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Source: *Science*, New Series, Vol. 235, No. 4793 (Mar. 6, 1987), pp. 1167-1172

Published by: American Association for the Advancement of Science

Stable URL: <https://www.jstor.org/stable/1698242>

Accessed: 24-10-2018 23:52 UTC

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45. The Mesozoic and Cenozoic cycle charts presented in Figs. 2 through 5 are the product of input and interest of many colleagues, both inside and outside EPR. The principal responsibility for the chrono-eustatic framework, however, rested with the authors of this article. Input for the individual cycle charts

varied; the collaborators are listed at the bottom of each cycle chart. We are grateful to all of these participants and to many other colleagues for their important input, without which this synthesis would have been far less detailed. We thank R. G. Todd and J. M. Widmier for their support for an

accurate global stratigraphic-eustatic framework and for stimulating discussions on the subject. The charts were drafted by D. Thornton. We thank Exxon Production Research Company for giving us permission to release the cycle charts and to publish this article.

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# Fertility Policy in China: Future Options

SUSAN GREENHALGH AND JOHN BONGAARTS

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**A wide range of social, economic, and demographic criteria are used to evaluate China's present one-child policy and five alternative fertility policies that might guide China's population control efforts until the end of the century when the one-child policy is scheduled to be abandoned. These criteria include the policies' macrodemographic impact on total population size and population aging; their microdemographic effects on the family's ability to support the elderly, its economic capabilities, and the position of women; and their cultural acceptability to the majority Han Chinese population. The results suggest that the least desirable strategy is to retain the present policy; all the two-child alternatives perform better than the current one-child policy in achieving the policy goals considered.**

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**S**INCE CHINA FIRST ADOPTED STRONG BIRTH CONTROL POLICIES in the early 1970s, there has been a dramatic fall in Chinese fertility. Under the *wan xi shao* policy (literally "late, sparse, and few," a policy calling for later childbearing, longer spacing, and fewer children) in effect during the 1970s, the total fertility rate, the most widely used fertility measure, dropped from 5.93 births per woman in 1970 to 2.66 births in 1979 (1). The one-child policy introduced in 1979 has pushed fertility even lower: by 1984 the total fertility rate had dropped to 1.94, slightly below the level required for population replacement (2).

In part because of the policies' demographic success and in part because of the political problems that stemmed from efforts to shrink family size very rapidly, in 1984 and 1985 China's leaders took steps to relax birth-planning policy. An important shift in policy direction occurred in April 1984 with the issuance of Central Document 7 by the Party's Central Committee. (Central Committee documents on various issues are numbered from 1 each year.) Under this document the conditions under which couples may have two children were expanded and reforms were called for in policy, work style, organization, and ideology that were designed to increase voluntary participation through better meshing of the policy with the needs of the people (3). Further relaxation occurred in early 1985, when the Central Committee changed its target for the year 2000 from 1.2 billion to about 1.2 billion—an apparently small change, but one that indicates a notable increase in flexibility on the critical issue of population goals.

In May 1986 concern that changes in the age structure would put upward pressure on the birthrate during the coming decade was reflected in Document 13, which supersedes Document 7 as the guiding statement on fertility policy (4). Although many of the moderate elements introduced by Document 7 are continued in this directive, its central message appears to be that cadres must take stronger measures to ensure that birth targets are met during the seventh 5-year plan period (1986 to 1990). In late 1986 mounting evidence that fertility was rising after several years of decline led Premier Zhao Ziyang to advocate in an early December speech that a renewed emphasis be placed on the one-child limitation (5). Despite these indications that the policy is becoming more restrictive again, the question of which elements from the more relaxed phase can be maintained in the late 1980s and the 1990s without jeopardizing achievement of the century-end target appears unresolved at the political center. The optimal mix of policy elements is also the subject of a lively debate among scholars.

From speeches and articles that have been published in the past few years, it is clear that the range of factors considered in population policy-making continues to widen. The sparse evidence available from the 1970s suggests that one macrodemographic consideration—total population size—dominated the decision to initiate the one-child policy in 1979. Although population quantity, combined with population quality, remain the central considerations in the mid-1980s, several new concerns have also been raised in academic and official circles: the cultural acceptability of fertility policy, its effects on the physical safety of females, and its impact on the rate of population aging (6).

Were these new considerations to be brought directly to bear on fertility policy, it is not clear what shape that policy would take. Not wishing to abandon the one-child policy for both substantive and political reasons, China's leaders have tended to incorporate new factors only by tinkering with the preexisting policy. With the benefits of hindsight and the perspective of outsiders, we use these new criteria and other factors to evaluate the present policy and five alternative policies that might guide China's population control efforts until the end of the century, when the one-child policy is scheduled to be abandoned. We consider the macrodemographic impact of these hypothetical policies on total population size and population aging; the microdemographic effects on the family's ability to support the elderly, its economic capabilities, and the socioeconomic position of women (two factors Chinese leaders do

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not appear to be weighing); and, finally, the cultural acceptability to the Han Chinese population (7). In the conclusion of this article, we bring these three kinds of effects together to construct an overall evaluation of these policies.

Our conclusions may be of most interest in China's provinces and counties. For although overall targets and policy directions are set by the central government, targets are then allocated to the provinces and counties. Birth-planning committees at these levels are responsible for devising the actual policies that will guide fertility behavior within their borders. At the provincial and county levels central-level policy guidelines are adapted to local conditions on the basis of results from local surveys, projections, and pilot studies. Chinese publications suggest that the period since early 1984 has been one of considerable experimentation and openness to new ideas about how to achieve population size targets. Although these policy trials are being conducted below the national level, for this article we use national-level data for our projections since subnational data on age structure, targets for the year 2000, and so forth are not available. The method is applicable to any administrative level and might be applied to provincial and county data if they become available. Our aim is to see whether, for the country as a whole, there are other policies that might be equally or even more successful than the current policy in attaining a wide range of social, economic, and demographic goals.

## Alternative Birth Control Policies and Their Impact on Fertility

Under the present policy one child is advocated for all couples, but rural couples with "real difficulties" are allowed to have two children, as long as they do so in a planned way. (By present policy we mean that in effect since April 1984; how Premier Zhao's December 1986 speech will be translated into specific policy is not yet clear.) For virtually all couples, third and higher order births are strongly discouraged (8). Since the conditions under which couples may have two children vary from province to province and county to county, it is impossible to say what proportion of couples nationwide are permitted to have two children. For our purposes here, we use the most recent total fertility rate available, that for 1984 (1.94), to represent the fertility that would prevail in the future if the current policy were maintained.

The five alternative policies that we consider are all variants of one- and two-child policies that, if carried out, would keep the population below the levels that can be expected if the total fertility rate remains at the present level. These policies are:

*Alternative A: Stop at one.* This is a strict version of a one-child policy. Since the one-child policy introduced in 1979 was never intended to be a permanent measure, we assume that under this option the total fertility rate equals 1 until the year 2000 and then rises to the replacement level of just above two births per woman in the year 2010.

*Alternative B: Stop at two.* Under this policy all couples are allowed to have two children with no restrictions on timing. This policy would reduce fertility below present levels since currently a proportion of births (about one-fifth in 1984) are of parity three and above. In fact, in the absence of third and higher order births, fertility would drop well below two births per woman because a significant number of couples would fail to have two births. Some couples may decide voluntarily to restrict their family to one child, whereas others would be limited to one or even no children because of involuntary factors such as sterility and marital disruption. In an earlier study we estimated that a strict stop-at-two policy would yield a total fertility rate of 1.76 births per woman (9).

*Alternative C: Stop at two and delay and space.* Delayed childbearing is a policy element that in our view is given less attention than it deserves. A partial explanation for this neglect is that the estimation of its effect on future population size requires special and rarely used projection techniques. The attractiveness of adding an increase in the average age at childbearing to any given family size limitation policy is that period fertility, in particular fertility in the period immediately after the policy is introduced, is substantially reduced, which in turn depresses future population growth.

In our analysis of a stop-at-two-and-delay-and-space policy (9), we proposed that such a policy be implemented by setting a minimum age at first birth and a minimum spacing interval between births. A variety of timing options were explored by combining minimum ages of first births ranging from 25 to 29 years with minimum spacing intervals of 4 and 6 years. Here we use just one of these variations, the 27-4 option, for comparison with the other alternatives. Twenty-seven is the minimum age at first childbearing that, when combined with 4-year spacing, would keep the population from ever reaching 1.2 billion. Introduction of a 27-4 policy in 1985 would produce total fertility rates of 0.44, 1.34, and 1.68, respectively, for the periods 1985 to 1990, 1990 to 1995, and 1995 to 2000. The very low fertility rates immediately after adoption of this policy are the short-term result of postponing many first and second births.

*Alternative D: Stop at two and space.* Option D allows all couples to have two children but requires ample spacing between them. Of the various alternatives, we have selected for inclusion here a stop-at-two-and-space policy that sets no restrictions on the timing of the first birth but sets a minimum age at second birth of 30 years. If initiated in 1985 this alternative would yield period fertility rates of 1.28, 1.59, and 1.72, respectively, for the periods 1985 to 1990, 1990 to 1995, and 1995 to 2000.

*Alternative E: A mixture of one- and two-child policies.* The first four alternatives assume uniform application of the policy to all areas of the country. Although this is useful for analytic purposes, a realistic policy must take into account regional variation in demographic, economic, and administrative conditions. As Chinese policy-makers have long recognized, ideally there would not be one national policy, but rather a set of regional ones whose combined effect would yield the desired reduction in national population growth. A detailed analysis of such a regionally diversified approach is precluded by the absence of the necessary data. Instead we consider a mix of just two policies: a permanent one-child policy in the cities and a stop-at-two-and-space policy in the rural areas and towns.

## Macrodemographic Effects of Alternative Policies

*Population size.* The goal of the Chinese government is to keep the population in the region of 1.2 billion by the end of the century. Controlling population growth is seen as essential in achieving the four modernizations (in agriculture, industry, defense, and science and technology) and in raising per capita income and consumption to moderate (*xiao kang*) levels. Population goals for the 21st century have not yet been officially established. At present there is much debate about what these goals should be and what criteria should be used to set them (10, 11). If current lines of reasoning prevail, the preference will be for continued population control (though at levels higher than one child per family) and smaller rather than larger total population sizes.

Table 1 presents the projected population sizes in the years 2000 and 2025 for the current policy and each of our five alternatives. These projections were made according to the standard cohort

component method (12). Each projection requires the specification of a set of input variables to describe the initial population distributed by age and assumptions regarding future trends in fertility, mortality, and migration. Briefly, migration was assumed absent and future mortality, as measured by life expectancy at birth, was in all projections set equal to the levels incorporated in the medium variant of the latest United Nations projection (13). According to this U.N. projection, life expectancy rises between the period 1980 to 1985 and 2020 to 2025 from 69.4 to 76.9 years for females and from 65.5 to 73.2 years for males. The most crucial input variable is the pattern of future fertility. The assumed trends in fertility for the different variants are summarized in Table 2 (14).

In 1980, China's population was just under 1 billion. The projections shown in Table 1 indicate that substantial further population growth will take place regardless of which policy option is chosen. However, although all the policies keep the population around or below 1.2 billion in 2000, there are clear differences among them in population growth thereafter. The most rapid future growth (to 1.44 billion in 2025) is projected by assuming continuation of the current policy, in other words in the absence of new birth control initiatives. The slowest growth (to 1.16 or 1.17 billion in 2025) results from the stop-at-one and the stop-at-two-and-delay-and-space policies (alternatives A and C). It should be noted that all projections except that for current policy assume perfect adherence to the rules of reproduction incorporated in each policy. In reality some slippage is inevitable, and it is therefore likely that actual population sizes will be somewhat higher than projected in Table 1.

*Population aging.* An issue of growing concern to China's policymakers is the effect of birth control measures on the size of the elderly population. Because of its low levels of social and economic development, China is not yet equipped to deal with the social security burdens that a rapid increase in the elderly would impose. As a consequence of high levels of mortality and fertility in the past, the proportion of the population age 65 and older was only 4.2 percent in 1975. The rapid reduction in mortality that started in the 1960s and the sharp decline in fertility during the 1970s will drastically change future age structures. Table 3 presents the projected percentage of the population of age 65 and older under the present policy and each of the five policy alternatives. If fertility is maintained at its current low level, there will be a dramatic aging of the population in which the percentage age 65 and over grows from 4.2 in 1975 to 7.0 in 2000 and 12.5 in 2025. Aging would be even more rapid under the other policies. The estimated proportion age 65 and over in 2025 ranges from 13.4 percent for alternative B, the stop-at-two policy, to 15.6 for A, the stop-at-one alternative.

## Microdemographic Effects

These policies also produce important differences on the level of the family. We discuss three social and economic effects: on the familial system of social security, on family economy, and on the economic status of women within the family. All of these are important areas of government concern, although the latter two have not been brought to bear on fertility policy. In a nutshell, China's leaders hope to preserve the rural family system of social security, increase family wealth and consumption, and enhance the status of women. To simplify our discussion, we assume that the majority of couples will have the maximum number of children permitted.

*Old-age economic support.* As in the past, in rural China today the family is the primary source of economic support for the elderly. Since the family line is passed along through males while daughters marry out, the obligation to support aged parents has traditionally

**Table 1.** Projected population size in 2000 and 2025 under current and alternative birth control policies.

| Policy   | Population size<br>( $\times 10^9$ ) |      |
|--|--------------------------------------|------|
|  | 2000                                 | 2025 |
| Current policy   | 1.24                                 | 1.44 |
| Alternatives   |                                      |      |
| A, Stop at one   | 1.09                                 | 1.16 |
| B, Stop at two   | 1.21                                 | 1.34 |
| C, Stop at two, delay and space (27-4)                                   | 1.11                                 | 1.17 |
| D, Stop at two and space   | 1.17                                 | 1.27 |
| E, Stop at one in cities; stop at two and space in rural areas and towns | 1.15                                 | 1.23 |

fallen to sons. Although today children of both sexes are legally obligated to support their parents, it is usually sons who carry out this responsibility. For old people without children, the collective provides the "five guarantees," namely food, clothing, housing, medical care, and burial expenses. Despite recent efforts to upgrade these guarantees, the provisions remain quite meager. Although alternative systems of old-age support (for example, savings and pensions) have begun to emerge in the past few years (15), in the short to medium term they are unlikely to provide viable alternatives to filial support.

In the cities the state provides pensions for the employees of state-sector organizations and enterprises who make up the great bulk (about three-quarters) of the urban work force (16). Thus, the problem of ensuring familial support for the aged is largely a rural one.

By differentially affecting the number of children and the probability of having a son, the fertility policies described above have different effects on the ability of China's rural families to support the elderly. This ability is most severely undermined by alternative A, the one-child policy, which allows only half the number of both sons and children considered necessary to support the older generation (in Chinese reckoning two people are required to support each elderly couple). Only slightly better is to retain current policy, which allows some couples in the countryside to have two children, but still prevents many rural and nearly all urban families from having more than one child. Some improvement occurs under alternative E, which eases the constraint on the number of children in the countryside. However, this alternative allows only one child in the

**Table 2.** Estimated total fertility rates, 1985 to 2025, under current and alternative birth control policies if initiated in 1985.

| Policy   | Total fertility rate |               |               |               |
|--|----------------------|---------------|---------------|---------------|
|  | 1985–<br>1990        | 1990–<br>1995 | 1995–<br>2000 | 2000–<br>2025 |
| Current policy                                 | 1.94                 | 1.94          | 1.94          | 1.94          |
| Alternatives                                   |                      |               |               |               |
| A, Stop at one                                 | 1.00                 | 1.00          | 1.00          | 1.87          |
| B, Stop at two                                 | 1.76                 | 1.76          | 1.76          | 1.76          |
| C, Stop at two, delay and space (27-4)         | 0.44                 | 1.34          | 1.68          | 1.69          |
| D, Stop at two and space                       | 1.28                 | 1.59          | 1.72          | 1.72          |
| E, Mix of one- and two-child policies          |                      |               |               |               |
| Stop at one in cities                          | 1.00                 | 1.00          | 1.00          | 1.00          |
| Stop at two and space in rural areas and towns | 1.28                 | 1.59          | 1.72          | 1.72          |

**Table 3.** Projected proportion of the population of age 65 and older under alternative birth control policies.

| Policy   | Proportion age 65 and older* (%) |      |
|--|----------------------------------|------|
|  | 2000                             | 2025 |
| Current policy   | 7.0                              | 12.5 |
| Alternatives   |                                  |      |
| A, Stop at one   | 8.0                              | 15.6 |
| B, Stop at two   | 7.2                              | 13.4 |
| C, Stop at two, delay and space (27-4)                                   | 7.8                              | 15.3 |
| D, Stop at two and space   | 7.4                              | 14.2 |
| E, Stop at one in cities; stop at two and space in rural areas and towns | 7.5                              | 14.5 |

\*In 1975, 4.2 percent of the population was age 65 and older.

cities. Here the small fraction of the work force in the collective and individual (or private) sectors lacks adequate nonfamilial sources of retirement income. The family's system of social security is least threatened by alternatives B, C, and D, which allow all families to have two children (the delay and spacing of births have little effect on the family's ability to support the elderly). Although some families—roughly one-quarter of the total—will end up with two daughters and no son, some peasants have already devised a workable solution to this problem. This solution calls for marrying one daughter out and marrying one daughter in. The daughter who “marries in” takes the place of the missing son, supporting her parents in old age, and then inheriting the bulk of their property when they die.

*Family economy.* Since the introduction of the agricultural responsibility system in the late 1970s, the Chinese peasant family has once again become the major unit of production in the countryside. In the cities, most families function only as units of consumption, but those in the small, “individual sector” of the economy made up of privately organized, service-oriented activities, also function as units of production.

Since 1979 China's one-child policy has hurt prospects for a family-based economy by drastically restricting the size of the family labor force. Although the differences between a one- and a two-child policy are relatively small, arguably they are large enough to have appreciable effects on the family economy. In the rural or urban private sector, a family with two children has a better chance of getting rich than a family with one child (17). With two children it is possible to employ strategies of family economic diversification and spatial dispersal (migration), which have been the keys to rising peasant incomes since 1979. These strategies are achievable even if one or both children are girls. (However, the benefits derived from daughters are of shorter duration since women generally become members of their husbands' families when they marry.) Families with two children can also achieve more of the organizational advantages of Chinese family firms. In this type of production unit, the larger the family size, the larger the labor force, the greater the degree of role specialization by sex and generation, the greater the ability to accumulate tangible resources, and the larger the social network for obtaining capital, labor, technology, and market information (18).

Given the economic advantages that two children provide to families in the private sector, it is clear that the policy alternatives that would promote the most flourishing private economy are B, C, and D, which permit all families to have two children. (Again, delaying and spacing children has little effect on this outcome.) Policy E brings somewhat fewer economic benefits since it limits urban families to one child. Current policy is more restrictive of private-sector productive activity than policy E. However, it is

considerably better than the strict one-child policy because it allows rural families with real difficulties, which in many places include having no son, to have a second child. Policy A, the strictly enforced one-child policy, greatly depresses private sector economic activity by paring the second-generation labor force down to a bare minimum.

*The position of women.* Since 1949 Chinese women have made major gains in legal rights, education, labor force participation, and the like. Despite these improvements in their rights and resources, however, the social and economic gap between men and women remains large (19).

The effects of birth control policies on women are multifaceted and complex, having sometimes diametrically opposed consequences in different areas of life. One aspect of the status of women and female infants that has been widely discussed (20) is their physical security, which has been threatened in times and places where strict enforcement of the one-child policy has prevented families from having the desired son. Here we consider two other effects that have received little attention in China or the West—the economic position of mothers and the socioeconomic prospects of daughters.

Because the great bulk of household and childcare work falls to women (21), birth limitation policies have a direct impact on the time available to women to work outside the household and to acquire new skills and training that will further enhance their income. Policy A, the strict one-child measure, gives women the most time to pursue such activities and thus improve their economic standing within their families. Indeed, in the more advanced agricultural areas many women are electing to have only one child because of the economic benefits this choice brings to themselves and their families (15, 22). Next best are the current policy and alternative E, in that order. These policies allow only one child for urban couples, but permit two children for some or all rural families. Policy C provides more economic advantages to women than the other two-child policies because it gives women two, three, or more years to gain training and work experience before the first child arrives. Between policies B and D, D has a slight advantage because the two children are born six or so years apart. Under policy B, assuming most couples have their second child within a few years of the first, the burden of childcare activities is particularly severe for a few years, leaving women much less time to engage in remunerative work (23).

Birth-planning policies also affect the socioeconomic prospects of daughters. Because sons are considered permanent family members and daughters marry out, Chinese families have tended to pin their hopes on sons, treating daughters as second-best family members. Though decreasingly, even today parental strategies emphasize use of daughters to advance sons through differential socialization, unequal investment in education, differential job allocation, and so forth (24, 25).

Given this situation, a policy that drastically reduces the number of children should improve the lot of daughters by removing the source of competition from the family. By this reasoning, the strict one-child policy should be most advantageous to daughters. Because their parents depend on them for all things sons provided traditionally, most importantly economic contributions and old-age support, daughters with no siblings can be expected to enjoy high levels of investment in their education and occupational preparation. Next best is current policy, followed by alternative E, which result in some one-child families, but also a substantial number of two-child families. The effects of the three two-child policies (B, C, and D) are largely indistinguishable, since parental investments in daughters are not likely to be affected by whether the children are delayed or spaced a few years. Under the two-child policies, daughters in

**Table 4.** Ranking of birth control policies by different criteria from 1 to 6 (best to worst). Some rankings are averaged.

| Policy   | Macrodemographic effects |                    | Microdemographic effects |                |                   |                              |                                       |               | Cultural acceptability |
|--|--------------------------|--------------------|--------------------------|----------------|-------------------|------------------------------|---------------------------------------|---------------|------------------------|
|  | Total population size    | Proportion elderly | Support of elderly       | Family economy | Position of women |                              |                                       | Combined rank |                        |
|  |                          |                    |                          |                | Physical security | Economic position of mothers | Socio-economic prospects of daughters |               |                        |
| Current policy   | 6                        | 1                  | 5                        | 5              | 5                 | 2                            | 2                                     | 2             | 5                      |
| Alternatives   |                          |                    |                          |                |                   |                              |                                       |               |                        |
| A, Stop at one   | 1                        | 6                  | 6                        | 6              | 6                 | 1                            | 1                                     | 1             | 6                      |
| B, Stop at two   | 5                        | 2                  | 2                        | 2              | 1.5               | 6                            | 5                                     | 6             | 1                      |
| C, Stop at two, delay and space (27-4)                                   | 2                        | 5                  | 2                        | 2              | 3                 | 4                            | 5                                     | 5             | 4                      |
| D, Stop at two and space   | 4                        | 3                  | 2                        | 2              | 1.5               | 5                            | 5                                     | 4             | 2                      |
| E, Stop at one in cities; stop at two and space in rural areas and towns | 3                        | 4                  | 4                        | 4              | 4                 | 3                            | 3                                     | 3             | 3                      |

families with one son and one daughter will probably continue to be discriminated against in educational and other investments. Where there are two daughters we can expect that parents will spread their investments somewhat more equally, but will invest more in the daughter they expect to remain with them after marriage.

### Cultural Acceptability

The observations of both Chinese birth-planning cadres and Western researchers suggest that the Chinese people have grown accustomed to the idea of state-directed birth planning (26). However, although the Chinese may no longer question the existence of a birth control policy, they do have strong views about what kind of birth control policy is more and less acceptable. Both directly, through their responses to survey questions, and indirectly, through their willingness to comply, Chinese couples have expressed three desires: for a son, for a first birth immediately after marriage, and for an interval between first and second children that is as short as possible but, at the outside, not much longer than 4 years.

As is well known, there remains a strong preference in China for sons. Surveys show that this preference is rooted primarily in the desire for support in old age, and only secondarily in such factors as the desire to carry on the family line, the need for labor power, and the like (27).

In prerevolutionary China marriage and childbearing were intimately connected: since virtually the sole objective of marriage was the production of the next generation, childbearing was initiated as soon after marriage as possible. Despite the apparent increase in love matches, at least in the cities (28), the idea that marriage and childbearing are one and the same remains firmly embedded in people's minds. The tenacity of this notion is due not only to the

persistence of tradition and pronatalist pressures exerted by the older generation. It is also related to the existence of a forceful birth control policy, which encourages people to have a child as soon as they are allowed on the worst-case assumption that the policy might become even more restrictive in the future. Whatever the reasons for this desire, Chinese scholars interviewed in late 1985 and late 1986 considered it virtually ineradicable, at least in the short term.

If delaying the first birth well beyond marriage borders on being culturally unacceptable, the notion of spacing between the first and second birth appears to be somewhat more congenial to Chinese couples. Chinese population specialists interviewed in late 1986 contended that, given a choice, rural couples would prefer to space only 1 or 2 years. The roots of this preference are complex, but include traditional beliefs that short birth intervals are associated with having children of the desired sex, as well as fears of a policy change. However, if required to space longer, the shorter the interval the better. Chinese demographers maintained that during the 1970s the population grew accustomed to the idea of leaving 4 years between children that was popularized as part of the *wan xi shao* birth control campaign. Their experience suggests that many couples now consider a 4-year gap between children an acceptable compromise between state and family needs. While it might be possible to stretch this to 6 years, in the view of many 8 years would be very difficult, and 10 or 12 years out of the question. The way they put it, a family with two children 10 to 12 years apart in age is like a three-generation family, with not one but two generation gaps to cope with. Also, couples fear that the longer the spacing, the greater the risk of sterility and other medical problems.

With these preferences, policy B ranks highest in cultural acceptability. This policy permits two children and requires neither delay nor spacing. The least tolerable is policy A, which allows all couples to have only one child, thus preventing about half the couples from

**Table 5.** Overall evaluation of birth control policies: ranking from 1 to 6 (best to worst).

| Policy   | Macrodemographic effects | Microdemographic effects | Cultural acceptability | Combined rank score | Overall ranking |
|--|--------------------------|--------------------------|------------------------|---------------------|-----------------|
| Current policy   | 6                        | 5                        | 5                      | 16                  | 6               |
| Alternatives   |                          |                          |                        |                     |                 |
| A, Stop at one   | 1                        | 6                        | 6                      | 13                  | 5               |
| B, Stop at two   | 5                        | 3                        | 1                      | 9                   | 3               |
| C, Stop at two, delay and space (27-4)                                   | 2                        | 2                        | 4                      | 8                   | 2               |
| D, Stop at two and space   | 4                        | 1                        | 2                      | 7                   | 1               |
| E, Stop at one in cities; stop at two and space in rural areas and towns | 3                        | 4                        | 3                      | 10                  | 4               |

having a son. Only slightly better than this is the current policy. Although it makes some concession to the desire for sons (29), it still prevents many couples from having two children, thus forcing many families to adapt to life without a son. The other three policies are difficult to rank, since each offends one of the main cultural preferences. Our judgment is that probably second best is policy D, which allows couples to have one child soon after marriage and a second 6 years later [in other words, at age 30; the mean age at first birth in China as of the early 1980s was 23.6 years (9)]. If the population could become habituated to the notion of spacing 4 years in the 1970s, it could perhaps also become accustomed to a 6-year spacing interval in the 1980s. Third in acceptability is policy E. Although this program permits only one child in the cities, indications are that the majority of the urban population is willing to limit families to one child (30). Better only than current policy and the uniform one-child policy is alternative C, the 27-4 variant of the two-child-delay-and-space policy. Despite its considerable macrodemographic benefits, the 27-4 policy requires couples to put off childbearing for an average of 2 or 3 years after marriage, a delay few couples seem inclined to risk.

## Overall Evaluation

By combining the separate evaluations presented above, we can obtain an overall assessment of the relative advantages and disadvantages of each of the policies in the areas that we have discussed (Tables 4 and 5). In these tables we rank the policies from 1 to 6 (best to worst) according to the degree to which they promote stated policy goals in the relevant areas. Where two or more policies share the same rank, we averaged the rankings and assigned each policy the same average number. Although judgments in some of these areas embody a large dose of informed speculation, such an exercise can yield a rough guide to some of the merits and demerits of various policies.

A quick glance at Table 4 reveals the existence of large trade-offs between different kinds of goals. Policies that yield a smaller total population produce a larger proportion of the elderly (for example, A and C). Policies that advance the economic position of women do not ensure their physical well-being (A, E, and current policy). Policies that achieve the best population size results are among the least acceptable culturally (A and C). Policies that enhance the economic and social security capabilities of the family do little to improve the economic status of mothers and daughters (B, C, and D).

Table 5 gives an overall ranking of the policies. Although the factors listed in Table 4 could be weighted any number of ways, here we give each type of factor—macrodemographic effects, microdemographic effects, and cultural acceptability—equal weighting. (The macrodemographic ranking gives greater weight to a policy's effect on total population size because it is the more important variable and because the difference among policies in their effects on the share of the elderly is relatively small.) The results of this procedure, given in the last column of Table 5, indicate that policy D ranks highest, followed by alternatives C, B, E, A and, finally, current policy.

The most striking result is the gap between current policy and the strict one-child option (A) on the one hand, and all the rest of the policy alternatives on the other (see the combined rank score). By these criteria, the least desirable strategy is to retain current policy. In none of the three areas considered does current policy rank higher than last or next to last. Overall, the most advantageous policies are the two-child policies that entail spacing (D) or delaying and spacing (C). Only slightly less beneficial in the areas considered here are the two-child, no conditions alternative (B) and the mixed policy allowing one child in the cities and two children elsewhere (E). In short, this suggests that there are several alternatives to the current policy that might perform as well as, or even better than, the present policy in a range of social, economic, and demographic areas.

## REFERENCES AND NOTES

1. A. J. Coale, *Rapid Population Change in China, 1952-1982* (National Research Council, Washington, DC, 1984). The total fertility rate equals the average number of births that women would have if they were exposed throughout their reproductive lives to the age-specific fertility rates prevailing in a particular year.
2. C. P. Wu, *Renkou Yanjiu (Population Research)* 1, 10 (1986). Reports of significant underregistration of births in the rural areas suggest that this official figure underestimates the actual fertility level.
3. S. Greenhalgh, *Popul. Dev. Rev.* 12, 491 (1986).
4. *Jihua Shengyu Ban [Birth Planning Edition (of Health Gazette)]* 128, 1 (13 June 1986); and interview with State Family Planning Commission Director Wang Wei by S.G. in November 1986.
5. *Renmin Ribao (People's Daily)*, 4 December 1986, p. 1.
6. J. W. Qie, *Renkou Yanjiu* 4, 3 (1985); W. Wang, *ibid.* 1, 2 (1986). Also of increasing concern is the effect of the one-child policy on the education of single children.
7. The Han Chinese make up about 93 percent of China's population. Little is known about the cultural acceptability of the birth-planning policy to China's 55 ethnic minority groups.
8. In some localities remarried couples in which one spouse has two children from a previous marriage and the other has no children are allowed to have a third child [see S. Greenhalgh (3)]. Such cases, however, are extremely rare.
9. J. Bongaarts and S. Greenhalgh, *Popul. Dev. Rev.* 11, 585 (1985).
10. Y. J. Chen, J. T. Liu, Q. W. Yu, *Renkou Yanjiu* 4, 9 (1985).
11. C. P. Wu, *ibid.* 5, 2 (1985).
12. F. C. Shorter, *Computational Methods for Population Projections: With Particular Reference to Development Planning* (Population Council, New York, 1978).
13. United Nations, *World Population Prospects as Assessed in 1982* (United Nations, New York, 1985), table 2.
14. For details on projection methodology see J. Bongaarts and S. Greenhalgh (9).
15. B. C. Ling and E. G. Gao, *Renkou Yanjiu* 4, 20 (1985).
16. State Statistical Bureau, *Statistical Yearbook of China* (Economic Information and Agency, Hong Kong, 1984).
17. Given the high costs of education and of raising a child in the urban areas generally, families in the state sector may be better off with only one child.
18. S. Greenhalgh, in *Contending Approaches to the Political Economy of Taiwan*, E. A. Winckler and S. M. Greenhalgh, Eds. (Sharpe, Armonk, NY, in press).
19. M. Wolf, *Revolution Postposed: Women in Contemporary China* (Stanford Univ. Press, Stanford, 1985).
20. E. Croll, *Chinese Women Since Mao* (Sharpe, Armonk, NY, 1983).
21. ———, *The Family Rice Bowl: Food and the Domestic Economy in China* (Zed, London, 1983).
22. M. R. She and B. L. Shao, *Renmin Ribao*, 15 July 1985, p. 3.
23. Another advantage of the two-child policies is that with two children, the older can reduce the childcare work load on the mother by watching over the younger child.
24. S. Greenhalgh, *Popul. Dev. Rev.* 11, 265 (1985).
25. B. Hooper, *Modern China* 10, 317 (1984).
26. Based on discussions between S.G. and Chinese population specialists held at Chinese demographic research and training centers in November and December 1985 and November and December 1986 and M. Wolf's data (19).
27. L. R. Zhao and C. Z. Zhu, *Renkou Yanjiu* 4, 47 (1983).
28. M. K. Whyte and W. L. Parish, *Urban Life in Contemporary China* (Univ. of Chicago Press, Chicago, 1984).
29. In many rural areas couples whose first child is a girl may have a second child (3).
30. This view was widely held by demographers interviewed in late 1985 and late 1986.