin with, the customary practice of village patrilocal exogamy remains generalised. The same is true of the customary practice of bridewealth with discretionary indirect dowry that was never eradicated and has been undergoing a dramatic process of monetarization and inflation since the post-Mao reforms (if before the 1950s the value of bridewealth was modestly calculated with rice grain, with the market-oriented reforms of the 1980s, bridewealth started to be calculated with money and quickly increased from less than RMB1.000 [~100€] in the mid-1980s to more than RMB10.000 [~1.000€] in the early 2000s).

Of course, these Brightpath developments are not isolated, but echo what has been going on in many other parts of rural Yingde and rural Guangdong, if not in much of rural South/Southeastern China (see Potter & Potter 1990; Aijmer & Ho 2000; Ku 2003). Although it is tempting to conclude that this 'return of the lineage' illustrates the power of 'tradition' in society, this suggestion should not divert our attention from the question of social change during the last five decades of Maoist and post-Mao reforms. This is because the local 'traditional' collective structures and idioms of social organization have during this period lost much of their politico-economic authority not just to the state - which has grown exponentially - but also to the aspirations of women and the younger generations - whose autonomy and expressive power have also grown exponentially. We shall return to this issue later on in order to understand the fertility behaviour of the local population.

FERTILITY DECLINE IN THE THREE ~~WO~~ AREAS

Fertility has declined in both Xiaoshan from similarly high levels in the pre-revolutionary period to similarly low levels (Xiaoshan is slightly lower) at present. In addition, the shape of the transition is similar in both places. But the timing of the transition has been very different, with Xiaoshan about 10 years earlier than Ci County and more than 20 years earlier than Yingde. This can be illustrated with a variety of cohort-based measures derived from our two survey projects.

Average numbers of children and parity progression

Let us first examine a simple comparison between average numbers of children born per woman in the two areas:

Table 1 about here

It can be seen from these figures that the average numbers of children borne by women in the cohorts born before 1930 differs little between the two sites, and that the variation is probably random and accounted for by the small n's in both surveys. These cohorts would have experienced most of their fertility by 1960 or at the very latest during the 1960s. When we come to the cohorts born in the 1930s, however, we see a decline in the Xiaoshan figures, a decline that does not show up in the Ci County figures until a cohort about ten years younger. In fact, we can see that the total numbers of children born to mothers of various cohorts correspond very well, if we draw the correspondences diagonally between a cohort in Xiaoshan and a cohort ten years younger in Ci County.

Average number of children born, however, tells us nothing about the pattern of fertility of individual women. For this we turn to parity progression ratios, beginning with the cohort born in the 1920s:

Table 2 about here, oriented horizontally to the page.

We see immediately from the PPR figures for the cohort born in the 1920s that there is essentially no difference between the two populations; both probably approach something that in the Chinese context we might call premodern fertility patterns; whether this represents some kind of natural fertility under harsh circumstances (Wolf 2001) or whether it represents a regime of selective birth limitation (Lee and Wang 1999; Lee, Campbell, and Wang 2002) is still a matter of debate. But the rates from the two populations are very similar.

When we turn to the cohorts born in the 1930s, however, we already find an interesting divergence. As is readily visible comparing this panel to the 1920s figures, Ci County's PPRs do not differ significantly from the 1920s to the 1930s cohorts. In Xiaoshan, however, we already see changes. The progression from fourth to fifth birth begins to drop in the 1930-34 cohort (whose fourth and fifth-order births would have taken place mostly in the 1960s) and the progression from third to fourth births drops with the 1935-39 cohort, again reflecting a change in behavior in the late 1960s. We already see the beginning of the fertility transition in these cohorts in Xiaoshan. In addition, we can see that these women are making decisions about higher-order births based on the sex of the earlier births. Consider the following table, which shows the PPR for the progression from 2nd to 3rd and from 3rd to 4th births, disaggregated by the sex of the previously born children:

Table 3 about here

As the table shows, the likelihood of progressing from birth 2 to birth 3 in the cohort born in the late 1930s is not affected by the sex of the first and second children. But the likelihood of progression to birth 4 is strongly affected. A set of three children that contains at least one male yields a probability of around .5 that the mother will have a fourth child, while a set of three daughters yields a probability of a fourth birth approaching .9. In other words, most women in this cohort in Xiaoshan had three children; only those with all daughters, as a rule, continued to a fourth or a fifth birth.

The fertility of the next cohorts, whose childbearing extends from the 1960s into the 1980s, look different still: Looking back at Table 2, we can see that with these cohorts, fertility in Ci County has finally begun to drop: for the mothers born 1940-44, there are slight declines in the progressions from third to fourth and fourth to fifth births, something that is confirmed in the numbers of children born, shown in Table 1 above. In fact, the PPRs are very similar to those for the 1930-34 cohort in Xiaoshan, showing the familiar 10-year delay. For the mothers born 1945-49, we finally begin to see a drop in progression to third births in both places, certainly reflecting the pressures of the *wan, xi, shao* campaign in the 1970s. But for higher-order births, Xiaoshan is once again

ahead of Ci County: fourth and fifth births are quite rare there, while in Ci County, given the presence of the fertility limitation campaign in the 1970s when these women would be bearing their fourth and fifth children, the progressions to fourth and fifth births are still surprisingly high.

Unfortunately, we are missing the data that would allow us to compute the PPRs by sex of previous children for Ci County. But from Table 3 we can see that for Xiaoshan, where fourth and higher births have now become quite uncommon, the likelihood of progressing to a *third* birth becomes strongly sex-dependent in the 1945-49 cohort of mothers, with a probability of only .38 to .52 if at least one of the first two children is male, but a probability of .89 if the first two children are both daughters. Most women born between 1945 and 1949 in Xiaoshan bore only two children, but if the first two were girls, most of them went on to have a third child.

For the last cohorts we will analyze, the PPR chart looks dramatically different. For these women, whose fertility potential extended into the 1990s, the pattern of the two areas diverges further. Ci County women in the 1950-54 cohort actually had higher parities than Xiaoshan women in the 1945-49 cohort; and there is little change from the previous cohorts in Ci County with regard to second and third births. It is not until the cohort born in the 1960s that we see a sharp decline in third births in Ci county. Fourth and fifth births did fall off considerably, and there were no sixth births. For Xiaoshan women, second births, almost universal previously, had fallen to about three-quarters of all women in the 1950-54 cohort, and to less than half of the women in the 1955-59 cohort. There were no fifth births in our Xiaoshan sample beginning with the 1950-54 cohort, and no third or fourth births beginning with the cohort born in 1955-59.

Age-related patterns of fertility

Other data allow us to look at the ages at which women in successive cohorts were bearing their children. For our Xiaoshan survey, we have the ages of all mothers and children, enabling us to calculate age-specific fertility rates. For the Ci County survey, we only have the ages of the mothers at the births of their first and last children, along with the numbers of children. For Ci County we must thus be content with these measures of starting and stopping times, as well as measures of average birth interval. In the interests of completeness and possible extrapolation, however, we include age-specific fertility rates for Xiaoshan in addition to the other measures.

As mentioned above, our age-specific fertility data can be computed only for Xiaoshan. Nevertheless, these data support the patterns of cohort fertility inferred above from parity progression:

Table 4 about here

We can look at these fertility data from two standpoints, beginning with the shape of fertility at each period. Because we have low n's for the period before 1950, we have combined those data into a single row of the table, in which we see high fertility in age groups 20-24 and 25-29. The lower fertility in the age groups 30 and over is almost certainly an artifact of our sample; women who were over thirty before 1950 were mostly gone by the time our survey was conducted in 2002; this makes for tiny numbers and unreliable data.

Beginning with the years 1950-54, we can see much more reliable measures of fertility. Not many women are bearing children before 20, but fertility is high in all other age groups, making for a whopping TFR of over 8, consistent with the high fertility recorded in the 1950s in other parts of China (Banister 1987: 243-47). The pattern is similar for the periods from 1955-64, though both may be affected by the very low fertility occasioned by the famine of the Great Leap Forward from 1959-61.

After 1965, fertility declines, and it declines first in the older age groups. Already in the period 1965-69, women are having fewer children after thirty, with ASFR down from the previous period from .25 to .20 in the 30-34 age group, and from .19 to .08 in the 35-39 age group. At this time, however, fertility of women in their 20s had not declined from earlier periods.

In the 1970s, however, fertility declines even more rapidly; in the first half of the decade, women are bearing slightly fewer children in their late 20s, and hardly any at all in their thirties. From 1975-79 fertility at all ages declines even more rapidly; what fertility is left is almost entirely between ages 20 and 29; but even in those age groups fertility has declined from the late 1970s.

This pattern of fertility decline is interesting. While the greatest plunge in TFR came at the time of the implementation of the *wan, xi, shao* policy, there was a definite downturn in fertility before that policy went into effect, with TFR declining from 5.3 to 4.4 from the early to the late sixties, manifested by women reducing their fertility in

their early thirties and virtually stopping childbearing after 35. This fertility decline in the late 1960s follows the pattern in the inner core areas set out by Skinner et al. (2000: 643).

Looking at these comparisons between the two counties, and remembering that our Xiaoshan sample includes some families in the Old Town of Changhe (about a fourth of our total sample), while the Ci County sample is all rural, we might suspect that some of the differences in the timing of the fertility decline in the two counties are due to the presence of a lower-fertility urban population as part of the Xiaoshan sample, which would support the urban-rural dichotomization favored by Greenhalgh's institutional model. To test this possibility, we have calculated the ASFRs and TFRs for the Xiaoshan sample showing rural women only, leaving out the hypothetically lower-fertility population of the Changhe Old Town. The results are shown in Table 5:

Table 5 about here.

We can see clearly by comparing Table 5 to Table 4 that there are no significant differences; we could as easily compare the rural women from Xiaoshan with the rural women from Ci County as use the entire Xiaoshan sample. We can thus treat the entire Xiaoshan sample as representative of one level in hierarchical regional space.

Having observed the details of this pattern of age-specific fertility for Xiaoshan (details we are unable to compute for Ci County), we can proceed to simpler proxies for these detailed fertility trends, and in the case of these proxies we can compare our two research sites. Let us look first at three indicators of fertility patterns, comparing Ci County to Xiaoshan: mother's age at first birth, mother's age at last birth, and average birth spacing:

Table 6 About here

We see an interesting pattern in the Ci County data here. Mothers' ages at first birth are actually fairly uniform except for the two cohorts born in the 1950s, who came of age during the *wan, xi, shao* period. In fact, their births were *wan*, late, occurring at an average age of almost 25 throughout the decade when that policy was in force. Births were also *shao*, or few; as we have seen above, average numbers of children born and

parity progression ratios declined for both the 1940s and 1950s cohorts in Ci County. Births during this period of declining fertility were not, however, *xi*, or widely spaced; the average birth interval in fact decreased for these cohorts in comparison to all the older cohorts. In fact, as the average number of children born and the parity progression ratios both declined for the cohorts born in the 1940s and again in the 1950s in Ci county (see above, Tables 1-3), birth spacing actually moved closer together. As people were beginning to comply with birth-control policies, they seem to have been eager to have their allotted quotas as soon as possible.

The figures for Xiaoshan start out similar to those for Ci County, above, but are indicative from still another angle of Xiaoshan's earlier fertility decline. Mothers' ages at the birth of their first children go up with the 1950s cohorts here, as they did in Hebei. But in contrast to Ci County, they stay high with the cohorts born in the 1960s; when the strict birth control policy came to Xiaoshan, people continued having children *wan*, or late. But in another contrast to Ci county, as fertility overall begins to drop in Xiaoshan, with the cohorts born in the 1950s, birth intervals get shorter for awhile, before lengthening out again with the 1960s cohorts. We have at present no good explanation for this, except that perhaps people whose fertility was being limited were motivated to have their allotment of children as quickly as possible. Beginning with the 1955-59 cohort of mothers, however, birth intervals are spaced out once again.

FACTORS INFLUENCING DIFFERENTIAL FERTILITY DECLINE

As stated above, we concentrate here on three possible factors that might have contributed to the differential speed of the fertility decline in our ~~three~~ study areas: economic development or modernization, differential policy implementation, and different work compensation systems. We will examine each in turn.

Differential Living Standards

There is no doubt that Xiaoshan is now, and has historically been, wealthier and more "developed" than Ci County, fitting its geographic position. In the late imperial period, Xiaoshan and the surrounding areas were part of the core of the Lower Yangtze macroregion (Skinner 1977), the wealthiest part of the entire empire and one of the

homelands of late imperial elite culture. Well before any modernization or industrialization, farmers in Xiaoshan grew a large number of commercial crops, and Changhe in particular was a center of elite life, with many members of the Lai lineage holding degrees. The Hans of Yiqiao were perhaps not quite as successful in the examination system, but they had their share of degree holders. We have no quantitative records of income, of course, but we know that famines were rare if not unknown and that other serious natural disasters visited infrequently. The *Xiaoshan County Gazetteer* records many natural disasters during the Qing dynasty, and reduced harvests were quite often the result, but the gazetteer only mentions county-wide famine once during this period (Xiaoshan 1986: 178-83)

During the period of collective agriculture (1958-81), our interviews in both Yiqiao and Changhe revealed memories of not having enough to eat, or of being able to eat only rice gruel for at least one meal a day. Some men in Changhe, for example, reported that during this period they were forced to marry out of their families uxorilocally, so that they would have enough to eat in their wives' households, who had more grain available. Nevertheless, outside the period of the post-Great Leap Forward famine, we have no record of extreme privation. In terms of concrete figures, Xiaoshan's yields were very high, even during the collective period. In 1949, rice yields averaged only 487 *jin* per *mu*, but this figure rose to 748 by 1957, largely as a result of double-cropping and was consistently over 1,300 for 1978-81, the last four years of the collective period (Xiaoshan 1986: 224).

Current living standards in Xiaoshan, particularly Changhe, are very high for rural China, with many families engaging in entrepreneurship and about 40 households in our sample having purchased cars. In Chang'er village, the average per capita income in 2001 was 5052. But this wealth is recent, and has emerged almost entirely during the period after the fertility decline was complete.

Ci county presents a contrast in terms of living standards. As mentioned above, its economy in the late imperial period concentrated almost entirely on grain agriculture, outside the mountain areas, and there was little commercial cropping (though some cotton was grown) and no industry of any kind. Natural disasters were frequent and severe, especially in the mountain and hill areas, and although the plains were ordinarily not as hard hit, starvation was known even there, and they had the added burden of accommodating refugees from even poorer areas.

Collective agriculture, as mentioned above, along with improved varieties and increased irrigation, assured a minimal living for Ci County's farmers. But the rapid population increase during the early years of the People's Republic meant a further increase in the already high population density, and the standard of living during the collective period did not rise much above subsistence. In other words, an increase in agricultural productivity was canceled out by an increase in population, and Ci County and the surrounding parts of southern Hebei remained poor.

It is not clear what kind of direct effect living standards have on fertility. In the late imperial period, there is ample evidence (Harrell 1985, Telford 1995) that wealthier families within the lower Yangtze area, including Xiaoshan, had more children: they married earlier and had a higher fertility within marriage. During the collective agriculture period, population in both our study counties, according to official statistics, grew rapidly; Xiaoshan went from 550,000 in 1949 to over 850,000 in 1965, an increase of 2.7% per year (Xiaoshan 1986: 197), while Ci county went from 271,000 in 1949 to 352,000 in 1954, a much smaller increase of only 29.9%, or 1.39% per year. These comparative figures for the early period of socialism require some comment. We suspect that the low rates of natural increase in Ci County as a whole (much slower than would be indicated by our survey data, from the two townships in the plains areas) reflect extreme privation, high mortality, and mortality-fertility interactions in the poorer mountainous and hilly areas in the western parts of the county. The relative prosperity of Xiaoshan in this early period seems to reflect the traditional pattern in which poverty in some areas is extreme enough to inhibit population increase.

After 1965, the two areas reversed position: fertility fell in Xiaoshan after 1965, with rates of natural increase falling from 2.8% in 1964 to 1.78% in 1970, while fertility in Ci county rose after the Great Leap Forward during the late 1960s and stayed high into the 1970s. Natural increase in the county as a whole was 2.6% from 1964 to 1982, and 3.1% from 1982 to 1984, dropping to a relatively modest 1.4% only during the 1984-1991 period (Jicha Zhengwu 19xx:).

The relative wealth of Xiaoshan over Ci County did not change in the late 1960s. Perhaps Xiaoshan passed some kind of socioeconomic development threshold beyond which the fertility advantages conferred by wealth in the traditional society are canceled out by the increasing cost/benefit ratio of adding children to the family. But in the late 1960s in socialist China, this cost-benefit ratio is unlikely to have changed in

the ways described by Caldwell (1982) for modernizing capitalist societies; parents did not at this time begin to invest heavily in children's education or in consumer goods for their children for example. On the contrary, in the high collective era in Xiaoshan, our ethnographic data indicate that it was not unusual for rural parents to ask their children to start working in their early teens. Unlike their father and adult brothers who could earn 10 or sometimes even 12 work points a day, these young teenage laborers could only earn 2-4 work points a day. Nevertheless, they were little helpers who brought extra income to the family.

Case # 1: A 74 year old male in Chang'er village, Changhe township, was married in 1949 and had five children— four sons (1955, 1959, 1961, 1964) and one daughter (1957). He and his wife tried to start reproduction soon after their marriage, but could not succeed for some reason until 1955. His wife went to have an IUD inserted in 1965, one year after their youngest son was born. As the lead of a production team, he worked very hard and earned 12 work points a day. His wife worked at the team nursery and earned 20 work points a month. Both his eldest son and second sons began farming when they were 12 (in the late 1960s and early 1970s) earning 2-4 points a day. While he managed to finance the eldest son's elementary education, he could not afford to do so for the second son. In the mid 1970s, things started to improve so that his two youngest sons were able to go to school instead of doing farming full time.

Case #2: A 44 year old male in Chang'er village, Changhe township has two elder brothers who were born in 1948 and 1958 respectively. In addition, he has a younger sister who was born in 1962. His eldest brother began farming at the age of 16 but soon he left home for a railway job. Because the parents were sick and handicapped, he and his 2nd eldest brother started to work on farming when they were 13 to support the family.

From these cases and many others like them, we can discount (though not ignore altogether) the possibility of a Caldwellian shift in intergenerational transfers as a contributor to the early fertility decline in Xiaoshan.

Another aspect of "modernization" that has been suggested as crucial in bringing about fertility decline in culturally Chinese societies is education of women (Thornton

and Lin 1994; 275-6). It is not always clear exactly how education for women lowers their fertility, but we can suggest a number of possible mechanisms. Most obviously, women who are still in school at what would otherwise be a marriageable or child-bearing age are less likely marry or to bear children. This means that college and even high-school education for women should have this kind of direct effect on fertility. Another possibility is that women who are more educated are more likely to take paying jobs outside the home, and thus be less likely to assume the double burden of child-rearing and paid employment. A third possibility is that women who are more educated are more likely to understand appeals from governments or other agencies to reduce fertility. A fourth possibility is that women's education is a proxy for something else: families with higher incomes and higher expectations for their children, who will alter their calculations of the cost-benefit ratio of children, are the same families in which women are more educated. Let us examine the data on women's education from our surveys in Ci County and Xiaoshan to see if we can detect any differences in women 's education that might account for the differential timing of the fertility decline in the ~~three~~ areas:

Table 7 about here

Table 7 does- not appear to reveal any significant differences in women's education in the ~~three~~ areas, despite the greater wealth of Xiaoshan. Yingde shows great difference in education. We do see a decrease in illiteracy in Xiaoshan with the 1935-39 cohort, only 44% illiterate in contrast to the 72% illiteracy in Ci County, but in the following cohort, the situation is reversed, and illiteracy in Xiaoshan is 19 points higher. Similarly, the proportions attending junior high school in more recent cohorts are actually somewhat higher in Ci County. Even if these minor differences were significant, the level of education is not high enough in either place to keep women in school in the childbearing years, and we know from other data that women with a junior high school education, like their less educated or illiterate sisters in both places, went to work in the agricultural collectives after they came of age, so that employment was not available as an alternative to childbearing.

There may, however, be indirect effects due to the education not of women, but of their husbands. Despite no apparent differences in the educational levels of Xiaoshan and Ci county women in our surveys, there are very strong differences in male educational levels. In Xiaoshan, there are essentially no illiterate males; only 2.53% of a sample of over 200 male survey respondents reported illiteracy, and these were not concentrated in the earlier cohorts. In Ci County, by contrast, 48.9% of the males born between 1920 and 1929 were illiterate, and 36% of those born in the thirties (the cohort whose wives began the fertility decline in Xiaoshan) were illiterate. 11% of those born in the 1940s reported illiteracy as well. If we look to the other end of the educational spectrum, however, at those who gained a junior-high or higher education, we find little difference between the two samples. *Ying de* levels of illiteracy are higher. It is not completely clear what effect differences in male literacy might have had, but perhaps the higher numbers of males born between 1920 and 1949 who were literate were more receptive to the arguments made for birth limitation. On the whole, however, we judge differences in education to be a minor factor in the differential timing of the fertility decline.

On the whole, our conclusion is that the fertility decline in Xiaoshan occurred precisely at that one time in history when the living standards and educational levels of Xiaoshan were closer to those of Ci County than at any time before or after. Before socialism, gentry culture and business both flourished in Xiaoshan, while Ci County was an almost pure peasant society. This enabled Xiaoshan to have a higher fertility. In the early stages of socialism, the disasters of the great leap forward hit Ci County much harder than they did Xiaoshan (though not the plains areas of Ci County where our research was concentrated), and Xiaoshan's fertility continued to be higher. Jumping over the period of stable socialist collective agriculture, since the end of the collective economy, Xiaoshan has boomed, and its rural folk have taken part in the urban consumer economy of reform-era China; as such they have reasons to limit fertility. But during the period of high socialism, these differences were muffled. Collective agriculture kept peasants in the rich area of Xiaoshan on the edge of hunger most of the time, reducing them to the level of southern Hebei. And communist educational policies brought basic schooling to girls in both places. Economic and cultural differences between the ~~three~~ ~~we~~ areas might be invoked to explain both pre- and post- demographic transition fertility. But it is much harder to invoke them to

explain the transition itself.

Differential implementation of Population Policy

Another possible factor contributing to the differential timing of the fertility decline in the ~~three~~ *wan* areas is any differences in population policy or its implementation. Skinner et al. state (2000: 647) that the strictness and timing, or the timing of strictness, in applying population policy, was spatially distributed according to their hierarchical regional space model. Whether such a general core-periphery gradient applies or not, however, it is clear from comparing our two study areas that implementation was more thorough in Xiaoshan than in Ci County.

Until 1971, there were no *requirements* to limit fertility in either one of our study areas. At that time, the *wan*, *xi*, *shao*, or later, more widely spaced, and fewer, became the national norm. In both places, this was expressed in a little rhyming jingle about the number of children:

Yige bu shao

Liangge zheng hao

Sange duo liao

One is not too few

Two are just right

Three are already a lot

As we have seen from our figures above, fertility plummeted as soon as *wan*, *xi*, *shao* became policy in Xiaoshan; in Ci County, it stayed high even after the policy was promulgated. But in Xiaoshan, even before the *wan*, *xi*, *shao* policy, many couples began voluntarily limiting their fertility. According to our survey, already in the cohort born 1920-29, whose fecundability would have been just about over by the time of the implementation of *wan*, *xi*, *shao* in 1971 (the youngest members of the cohort would have been 42), 14 of 35 women interviewed, or 29% of the total, stated that they had used birth control; most of these must have used it in the 1960s. With the 1930-34 cohort, the proportion rises to 50%, and to 81.4% in the 1935-39 cohort, though many of those women would have been forced to use birth control after 1971.

In addition to using birth control, many women in the 1960s availed themselves of abortion or sterilization services, and these were readily available in the area. In 1964, the Health Bureau and the Birth Planning Committee of Zhejiang sent 70 doctors to Xiaoshan to train local health personnel and to carry out abortion and sterilization operations. In 1963, there were very few local hospitals that could provide fertility surgery, but by 1964, one third of the township clinics in the county were equipped to offer those services.

It is clear, then, that fertility control services were available in Xiaoshan well before the *wan, xi, shao* policy made them compulsory. But the fact remains, that in the absence of compulsion, acceptance of services requires some motivation other than escaping punishment. Many Xiaoshan women in the late 1960s clearly *wanted* to limit their fertility. It did not require any compulsory program to get them to avail themselves of the available services.

In Ci County birth control also began to be advocated in the mid-1960s, before the onset of the *wan, xi, shao* policy. However, it only reduced the fertility of local cadres, workers (of which there were very few) and teachers. Farmers still followed traditional fertility practices. Certainly, due to a decrease in infant mortality, breastfeeding times and hence birth intervals were prolonged, and average numbers of children ever born began to decline, as shown in Table 1 above. But most rural women in this period had no desire to limit fertility voluntarily. At the same time, some women who had over 6 children and realized their ideal objectives might have wanted to use contraception if it were available. However, these services weren't easily obtained in villages, so they had no choice but to give birth to children beyond ideal numbers. For this reason, the *wan, xi, shao* policy produced some results, but only at the high end of the fertility spectrum. That is, once local government advocated family planning and provided services, births over 5 children were greatly reduced, and mean numbers of children began to drop with the cohort of mothers born 1940-44. But they were still much higher than Xiaoshan levels.

Given the documented differences in desire to limit fertility in Xiaoshan and the much more restricted desire to do so in Ci County, and given the fact that neither modernization nor differential policy implementation seems to be so overwhelming as to account for all the differences in ideal patterns of fertility, we need to look further before we can explain completely the differential timing of the fertility decline in the

three areas. We propose here that a difference between the compensation systems in the agricultural collectives of the two areas seems to have made a radical difference in the perceived economic costs and benefits of having a child.

Differential Systems of Collective Compensation

We suggest here a previously under-studied way in which the cost-benefit ratio of having children changed in Ci county and Xiaoshan. After the period of experimentation with extreme communist forms beginning in 1958 when the People's Communes were first established, by late 1962 most parts of China had implemented a work-point system through which production teams, collectives of 20-40 households, distributed income to their member households on the basis of a combination of population and labor points (Parish and Whyte 1978: 62-71; Chan, Madsen, and Unger 1984: 90-93). For the first few years of this collective agriculture system, there was a fertility bounce after the mortality-induced fertility drop of the post Great Leap Forward famine (Feeney and Yu 1987; Banister 1987: 245-46). But by about 1965, this bounce was over, and families returned to a kind of rational calculus of fertility, similar to the one that guided them in earlier periods (Lee and Wang 1999). And this is where another important difference between Ci County and Xiaoshan comes in.

In our field studies, we examined carefully the details of the work-point systems in our two study areas. In Ci county, the system was relatively simple. All labor inputs of all family members were recorded by a team accountant, and totaled at the end of the harvest season each year. Part of the total harvest of the collective was paid to the state as an agricultural tax, retained for next year's seed, saved for an emergency famine-relief fund, put aside for investments in machinery or other capital inputs, or put into a welfare fund for families who had insufficient labor power. What was left over, including a portion sold to the state at officially-set procurement prices, was then distributed among the families in the collective. It was usually distributed according to the ratio of "people 8, labor 2" or "people 7, labor 3," meaning that 80 or 70% of the collective income in kind was distributed *per capita* according to the population of each family, and the other 20% or 30% according to the proportion of the collective's total work-points generated by that family's members. But the 80% or 70% distributed according to population was not absolutely free; the total amount owed the family was actually calculated entirely according to its share of work-points; if the "people" part of

the distribution exceeded the family's share of work-points, the family owed the balance to the collective. However, families were rarely forced to pay their debts to the collective, instead accumulating them year after year.

In this system, as farmers in Ci County have told us, there was great incentive to continue having children. Although a child would not contribute any work-points, he or she would not eat much, either, and the result was that in the short run the family had more per person to eat. By the time the child was consuming a significant portion of the family's food allocation, chances are he or she would be contributing labor, at least on the family's private plot, and soon thereafter on the collective lands, thus earning work points commensurate with his or her consumption, and whatever debt had been accumulated while the child was small could be returned to the collective.

Under this system, fertility in Ci county stayed high through the cohorts of mothers born between 1935 and 1944, who were bearing children well into the 1970s, because the combination of the long-term security of having children and the short-term gain in grain distribution outweighed in people's minds the medium-term decline in the ratio of work-points to household population. A few women did desire to limit their fertility, and the campaigns of the 1970s provided both the means and the pressure to do so, but only after they had borne six or seven children. Up to five at least, they considered children to be assets. As in Xiaoshan, they worked in the fields as young as 12 or 13, and as mentioned before, they were allocated a full grain ration as soon as they joined the family.

Xiaoshan's system was considerably more complex. After each team recorded its total harvest, it sold a pre-determined quota amount to the state. Out of the money that the team received for these compulsory sales, they deducted production costs, saved part and distributed part to the families in the team, strictly according to the work points they had accumulated. So monetary income depended entirely on work points. Then whatever grain was left over after compulsory sales and keeping back next year's seed was divided into two kinds: "basic grain" (*jiben kouliang*), and "overproduction grain" (*chao chan liang*). The basic grain was distributed not on a strict *per capita* basis, as in Ci County, but rather according to a complex system of different amounts for different ages and genders, differing slightly from Yiqiao to Changhe, but based on the same principle, that people of different ages and sexes consume different amounts of food:

Tables 8a and 8b about here

The overproduction grain was to be distributed according to different formulas adopted by different production teams. One of the formulas is referred as “3-3-4”, 30% on the basis of the number of livestock raised by the family, 30% on the basis of the number of cartloads of fertilizer (mixed manure, straw, and other materials) contributed by the family, and the final 40% according to work points. Thus, in effect, the family's in-kind income came from a variety of sources—the age formula, livestock and fertilizer contributions, (which depended on labor power as well as numbers of people and domestic animals), and work points. Their cash income came entirely from work points. As in Ci County, the amount distributed according to the age and gender of the family members was not really free; if its value exceeded the value of work-points earned by the family, the family was in debt to the collective. But here as in Ci County, there was little pressure to repay the debt; as one older Xiaoshan villager remarked, “if the son doesn't repay it, then the grandson will.”

This system should have two influences on income that differentiate it from the simpler system practiced in Ci County. First, since cash income was higher in Xiaoshan, and all cash income was distributed according to work points, work points (earned fully only by adults and partially by adolescents) contributed a higher overall proportion of a family's income. Second, and probably more important, the meagre rations given for young children, coupled with the long wait until those children earned any work points, made the addition of a young child to a family a marginal loss of per capita income, rather than a marginal gain as in Ci County. Villagers whom we interviewed in Xiaoshan were very cognizant of this fact, and told us that they limited their fertility in the collective period accordingly.

Case #3: A 67-year old male in Paixuan Village, Yiqiao. His wife had a total of two sons and two daughters. Before she gave birth to the second son and last child, she had not wanted to have another child, because the burdens of supporting it would be too heavy, and her husband raised the possibility of an abortion. The wife rejected this possibility because she was afraid of the health effects of the abortion. But after this, because their children were small and they did not have much labor power, they didn't have enough

grain to eat. So they borrowed grain coupons from relatives with urban household registration, and returned the loans after the harvest distribution. Other households, who had enough work points, had plenty to eat at this time. (Wang Yuesheng field interview).

Case #4: A 68 year old male in Houtan Village, Yiqiao. His wife bore a total of two sons and two daughters, the last born in 1965. Because life was difficult at that time, they did not want to have any more children, being afraid they would not be able to afford to raise them. So in 1966, at the age of 37, his wife, accompanied by the local Women's Federation head, went to a hospital in Hangzhou to undergo sterilization. She was the first woman to undergo sterilization in Yiqiao. At that time, since the grain they received from the production team was not sufficient, they would not be able to eat dry rice at both noon and evening meals, but would have to be content with rice gruel for one of the two meals (Wang Yuesheng field interview).

Case # 5: A 64 year old female in Chang'er Village, Changhe. She was married in 1962 and has born two sons and one daughter. She used to be a women team leader who was able to make up to 8 points a day, the highest possible daily work point total for women. She wanted to stop her reproduction because they could not make enough work points and therefore did not have enough food to feed the family, which at that time included two aged parents and three small children. She recalled that they had to eat radish, taro root, sweet potatoes, barley, and rice gruel to supplement meals. They did not have cooking oil either. They borrowed grain coupons from neighboring urban residents. In addition, they took chickens to Hangzhou in exchange for grain coupons. She started taking birth control pills in 1968 (Han Hua field interview).

Case # 6: A 68 year-old female in Changhe Village, Changhe. She was married in 1957. She was one of the first three women in Changhe who decided voluntarily to have an IUD inserted in 1966. She had a total of three sons and two daughters. She and her husband did not want to have more children because their children were too young to earn work points. Because they did not have enough grain to eat, they had to borrow money and grain coupons (Han Hua field interview). |

ANALYSIS AND IMPLICATIONS

At minimum, the dramatically different timing of the fertility transition in two areas of rural China, Ci County in Hebei and Xiaoshan in Zhejiang, seems to validate the hierarchical regional space model of fertility decline outlined by Skinner, Henderson, and Yuan. And since the villagers of Xiaoshan, like their counterparts in Ci County, were all members of agricultural collectives during the 1960s and 1970s when their fertility decline took place, earning their living from their share of collective income in cash and kind, the institutional change that they experienced was very unlike the institutional change experienced by urbanites, whose income was decoupled from family labor by the institution of socialist systems of wages and pensions in industries and government bureaus. In other words, the villagers of Xiaoshan, rural in settlement type but in the core of a prosperous macroregion, experienced a fertility decline very much like that experienced by urban Chinese, but under very different institutional conditions.

On the surface, these findings would seem to call into question the approach advocated by Greenhalgh, which derives the nature and timing of fertility changes from different patterns of institutional change found in an urban welfare society and in a rural collective economy, especially since there were strict measures that differentiated one from the other and prevented large-scale migration from villages to cities. But at a deeper level, we believe our findings resonate with Greenhalgh's institutional approach, if such an institutional approach is applied to a hierarchical regional model, rather than to a simple rural-urban dichotomy. After all, institutional change works on fertility behavior indirectly, at least in the absence of political or coercive pressure for fertility reduction. Couples or families make decisions whether or not to have the next child on the basis of a cost-benefit calculus; the institutional changes alter the cost-benefit equation and thus lead to different fertility decisions. In Greenhalgh's original model, urban fertility reduction resulted from the higher cost and lower benefit of rearing children under a socialist welfare state; the continued high fertility of rural areas resulted from the continuation of the family basis of economic security even under socialist collective agriculture. And indeed, in our Ci County study, we see that this continuing perception of the benefit of having large numbers of children lasted even into the 1970s when pressure for fertility reduction began. Another child, for Ci County

farmers, was not only old-age security but an immediate rise in household in-kind income and thus a strengthening of food security for the whole family.

For Xiaoshan farmers, by contrast, the calculus had altered, not because they had wages and pensions like their urban neighbors, but because the way income was allocated in their collective agricultural system changed the perceived costs and benefits of having more children. People mentioned to us, in cases like those cited above, that they could "not afford to raise" (*yangbuqi*) more children, since they received very little grain allocation and no work points for at least the first 12 or so years of the child's life. Once they had their optimal number of 2 or 3 children, including at least one son to carry on the patriline and ensure care (by himself and his prospective wife) for the parents in their old age, the costs of childbearing overshadowed the benefits, and they were eager to take advantage of the birth-control services that began to be available at this time. And while detailed studies of the regional distribution of work-point systems remain to be done, it is clear that the greater degree of monetization in the Xiaoshan economy is related to its position near the core of the regional system.

Naturally, we are not claiming that differences in compensation systems were the whole story in Xiaoshan's unusually early rural fertility decline. It is quite possible that the greater availability of contraceptive and abortion services, or perhaps some sort of political pressure to limit fertility that we did not hear about in our ethnographic research, might also have made a difference. Nor can we completely discount the cultural effect of proximity to a major urban center; it is possible that ideas about ideal family size changed in Xiaoshan in the 1960s independent of how income in cash or kind was distributed. But since informants in both Xiaoshan and Ci County confirm their motivations to limit or not limit birth, respectively, were based on this kind of cost-benefit calculus, we believe that we have discovered an important variable, heretofore neglected, in understanding the nature, timing, and spatial distribution of China's fertility decline.

At present, there still have not been enough studies to determine whether this kind of micro-institutional analysis, finer grained than that of Greenhalgh and others who have examined rural-urban differences, would be effective in adding a micro-level, behavioral understanding of the whole range of the regional and core-periphery differences in fertility decline examined by Skinner, Henderson, and Yuan (2000). Testing the utility of such an approach would require detailed examinations of the

compensation systems in collective agriculture in other areas of China. We hope to see more studies of this sort in the future.

Table 1 Average Number of Children Ever Born in Three Places, by Mother's Birth Cohort

Mother's birth year	Ci County (# of Women)	Xiaoshan (# of Women)	Harmony Cave (# of Women)
1910-19	4.41 (44)	6.50 (6)	N.A. (0)
1920-29	5.64 (163)	5.15 (48)	1.25 (4)
1930-34	5.22 (82)	4.40 (35)	2.20 (10)
1935-39	5.09 (33)	3.47 (43)	3.60 (10)
1940-44	4.48 (29)	3.19 (52)	4.06 (18)
1945-49	3.00 (49)	2.60 (106)	3.70 (10)
1950-54	3.00 (33)	1.83 (143)	3.87 (15)
1955-59	2.84 (37)	1.47 (139)	3.80 (15)
1960-64	2.41 (32)	1.49 (149)	3.60 (20)
1965-69	1.47 (19)	1.29 (118)	3.50 (20)
1970-79	1.17 (12)	1.11 (83)	1.79 (34)

* The smaller average number of children for older cohorts in Harmony Cave can be due to the much smaller N it has compared to the other two sites. Another possibility is that in Harmony the count of children didn't include all children ever born, but rather, children who survived till now?

Table 2 Parity Progression Ratios in Three Places, by Mother's Birth Cohort

Mother's birth year	Ci County			Xiaoshan			Harmony Cave		
	PPR2	PPR3	PPR4	PPR 2	PPR3	PPR4	PPR2	PPR3	PPR4
1910-19	.86	.86	.81	1.00	1.00	1.00	N.A.	N.A.	N.A.
1920-29	.97	.93	.89	1.00	.92	.86	.25	0	N.A.
1930-34	.99	.97	.92	.94	.97	.88	.90	.22	.50
1935-39	.94	1.00	.90	.98	.93	.49	.80	1.00	.75
1940-44	1.00	.93	.81	1.00	.81	.40	.94	1.00	.82
1945-49	.94	.65	.50	.93	.60	.19	1.00	1.00	.50
1950-54	1.00	.70	.30	.74	.14	.07	.93	.93	.85
1955-59	.92	.76	.27	.47	.00	N.A.	.93	.95	.71
1960-64	.94	.52	.13	.48	.01	.00	.95	1.00	.63
1965-69	.42	.25	.00	.28	.03	1.00	.95	1.00	.59

* The low PPRs for earlier cohorts in Harmony Cave could be due to the small number of women surveyed in those early cohorts. As for later cohorts, PPRs in Harmony Cave

seem to be much higher than those in the other two sites, particularly in terms of high parity. For women born in 1960s, not many progressed to have 3 or 4 children in Ci County and Xiaoshan, but the majority did in Harmony Cave.

Table 3 Sex-specific parity progression ratios in Xiaoshan, by mother's birth cohort

Mother's birth cohort	Previous births' gender composition					
	M	F	MM	MF	FM	FF
1910-19	N.A.	1.00	N.A.	N.A.	1.00	1.00
1920-29	1.00	1.00	0.92	0.92	0.91	0.91
1930-34	0.95	0.92	1.00	1.00	1.00	1.00
1935-39	1.00	1.00	0.88	0.92	0.91	1.00
1940-44	1.00	1.00	0.72	0.89	0.78	0.88
1945-49	0.92	0.94	0.38	0.52	0.52	0.89
1950-54	0.56	0.95	0.13	0.14	0	0.24
1955-59	0.16	0.82	0.00	0	0	0
1960-64	0.04	0.90	0.00	0	0.03	0
1965-69	0.05	0.53	N.A.	0	0	0
1970-74	0.02	0.30	0.00	N.A.	0.25	0
1975-80	0	0	N.A.	N.A.	N.A.	N.A.

Table 4 Age-specific fertility ratios for all women in Xiaoshan, by 5-year period

Year	Mother's age groups						TFR
	15-19	20-24	25-29	30-34	35-39	40-44	
1934-49	0.08	0.24	0.26	0.06	0	0	3.19
1950-54	0.06	0.30	0.31	0.30	0.20	0.50	8.34
1955-59	0.06	0.22	0.27	0.29	0.23	0	5.27
1960-64	0.05	0.26	0.25	0.25	0.19	0.08	5.39
1965-69	0.04	0.24	0.27	0.20	0.08	0.06	4.41
1970-74	0.01	0.24	0.19	0.06	0.02	0.01	2.68
1975-79	0.00	0.13	0.16	0.03	0.00	0.00	1.66
1980-84	0.00	0.08	0.11	0.01	0.01	0	1.07
1985-89	0	0.09	0.14	0.05	0.02	0.01	1.52

Table 5 Age-specific fertility ratios for all women in Xiaoshan, by 5-year period

Year	Mother's age groups						TFR
	15-19	20-24	25-29	30-34	35-39	40-44	
1934-49	0.09	0.20	0.14	0	0	0	2.14
1950-54	0.04	0.29	0.30	0.23	0.33	0	5.99
1955-59	0.05	0.22	0.26	0.27	0.23	0	5.15
1960-64	0.05	0.24	0.25	0.25	0.18	0.08	5.22
1965-69	0.04	0.25	0.26	0.22	0.10	0.07	4.69
1970-74	0.01	0.23	0.20	0.07	0.03	0.02	2.78

1975-79	0.00	0.13	0.16	0.03	0.01	0.01	1.71
1980-84	0.00	0.08	0.11	0.01	0.01	0	1.06
1985-89	0	0.09	0.14	0.05	0.02	0.01	1.53

Table 6 Average ages at first and last birth, and average birth interval in Ci County

Mothers' Birth Cohort	Age at 1st birth	Age at last birth	Avg. birth interval
1910-19	22.63 (34)	37.59 (29)	2.98 (22)
1920-29	22.65 (137)	38.77 (122)	3.39 (113)
1930-34	21.98 (66)	37.33 (70)	3.09 (66)
1935-39	21.96 (24)	35.83 (24)	2.79 (20)
1940-44	23.00 (28)	34.40 (25)	2.72 (25)
1945-49	23.60 (48)	33.30 (40)	2.63 (30)
1950-54	24.58 (33)	31.52 (31)	2.48 (31)
1955-59	25.00 (36)	30.19 (36)	2.13 (31)
1960-64	23.39 (31)	27.13 (30)	1.61 (27)
1965-69	23.29 (17)	25.83 (12)	
1970-74	22.91 (11)	25.80 (10)	

Table 6b Average ages at first and last birth, and average birth interval in Xiaoshan

Birth Cohort	Age at 1st birth	Age at last birth	Avg. birth interval
1910-19	19.50 (4)	35.50 (4)	2.41 (4)
1920-29	22.70 (33)	36.27 (33)	2.90 (33)
1930-34	20.31 (26)	32.44 (25)	2.55 (25)
1935-39	22.39 (18)	31.28 (18)	2.26 (18)
1940-44	20.71 (34)	26.68 (34)	1.79 (34)
1945-49	22.18 (51)	26.84 (49)	1.84 (49)
1950-54	23.29 (65)	26.77 (52)	2.07 (52)
1955-59	25.09 (54)	31.31 (26)	3.31 (26)
1960-64	24.86 (66)	32.34 (29)	3.83 (29)
1965-69	25.20 (60)	32.24 (17)	3.62 (17)
1970-74	24.17 (36)	29.00 (6)	3.50 (6)

Table 6c Average ages at first and last birth, and average birth interval in Harmony Cave

Birth Cohort	Age at 1st birth	Age at last birth	Avg. birth interval
1920-29	36.25 (4)	40 (1)	1.00 (1)
1930-34	32.00 (10)	34.67 (9)	1.43 (9)
1935-39	25.00 (10)	33.50 (8)	2.05 (8)
1940-44	22.44 (18)	33.47 (17)	2.71 (17)
1945-49	22.60 (10)	32.00 (10)	2.56 (10)
1950-54	21.47 (15)	30.36 (14)	2.19 (14)

1955-59	23.00 (16)	30.50 (14)	1.86 (14)
1960-64	21.70 (20)	28.47 (19)	1.77 (19)
1965-69	21.95 (20)	27.63 (19)	1.76 (19)
1970-79	22.35 (34)	24.76 (17)	1.28 (17)

Table 7a Women’s educational level by birth cohort, Ci County

Birth Cohort	Illiterate (%)	Recognize some words (%)	Elementary school (%)	Junior high school (%)	Senior high school (%)
1910-19	85.7	5.7	8.6	0	0
1920-29	92.0	1.8	6.2	0	0
1930-34	85.1	6.0	7.5	0	1.5
1935-39	72.4	0	17.2	10.3	0
1940-44	39.3	7.1	39.3	14.3	0
1945-49	30.6	0	55.1	14.3	0
1950-54	29.0	3.2	41.9	19.4	6.5
1955-59	38.9	5.6	33.3	19.4	2.8
1960-64	9.4	6.3	15.6	50.0	18.8
1965-69	0	5.3	15.8	63.2	15.8
1970-74	0	0	8.3	66.7	25.0

Table 7b Women’s educational level by birth cohort, Xiaoshan

Birth Cohort	Illiterate (%)	Elementary school (%)	Junior high school (%)	Senior high school (%)
1910-19	75.0	25.0	0	0
1920-29	81.8	18.2	0	0
1930-34	80.8	11.5	3.9	3.9
1935-39	44.4	55.6	0	0
1940-44	58.8	29.4	11.8	0
1945-49	31.4	68.6	0	0
1950-54	30.8	60.0	7.7	1.5
1955-59	14.8	64.8	13.0	7.4
1960-64	6.1	48.5	28.8	15.2
1965-69	5.0	33.3	50.0	11.7
1970-74	0	27.8	61.1	11.1

Table 7a Women’s years of education by birth cohort, Harmony Cave

Birth Cohort	None (%)	2 years (%)	4 years (%)	5 years (%)	6 years (%)
1920-29	100.0	0	0	0	0
1930-34	100.0	0	0	0	0
1935-39	100.0	0	0	0	0
1940-44	94.4	0	0	5.6	0
1945-49	100.0	0	0	0	0
1950-54	100.0	0	0	0	0
1955-59	93.3	0	0	0	6.7

1960-64	100.0	0	0	0	0
1965-69	90.0	0	5.0	5.0	0
1970-79	73.5	2.9	14.7	5.9	2.9

* Note that the majority of women in Harmony Cave had no formal education, which might explain the high fertility there.

TABLE 8a Basic Grain Allocations by Age, Yiqiao, Xiaoshan, 1966-81

Age	Yearly Grain Allocation (jin)	Age	Yearly Grain Allocation (jin)
1	120	15	500
2	150	16	520
3	180	17	540
4	220	18	560
5	250	19-50 (male)	640
6	300	19-50 (female)	600
7	340	51-55 (male)	600
8	360	51-55 (female)	550
9	380	56-60 (male)	560
10	400	56-60 (female)	520
11	420	61-65 (male)	520
12	440	61-65 (female)	480
13	460	Over 65	480
14	480		

TABLE 8b Basic Grain Allocations by Age, Changhe, Xiaoshan, 1966-81

Age	Yearly Grain allocation (jin)	Age	Yearly Grain allocation (jin)
1-2	133	17-18 (male)	484
3-4	200	17-18 (female)	467
5-6	267	19-50 (male)	583
7-8	300	19-50 (female)	534
9-10	350	51-55 (male)	516
11-12	383	51-55 (female)	484
13-14 (male)	400	56-60 (male)	484
13-14 (female)	383	56-60 (female)	467
15-16 (male)	433	61+	
16-17 (female)	417		