How Many Children Do Women Want and Have?
—A comparative study of Chinese and Japanese fertility*

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I. Issues:

Fertility intention has been a serious concern in the world of social sciences. The concept of fertility preferences has been discussed for at least as long as has the idea of demographic transition (Voas, 2003:628). At the turn of this century, because of low and falling fertility, demographers had warned that if societies continued to have a low level of fertility, lower or much lower than the replacement level of 2.1 births per woman, then the population would decline in size and would age rapidly (e.g. Bongaarts, 2001:260).

Low fertility is very likely to be determined by low fertility intention; expectated number of children determined real level of fertility (Freedman, Baumert, Bolte, 1959). However, in some of the low fertility societies, we found fertility intention did not necessarily fall below the 2.1 threshold, while the actual fertility level was lower than the replacement level. Can we rely on what people say about their intended fertility to predict the real fertility level of a society? Do people do things other than what they say? What might contribute to such a possible discrepancy? And finally, is there a deficit of actual-to-preferred number of children in different societies with different demographic experiences?

There have been arguments and researches on the questions above in academic literatures. About predictability of the intention of fertility, for example, in 1970s, Coombs studied the ideal number of children and fertility achieved among married women in Detroit (U.S.) especially whether

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preference for family size was predictive of future fertility. In his study, he used an I-scale preference measure instead of a single valued statement to identify family size preference of women on a continuum. For him, the preference scale (providing the order of preference beyond the first child) was valid to predict fertility behavior. Women with higher I-scale values had more births in the prospective period and higher total number of births than those with lower I-scale values (Coombs, 1979: 527). For newly-wed women, I-scale value was the most significant predictor of completed fertility at the end of his 15 year period studies (Ibid, 533).

Intended parity from other scholars is not a consistently accurate predictor of completed fertility for individuals or of aggregate fertility for cohorts (e.g. Morgan, 2001). It is hard to catch or measure intended fertility in a survey or in fieldwork. "Stated preferences are heavily influenced by stereotypes and particularly by the model of the two-child family (a boy and a girl). This stereotype is pervasive and many surveyed individuals are 'prisoners' of it" (Bacci, 2001:283-284). This "ideal number of children" or "ideal family size" is a general estimation of what might be considered ideal, a collective image (the model value) that corresponds to a precise standard of the desirable for all the members of a community at a certain time (Girard and Roussel, 1982: 336-337). The strength of fertility intentions depends on the nature of the intentions, and on the way in which these have developed over time, and also on the number of children already born (Monnier, 1989: 253). However, Hagewen and Morgon concluded with their careful studies of fertility intention that "continued replacement-level fertility is a reasonable forecast in the United States" (2005).

Whether the desired number of children leads to actual behavior, it seemed to be conditioned by the number of children a woman already had. The consistency between the two was lower for women (in a longitudinal study by INED in France) who intended to have a third child and those who

did not intend to have a second (Monnier, 1989: 244). Or, the uncertainty on consistency between intended and actual behavior was least for women who already had at least two children and did not wish to have any more (Monnier, 1989:253). “Thinking” or “talking” of intention does not mean that individuals will make an effort to achieve their goal (Zheng, 2004). In China, fertility intention is usual higher than real fertility level (Yang, 2008).

Factors that may control fertility intention discussed by scholars were religion, size of community, occupation of family head, education, family income, wife’s labor force status, and migration status (Freedman, Baumert, and Bolte, 1959:145); religious affiliation, education and income (Coombs, 1979). Bongaarts considered the following factors may reduce fertility relative to desired family size: rising age at childbearing, involuntary infertility, and competing preferences (2001:271, 276). In his mind, the competing preferences may include a career, income, freedom from child care responsibility. Voas believed that conflicting preference on fertility between partners might be responsible for the too high or too low fertility (2003:628). In China, factors that may affect the low fertility intention include migration (You and Zheng, 2002) as well as economic and socio-cultural factors (“Jiangsu fertility intention and behavior research team”, 2008; Zheng, et. al., 2008; Gu and Wang,,eds., 2009).

Issue of fertility intention and reality has a strong social and policy implication in China in terms of fertility control and national population changes. Thirty years ago, the Chinese government adopted a strict population policy to combat the fast population growth speed and increase in numbers of total population. Currently, the Chinese population policy is to stabilize the current low fertility level (www.chinapop.gov.cn/fzgh/sewgh/200905/t20090519_171064.htm, 2009-8-4). The issue is also important for Japan. Currently, Japan has implicit population policies to raise their fertility level. Under the different policies, total fertility

rates (TFR) in the two countries remained below the replacement level, if not too low to the level (1.26 for Japan in 2005[1] and about 1.38 for China in 2006[2]). Contemporary demographic reality in Japan is due much to a stable low fertility level and that in China is the quick change of fertility to a low level over the past few decades. In these countries, total fertility rates are too low compared to the required replacement level (2.1), the population structure has changed dramatically, and population growth is too slow, stagnate or has even experienced a negative growth.

Societies encountering low fertility, like Japan, have realized that changing the direction of low fertility may not be an easy task. When there is a will of fertility control and individuals have means to control their fertility, then fertility level is much more of a private or individual decision. It is very feasible that individuals may control their fertility for the country's development (such as in China), but not to raise their fertility for the development of a nation (such as in Japan). It is important to study fertility intention of individuals, especially in countries with low fertility, since a natural and healthier fertility level, around the replacement level, is good for a nation's development. It is also interesting to study individual's fertility intention and the real fertility level of a population since in some parts of the world, where finished or closing to finish demographic transition, the fertility level is much lower than the intended fertility (e.g. Ogawa, 2003). Changes in fertility intention followed by the achievement of the goal will determine the population structure, trend of population changes, as well as what a country, by its social policies, can do to direct population change in the future.

Although China and Japan had different experiences in demographic changes, both currently are facing low fertility levels and an unwanted population structure. Changes of population structure can only be realized by

[1] Calculated from "Population statistics of Japan, 2008", www.ipss.go.jp. (2008-7-20)
[2] Calculated from "China Statistical Yearbook, 2007", http://www.stats.gov.cn/tjsj/ndsj/2007/indexch.htm (2008-7-20)

changing fertility since any change in raising mortality and international migration in China and Japan is neither feasible nor moral. Changes in fertility do not only depend on behavior, but also on individual fertility intention. Thus, this paper tries to generalize characteristics of the fertility intention under different population and social policies toward the size of a national population, to examine differences in fertility intention and behavior among married Chinese and Japanese women, as well as to compare the intention with the actual fertility level in the two countries.

II. Data and hypothesis:

Data for this analysis come from different sources. For China, data comes from a pilot study in Jiangsu Province. Six counties (located in northern, central, and southern part of Jiangsu province) participated in this survey[3] and respondents of the survey were females in reproductive age (18-40 years old). Name of the survey is "Jiangsu Fertility Intention and Behavior Survey (JFIBS)", carried out between December 2006 and February 2007, and size of the population is shown in Table 1.

For Japan, data comes from "Fertility Survey" by National Institute of Population and Social Security Research. It is a national survey on fertility intention since 1940 ("Fertility Survey"), even before the end of the World War II. The survey has been a longitudinal one, taken once in every 5 years since 1952. Originally, the survey covered only married couples; unmarried individuals have been recruited in the survey since 1982. In 1992 the name of the survey changed to "Basic Survey on Fertility Intention"("Shussei Doukou Kihon Chosa, 出生動向基本調査")[4]. Our analyses will use data from the 13th survey in 2005 which covered unmarried individuals (males and females, aged between 18 and 50 years) and married women aged younger than 50 years. Valid sample size of the 2005 survey was 15,570 (Table 1).

[3] For details on sampling and characteristics of areas of the survey, see Zheng, et al. 2008.
[4] www.ipss.go.jp/ps-doukou/j/doukou13/chapter0.html (2008-8-6)

Table 1 Sample sizes from the survey of Jiangsu Province in China and the survey in Japan

	Unmarried	Married	Total (valid sample)
6 counties in Jiangsu, China, 2007	2,908 (females)	15,395 (females)	18,638*
Japan, 2005	8,734 (males and females)	6,836 (females)	15,570

* The "total" included some divorced, separated, and widowed

Although surveys coverage were different in the two countries, one for national population and the other for provincial population, we were able to make a comparative study because 1) the sample size of the two surveys was similar; one was 18,638 (0.026% to the provincial population of 2000) and the other was 15,570 (less than 0.013% of the total Japanese population). 2) Fertilities in the two areas were very low, not only lower than the replacement level, but also too low by the fertility level required for survival of a population in the long run. And 3) both of the surveys provided information we needed for this study on fertility intention and other individual demographic and socio-economic characteristics. Our study focused on the fertility intention and actual fertility among married women only, since it was impossible to measure actual fertility among the unmarried population in societies where that most births come from marriage.

Fertility intention in this paper was measured by number of children married women wanted in their life, or ideal number of children[5] one wanted to have. Fertility intention is affected by macro/micro factors. In our study, national population and social policies were considered as macro factor. Age, educational attainment, family income, occupation, and number of siblings one has, considered as socio-demographic factors (micro factors), may affect the number of children that one wants to have. Further, we believe that all of the factors mentioned above may have positive effect on individuals' fertility

[5] It is interesting to know that the question on the ideal number of children in a family was asked for the first time in the United States in 1936 by George Gallup and demographers later adopted the concept trying to forecast the future population based on the answers (Girard and Roussel, 1982:337)

intention, or encouraging (or discouraging) women to have fewer children.

There is usually a gap between fertility intention and actual number of children one has. The actual number of children in this paper was measured by total fertility rate (TFR).[6] We hypothesized that fertility intention is always higher than actual number of children one wishes to have in contemporary China and Japan. Or, the difference between the number of children one intends to have and the actual number of children one has is always positive, or greater than zero. This nature (positive difference) is very important for social policy.

To test our hypothesis, we depended on published Japanese data offered by the Japanese government and original data of JFIBS of China. JFIBS are managed, arranged, and calculated by SPSS11.5.

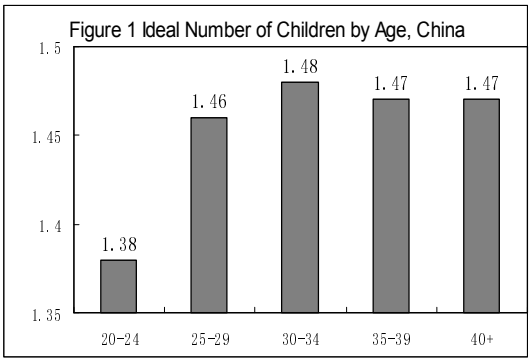
III. Results:

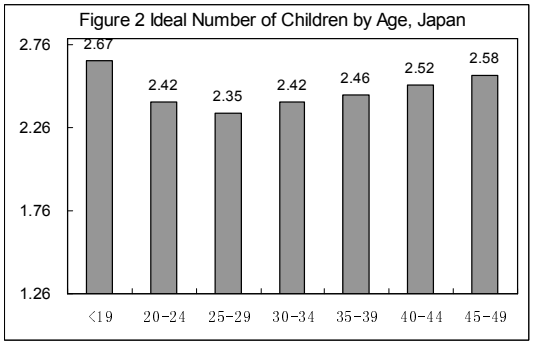
1. Ideal number of children changed with age of women.

Among married women in China (Jiangsu Province), average number of children they wanted was 1.45 ("Jiangsu Fertility Intention and Behavior Study" team, 2008: 174), very low compared with fertility of a population required to replace itself. There was a little difference in the ideal number of children by age of the married women (Figure 1[7]). Younger women had less desire to have more children than the older women. However, the differences between the number of children wanted by women in each age group and the average ideal number of children of the population （1.45） were very small, ranging from -0.07 to 0.03. The ideal number of children women wanted was a little higher but very close to the total fertility rate in Jiangsu Province in 2007 (1.35, calculated from data at http://www.jssb.gov.cn/jstj/jsnj/2008/nj03/nj0310.htm, 2008-8-6). The beginning point

[6] Demographers have had a long history to use TFR (period fertility) to evaluate fertility level when examine ideal or preferred number of children in a population (e.g. Hagewen and Morgan, 2005)
[7] All Chinese data used for analyses in this paper are calculated by this author based on JFIBS original data.

of vertical axis in Figure 1 is the TFR of year 2007 (also defined in this study as “actual fertility”) in Jiangsu Province[8]. By using this point, we were able to read not only the ideal number of children women wanted, but also how far as well the direction of the difference was the number from the TFR. It seems that ideal and real fertilities among the younger age group were very close, or younger women were having the number of children they wanted. However, among older women, the ideal number of children exceeded the real fertility, over 0.12 children for women aged 30 years and over.





In Japan in 2005, average number of children a woman wanted to have was 2.48 (www.ipss.go.jp/index.html, 2008-8-3), more than the replacement level. There was little variation of the number by age of women around the average (Figure 2[9], from original source Table 4-2), ranging from -0.02 to 0.19 children. Women aged between 20 and 39 years old wanted less number of children than the average (2.48); and women in the youngest and oldest age group wanted more children than the average. Women who are most possible to give births (25-29) wished the fewest number of children compared with women in other age groups. In regards to fertility intention and reality, we found the ideal number of children among women in the age groups were well above the total fertility rate (TFR 1.26, the starting point of vertical axis in Figure 2[10]), the reality of fertility of Japan in the same year. Younger and older women were too idealistic about their family life and their ideal number of

[8] Following figures 3, 5, and 7, 1.35 will also be used as the starting points of the figures.
[9] All Japanese data used in this paper are from www.ipss.go.jp/ps-doukou/j/doukou13/doukou13.asp (2008-8-3)
[10] Following figures 4, 6, and 8, 1.26 (TFR) will also be used as the starting points of the figures.

children was well above the TFR.

Of the seven age groups we examined, three (<19, 40-44 and 45-49) had twice more the number of children wanted than TFR of the year. It seems that if all Japanese women fulfilled their fertility goal, TFR in Japan may reach to 2.48. Although the rest of the age groups also had a high estimation on the ideal number of children, the numbers were closer to the TFR of that year. Women in these age groups may have answered the questions more realistically, because they were at the center of reproduction and reproduction was a tangible issue in their life.

In both China and Japan, the average ideal number of children was higher than the total fertility rate. Japanese women wanted more children but had fewer children. The shortfall in number of births compared to what women intended to have was 1.22 children. Chinese women wanted less children than Japanese women (1.03 children less) and the difference between their will and the reality was small (only 0.1 children). However, in both countries, older women tended to want more children than younger women did.

2. Ideal number of children varied with educational attainment of women.

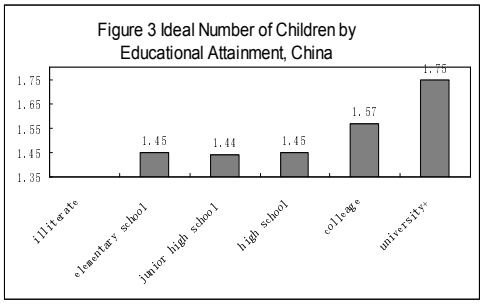
Educational attainment among Chinese women seemed to have an encouraging effect on the ideal number of children. Women with more years of education wanted more children than those with less years of education (Figure 3[11]). The difference between the fewest and most number of children wanted was a little over 0.4 children. Because of this difference in the ideal number of children by educational attainment, ideal fertility relative to the TFR of 2007 were the greatest among women with university education, 0.4 more children than the TFR. On the contrary, women with less years of education seemed to "set" the level of TFR as their ideal number of children they wanted and their behaviors were more consistent with and close to their fertility

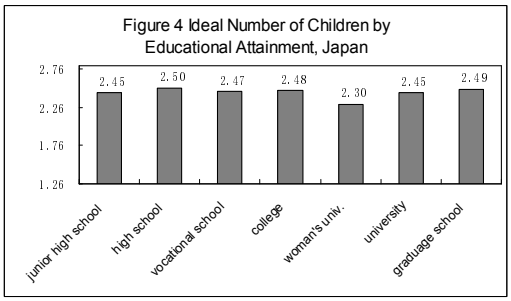
[11] Ideal number of children among illiterate women was 1.34, lower than the TFR (1.35).

intention.

Educational attainment did not change the ideal number of children of Japanese married women too much (Figure 4, from original source Table 4-5). While the ideal number of children among the married women stayed at 2.48, there was little change around the average by level of education. Women with college education had the same number of ideal number of children as the average (2.48), women with woman's university education had the fewest ideal number of children, and those with high school education wanted most children. The difference between the fewest and most number wanted was 0.2 children. Or, the ideal number of children by education varied within 0.2 children. Ideal numbers of children among married women with different educational attainment were all above the fertility reality, or TFR. Differences between the "ideal" and reality were quite substantial, ranging from 1.04 children among women with college education to 1.24 among women with high school education.

Educational attainment seemed positively (encouragingly) to affect Chinese women's fertility intention while it did not do so among the Japanese population. Also, variations in the ideal number of children among women by educational attainment were smaller in Japan than those in China. The role of education on women's fertility intention was different in these two countries.





3. Family incomes affected the ideal number of children women want.

In traditional societies, having more children may mean more wealth of the family; in modern societies, more children means more "burden" of a family

from an economic point of view since raising a child in a modern world costs more money to the parents and parents do not or need not gain much economically from children. Couples may have a threshold of the number of children they want in their minds to balance the cost and gain of raising children. They seem to plan to have a certain number of children in their life with a rational calculation, especially in modern societies.

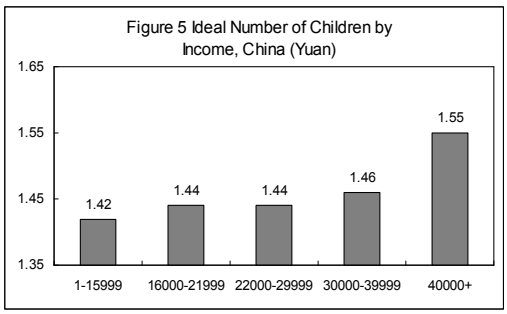
The ideal number of children among Chinese married women changed with family incomes (Figure 5). The more yearly income[12] a family had, the more children the couple wished to have. Financial status may be a serious concern among couples. That cost of having and raising a child should be balanced by their income and may be an important issue in their opinion. Women with lowest family income had the least number of children wanted which was less than the average ideal number of children. Among five income groups, women in the three lowest had lower fertility intention than the average (1.45). Women in the highest income group wanted the most number of children (1.55), 0.13 more children than women in the lowest income group. Difference between their ideal number and the TFR was smallest (0.07 children). When judging differences between intended fertility and TFR by income level, the poorest women were more realistic—having the number of children as they planned. Wealthier women's intention was above the TFR.

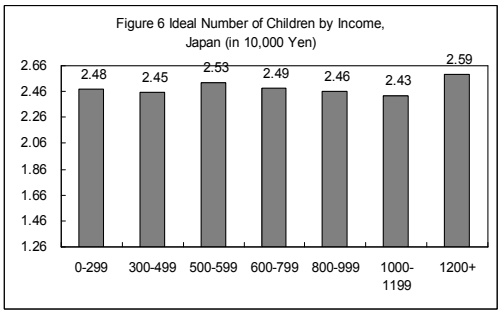
In Japan, while government encourages individuals to have more children, an individual's will to have children is not without rational consideration. According to the Japanese survey, women in families that earned most money, annually (12 million Yen), wanted the most children (2.59) compared with women in other income groups (Figure 6, from original source Table 4-7). However, women in families earning at least (up to 3 million Yen) did not show less interest of having fewer children. Income or financial situation of a family

[12] For Chinese data, we classified the incomes into 5 equally distributed groups. The cutting points for each group, upper and lower range, depends on where the income value that the 20 percentile stops..

in Japan did not affect the desire of having children in a linear fashion, indicating the complexity of factors affecting individuals' fertility intention.

In both China and Japan, we find the ideal number of children varied with annual income of a family slightly, ranging from 0.13 children (in China) to 0.16 children (in Japan). However, in China, a positive pattern is clearly shown and in Japan, there is no clear pattern that we may claim.





4. Types of occupation of women engaged had a complex effect on fertility intention.

In China, women working for the government wanted the most children (1.66), followed by land contractor (1.56) and collective enterprises employee (1.52) (Figure 7). Among eight types of occupations, women who worked in four types of occupation wanted less number of children than the average ideal number of children. Even so, since the average ideal number of children was higher than the TFR, we found most women who worked in different types of occupations wanted more but had fewer children. The ideal number of children wanted was less than the TFR. For those reemployed, they wanted the least number of children (1.33, not show in the figure), which was lower than the TFR of the year the survey was conducted.

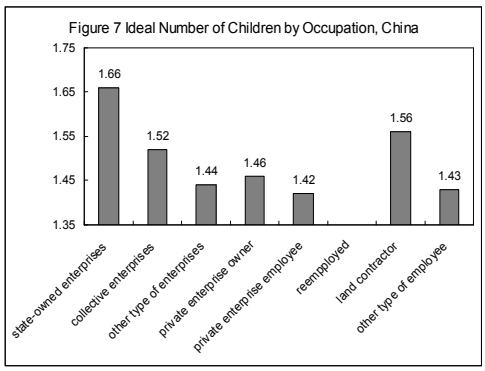
In Japan, although occupation may influence the ideal number of children of a couple through income their work pays, the ideal number varied with types and characteristics of occupations. Some types of work, e.g. working in a company or in a factory, demand strict working schedules and hours; others provide flexible schedules for women who may balance or manage formal

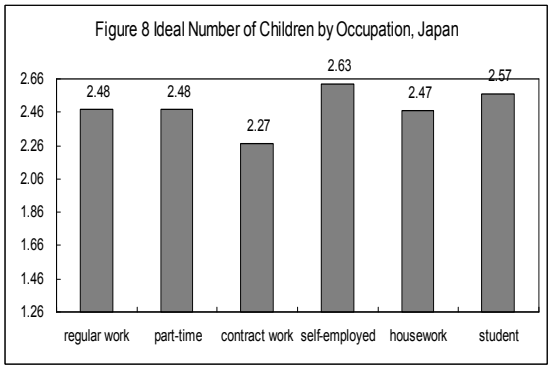
work and informal (household) work well. Raising a child demands a lot of parent's time. Reading figures in Figure 8 (from original source Table 4-8), we found those in works of flexible time schedules tended to want more children (self-employed and student) than women in other types of work. There was no difference in the ideal number of children women wanted whether they worked in regular or part-time work. As long as they worked in formal occupation or work, their will to have more children diminished. People working under contract work[13] which is considered as non-regular work had the lowest level of fertility intention, about 2.27 children. However, we may have to differentiate the ideal number of children women wanted among those self-employed and those as students. In general, those who worked for their own or in family businesses were older than the students. Thus, we consider their answers were based on their balance of family life and working life. Answers from students, usually young, were less realistic in terms of balancing their family life with social demands. It is quite interesting to see that women as housewives did not want more children than women who worked somewhere out of the family. This posed an issue that having spare time, or having time to take care of children does not guarantee that an individual wants more children.

Since the types of occupations classified in China and Japan were different, it is rather hard to compare the differences of the ideal number of children by occupation in the two countries. However, we were able to make a generalization that types of occupation make a difference in the ideal number of children a woman wants. Working in a regular or stable job encourages women to have more children. Working as a contract worker (e.g. in Japan) or reemployed worker (e.g. in China) discourages an individual's fertility intention. Regarding housework, Japan made housework as one type of occupation and China did not. Statistics showed that both Chinese (1.4

[13] "Contract work" is a general term for several types of work: "Haken" (sending worker), "Shokutaku" (no regular employee), and "Keiyaku" (contact worker).

children, not shown in Figure 7) and Japanese women working as a housewife had less the ideal number of children than the average ideal number. This is an interesting point implying that spare time and less pressure of formal or out-side family work were not a necessary condition for women to have another child in either China or Japan.





5. Number of siblings women have may affect their fertility intention.

Among married women surveyed in China, Jiangsu Province, over 83% of them have brothers and sisters (Table 2). It seems that the more siblings a woman had, the more children she wanted of her own. Women who had three siblings wanted about 0.02 more children than those who had only one sibling (Table 2) and women who had younger sister(s) tended to want more children (1.48, Table 3) than women who had other types of siblings while the average ideal number of children of the married women was 1.45.

Although we do not have data of married Japanese women for a comparison, we used data of unmarried Japanese women up to 35 years old to check a general trend of the ideal number of children by number of siblings. In Japan, the trend that showed in China also persisted. That is, the more the number of siblings a woman had, the more children she wanted for her own (Table 2). For example, women with two siblings tended to want 0.25 more children than women who had only one sibling.

Figures in Table 2 also show a difference in the number of siblings between Chinese and Japanese women. Most Chinese women had 1-2

siblings. If we count the women surveyed, 2-3 children were quite common in their natal family. In Japan, most of the unmarried women also had 1-2 siblings. However, fewer Japanese women were the only child in her family (6.6%) and more women had two brothers and/or sisters (33.3%). Women with more siblings were more likely to have more children in China and Japan. This pattern strongly suggests the influence of family and personal life experiences on one's fertility intention.

Table 2 Distribution of women by number of siblings they had and its relationship with the ideal number of children they want

China			Japan		
# of siblings	%	Ideal # of children	# of siblings	%	Ideal # of children
0	16.3	1.46	0	6.6	1.98
1	40.0	1.45	1	51.0	2.00
2	23.2	1.47	2	33.3	2.24
3	11.1	1.47	3	5.8	2.29
4	5.7	1.48	4+	1.1	2.1
5+	3.7	1.51	Not clear	2.1	--
Total (14,828)	100.0		Total (2,759)	100.0	

Note: Japanese data is for unmarried women (original Table 8-9) since we are not able to locate the same type of data for married Japanese women[14].

Table 3 Type of siblings and its relationship with the ideal number of children they want, China

Type of siblings	%	Ideal number of children
Older brother	35.9	1.47
Older sister	31.6	1.47
Younger brother	18.5	1.45
Younger sister	14.1	1.48
Total (12,424)	100.0	

IV. Discussion

Although total fertility rates in China and Japan were lower than replacement level (2.1), Japanese women wanted the number of children that were higher than the 2.1 and Chinese wanted the number of children that

[14] In Japan, number of siblings included women in the survey. Therefore, if number of siblings is 1 in the survey, it actually should mean single child in the family. If number of siblings is 2, it means two children in the family. Based on this understanding, we unified Japanese data with Chinese data. That is, "0" number of siblings means that woman is the only child in the family; "2" means the woman surveyed had two siblings and she was in a three children family.

were lower than the 2.1. This also was not only lower than the Japanese, but also lower than the 2.1 That intended fertility is lower than 2.1 is a phenomenon also observed in other countries under terms of sub-replacement fertility and sub-replacement ideals and expectations (Goldstein, Lutz, and Testa, 2002).

There are gaps between fertility intention and behavior in China and Japan. In general, the gap was narrower in China but wider in Japan. Why was the desired number of fertility greater than that of observed fertility in different countries? Although the reasons are not entirely clear, Bongaarts considered the means to collect data (surveys) are not able to measure the issue accurately; or the answers in the survey are not their real intention, however, women have to stop having children before reaching their desired number of children due to different reasons (2001: 276). We think surveys and interviews in fieldworks in China and Japan have provided general information about individuals' fertility intention. The information revealed individuals' fertility expectation to some degree. However, when interpreting the data, we need to consider the social environment contributing to the result.

It is possible that Chinese married women are more realistic and gave answers according to their own fertility plan, or they are very influenced by the national population policy and considered "policy fertility" as their ideal, or they have concealed their real fertility intention. Among the three possibilities listed, we believe that the first two are likely, due to the long history of a family planning program and propaganda in China as well as real changes in fertility behavior among younger generations. Population policy and intensified promotion of fertility control in the past over 20 years are changing individuals' view on fertility. Individuals are very aware of national population policy and adjust their fertility behavior (including intention), intentionally and unintentionally, according to the policy. Because of this, we find fertility intention among married Chinese women was low compared to fertility

replacement level, but it closes to policy fertility level (1-1.5 children per one couple). Policy fertility is a kind of model or ceiling influencing individuals' intention and guiding individuals' behavior.

In Japan, although real fertility (TFR) was very low, women wanted more children, more than TFR of Japan and the ideal number of children Chinese women wanted. On the one hand, Japanese women wanted more children and their government is encouraging individual Japanese to have more children; on the other, TFR in Japan remains low or was very low in the past. Do women talk more and act less in Japan? We believe that there must be some barriers in front of women and individual families that discourage women to fulfill their ideal fertility, or, intended fertility for Japanese women is really an ideal goal isolated from individuals' behavior. When women gave their ideal goal on fertility, it was more a general or a stereotyped but not personal goal. Demographic history and loose governmental intervention on fertility behavior in Japan may be an important reason for the wider gap between intended and actual fertility. In societies that talk and promote fertility control rigorously (like in China), answers on fertility intention may be ones from an individual's heart, although it may be guided or influenced by social norms. In societies where fertility is more a private matter (like in Japan), intended fertility answered may be one with less serious consideration of an individual's situation or less a goal of individuals' behavior.

Other than the policy or family planning history factors, we find women at different stages of life or age have different opinions about the ideal number of children. For example, younger women (<30 in China) had fewer the number of children wanted; the number only indicates their will that may be fulfilled in the future. This can be called real "ideal" number. However, older women (>40 in Japan), especially those toward the end of reproductive age, wanted more children than women in other age group. The ideal number here may be a one that the individuals' wish to achieve or a corrective view based on their

reproductive and life experience. In other words, ideal number of children wanted answered by the respondents in a survey or fieldwork is a dynamic indicator of individual fertility intention which not only changes with social environment but also with an individual's life experience.

Our study showed that some factors had effects on fertility intention. People with different occupations and incomes answered the fertility intention differently in the survey. It seems that people with more money and stable jobs tended to want more children. According to the surveys, women with more years of education in China wanted more children and women with "woman's university" education[15] in Japan wanted fewer children. Educational attainment may have a different role in fertility intention: having positive effect on reducing fertility from very high to moderate level but having negative or a discouraging effect on fertility when fertility level is very low. This seems the case in both China and Japan. Number of siblings of the interviewed women is another interesting factor which may affect the fertility intention. Although the pattern is not very clear, we still find that women with more siblings tend to want more children of their own. Natal family experience (including size of family) may influence women's own lives. In general, in regard to factors affecting the fertility intention, the issue is quite complex, indicating the fascinating, attractive and challenging nature of the issue to be studied.

From our study on fertility intention and behavior in China and Japan, a few issues deserve further investigation. First, what does the difference between intention and behavior mean to a population? In Germany, in the 1950s, couples would have on average about 0.5 more children than the expected number. According to Freedma, Baumert and Bolte (1959:143), an

[15] The Chinese case may indicate the improvement of income with more years of education, thus less economic burden felt by raising more children. For Japanese case, we expect that women graduated from "woman's university" are more skillful in family management and child rearing. However, the data pointed to a different direction; or effect of education on fertility intention among women with "woman's university" education was negative (discouraging to have more children)! One possible explanation on this is the university education gave women more power to live a life under their own will but not necessarily a life society expected.

increase of 0.5 in the average family size in Germany could change the reproductive balance in Western Germany from stability to moderate population increase. We need a more quantitative study about the degree of the difference between individual fertility intention and behavior on national fertility level, and then be able to predict more accurately the changing direction of national population and structure.

Second, how do we evaluate the reliability of answers on fertility intention of individuals? For this question, we believe further study should emphasize studies on conditions that may determine an individual's given specific answers. Or, what does fertility intention mean to each individual? What are their own but not social stereotyped or expected ideal number of children? What is the influence of national population policy on individual's fertility intention, or how much does it base on their own economic or social status?

And third, as Bongaarts pointed out, we need various means to collect information on fertility intention, not only quantitative data, but also qualitative information. Some aspects of individuals' life cannot be studied quantifiably. Fertility intention, in our view, is such one topic. Although we are able to use simple numbers to represent the intention, factors generating the simple number are very complicated and we may not be able to quantify the factors. No matter what methods we adopt to collect and analyze data, we need more studies on individuals' real fertility intentions and behavior, differences between the expected and observed behavior, and the reasons responsible for the differences. To understand individuals' real fertility intention and behavior as well as the pattern of differences between the two variables will make further estimation or projection of national fertility more accurate; and more importantly, it also will make future social policies directing the trend of population changes more efficient.

Reference:

Bacci, Massimo Livi, 2001 “Comment: desired family size and the future course of fertility”, Population and Development Review, 27 (Supp.): 282-289

Bongaarts, John, 2001 “Fertility and reproductive preferences in post-transitional societies”, Population and Development Review, 27 (Supp.): 260-281

Coombs, Lolagene C., 1979 “Reproductive goals and achieved fertility: a fifteen-year perspective”, Demography, 16(4): 523-534

Freedman, Ronald, Gerhard Baumert, Martin Bolte, 1959 “Expected family size and family size values in West Germany”, Population Studies, 13(2): 136-150

Girard, Alain and Louis Roussel, 1982 “Ideal family size, fertility, and population policy in Western Europe”, Population and Development Review, 8(2): 323-345

Goldstein, J.R., W. Lutz and M.R. Testa, 2003 “The emergence of sub-replacement family size ideals in Europe”, Population Research and Policy Review 22: 479-496

Gu, Baochang and Feng Wang (eds.) 2009 *An Experiment of Eight Million People—Reports from areas with two-child policy* (in Chinese). Beijing: China Social Sciences Academic Press.

Hagewen, Kellie J. and S. Philip Morgan, 2005 “Intended and ideal family size in the United States, 1970-2002”, Population and Development Review, 31(3): 507-527

“Jiangsu Fertility Intention and Behavior Study” team, 2008 “A study of the child-bearing desire with a low fertility rate”, Jiangsu Social Sciences (in Chinese), 2: 170-177.

Monnier, Alain, “Fertility intentions and actual behavior: a longitudinal study, 1974, 1976, 1979”, Population: An English Selection, 44(1): 237-259

Morgan, S. P., 2001 “Should fertility intentions inform fertility forecasts?”, IN G. K. Spencer (ed.), Proceedings of U.S. Census Bureau Conference: the direction of fertility in the United States. Washington, D.C.: U.S. Census Bureau

Ogawa, Naohiro. 2003. Japan's changing fertility mechanisms and its policy responses. Journal of Population Research, 20: 89-106.

Voas, David, 2003 “Conflicting preferences: a reason fertility tends to be too high or too low”, Population and Development Review, 29(4): 627-646

Yang, Juhua, 2008 “Inconsistency of intention and behavior”, Academia Bimestris (in Chinese)，1：27-37。

You, Danzhen, Zhenzhen Zheng, 2002 “Fertility desire among rural migrant women”, Sociological Research (in Chinese), 6: 52-62.

Zheng, Zhenzhen, 2004 “Fertility desire of married women in China”, China Population Science (in Chinese), 5: 73-79

Zheng, Zhenzhen, Yong Cai, Feng Wang, and Baochang Gu, 2008 “Below-replacement fertility and childbearing intention in Jiangsu Province, China”, paper presented at the International Conference on Low Fertility and Reproductive Health in East and Southeast Asia, Tokyo, November 12-14, 2008