Taiwan's Family Planning Program

Large-scale family planning programs may be more effective than is sometimes believed.

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More than half of the inhabitants of the developing world probably live in countries that have some kind of national family planning program (*1*). In several of the smaller populations that have such programs—Hong Kong, Korea, Malaya, Singapore, and Taiwan in Asia and several islands of the West Indies—births rates definitely are declining (*2*).

A lively debate is going on concerning the role, present and future, of large-scale family planning programs both in the small populations able to demonstrate declining birth rates and the larger populations for which declines in birth rate are still only a hope rather than a demonstrable fact (*3*). Reservations on the part of the critics about the influence of national family planning programs are varied, but the following views are probably among the most important.

1) In concentrating on preventing unwanted births, programs set a goal whose achievement still will leave the rate of population growth much too high—that is, well above zero.

2) The programmatic successes of small, rapidly developing countries cannot be repeated in such crucial large populations as those of India or Indonesia.

3) Any declines in birth rate in countries like Taiwan or Korea are a result of general, institutional developments rather than of family planning programs.

4) Even the reported thousands of insertions of intrauterine devices (IUD's) in Taiwan and Korea give only an illusion of success, because of the following. (i) The women who accept the device are, in general, women of high parity (*4*), who are too old to have many more children anyway. (ii) The programs are "skimming the cream"; acceptance rates must fall when the small, highly motivated high-parity group is exhausted. (iii) Discontinuation rates for the IUD's inserted (half or more of the women fitted with the IUD for the first time discontinue its use within 2 years) are so high that the result is little protection, little motivation for continued contraception, and little reduction in fertility. (iv) The net result is that few births are averted even for participants in these mass IUD programs. At best this means that use of the IUD is a poor method for mass family planning programs. The even gloomier interpretation is that such results are inevitable and that even less satisfactory outcomes might result from stress on alternative methods. Either the method is wrong or the population is just not ready.

This last set of arguments against the claimed success of the Taiwan and Korean programs is, in the aggregate, an argument that the programs are unsuccessful because they do not even enable those who participate to prevent any substantial number of births.

It is with this last set of issues that this article is concerned. We believe that there is substantial evidence for Taiwan, and some less completely analyzed evidence for Korea, which establishes the success of the programs, at least in the sense that (i) they have reached a part of the population for which the expectation of future births, in the absence of contraception, is high; (ii) as time goes on, they are reaching more rather than fewer couples who are still in the first half of their reproductive period; (iii) a substantial proportion of those who participate are still practicing birth control and preventing many births some years after having entered the program; (iv) the women participants are having many fewer children after entry into the program than they had previously, and many fewer than they might be expected to have if their fertility is about average for married women in Taiwan.

This article is devoted to a selective documentation of these points.

A Truism Rejected

Taiwan's family planning program began in early 1963 in the area of one of its principal cities, Taichung. At that time, with a birth rate of 36.3 per 1000 population and a death rate of only 6.1, Taiwan's population of 11.9 million was growing at a rate of 30 per 1000 and was expected to double in less than 24 years. Encouraged by the success of efforts in Taichung (*5*), the family planning leadership initiated a program to bring family planning to the whole province of Taiwan in early 1964 with the intention of reducing the province's growth rate from 3 percent per annum to 2 percent by 1971. A more immediate goal was the insertion of 600,000 IUD's within 5 years, by June 1969. At the end of 1966, achievement and target were still close together, with approximately 260,000 IUD's inserted. Not sponsored by the provincial government, Taiwan's family planning program is administered through an independent organization, the Maternal and Child Health Association. The Provincial Department of Health provides family planning information and education. The Taiwan Population Studies Center, responsible for evaluating the province-wide family planning program, each year conducts a number of field surveys, data from several of which are utilized in this article.

Korea's government-sponsored family planning program, which began achieving large-scale results in 1964, is aimed at reducing the country's annual rate of increase from 3 percent to 2 percent by 1973. Targets have changed with experience, but in 1966 the aim was to build up to 1.8 million IUD insertions (to give 1.0 million women retaining and wearing IUD's, in addition to meeting quotas for vasectomies and use of traditional contraception. By the end of 1966, some 737,000 IUD's had been inserted (*6*).

Two cardinal assumptions in the ar-

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gument that Taiwan's and Korea's IUD programs have had little direct impact are (i) that rates of acceptance of the IUD increase progressively with the number of births in excess of the number desired, and therefore with increasing age and parity, and (ii) that the older the woman is, the smaller is the net number of births averted. The second generalization appears almost trivially obvious. The older woman has fewer years of childbearing remaining. Her fecundity is lower by virtue of her age. Because she has had many more children than she wants, she is more likely than the younger woman to have been practicing some other method of birth control, and of course, in cases where the IUD is substituted for another method, the net number of births averted is smaller than it would be if the IUD were replacing no birth control.

However, three points are being overlooked.

First, the number of births averted by use of an intrauterine device depends in part on how long the device is retained, and typically IUD's are retained much longer by older women than by younger women. Illustrative data for Taiwan are given in Table 1. The differences in retention are large: over twice as many women aged 35 to 39 as women aged 20 to 24 retain the device 2 years or more.

Second, since the period of retention is short for young women, any advantage, in terms of number of births averted, that they would have because of the prospect of more childbearing years counts for little. If women are retaining a device only 18 to 24 months, on the average, it matters little, from the standpoint of number of births averted, that they have 15 years of childbearing remaining instead of 5 or 10.

Third, while the participating women are selected for above-average interest in family planning, they are also selected for higher-than-average fecundity, and this edge in fecundity increases very substantially with advancing age, as Table 2 shows. Nor is this result entirely surprising. The woman under greatest demographic pressure is one who has all the children she wants; who has recently borne a child, demonstrating her continued fertility; and who knows she is likely to have additional children unless she takes appropriate action. Accordingly, in the program there is a selection not only against low fertility but in favor of women who have recently borne children. This latter selection is important because with advancing age the proportion of sterile couples increases. As one ascends the age scale the proportion of couples able to have children grows smaller and smaller, and participants in the IUD program tend to be drawn from this group. Thus the age-specific birth rates for all married women give a misleading picture of the potential fertility of IUD acceptors. The potential fertility of the older acceptors, even when the fact that many of them are substituting the IUD for other means of birth control is taken into account, is appreciably higher than would be indicated by average age-specific birth rates for married women. Note, for example, in Table 2 that during the 3 years prior to insertion of the IUD, the acceptors had higher fertility rates at each age than the average married woman 5 years younger.

The net number of births averted per IUD inserted depends essentially on the length of time the device is retained and the potential fertility of the women during the period of retention. As we have seen, older women in the program have an advantage over younger ones with respect to retention but a disadvantage with respect to potential fertility in the absence of the IUD, since the above-average fecundity for which they were selected cannot wholly compensate for the effects of aging upon fecundity or the greater likelihood that the IUD is being substituted for another method. According to the medium estimates of a recent analysis, summarized in Table 3, the net numbers of births averted per IUD inserted are fairly similar among 5-year age groups within the age range 20 to 39 years, though the most favorable combinations of potential fertility and retention of the device, from the standpoint of averting births, appear to coincide with the two intermediate age groups of Table 3 (25–29 and 30–34 years). The longer retention of women in the oldest age group is not quite sufficient to counterbalance their lower potential fertility, which is decreased still further by the more frequent substitution of the IUD for other methods, so they are averting slightly fewer births than women of intermediate age. However, women in the youngest age group, with their high potential fertility, are retaining the device so briefly that they, too, are averting slightly fewer births per device inserted than women of the intermediate age groups. Thus, exception may be taken to one of the pessimists' main tenets. The number of births averted per IUD accepted does not decrease rapidly as the age of the acceptor increases. Rather, the relationship is curvilinear, with appreciable impact at all ages and the greatest im-

Table 1. Cumulative net termination rates, in terminations per 100 women at the end of 24 months of IUD use, by type of termination and characteristics of the user. Standard errors are given in parentheses. [From Taiwan Province-wide 1966 IUD Follow-up Study, conducted by the Taiwan Population Studies Center with technical consultation by the University of Michigan Population Studies Center]

Characteristics at time of first IUD insertion	Number of women	Type of termination			
		Pregnancy	Expulsion	Removal	All types
Age					
Under 24	519	11.9(2.3)	16.6(2.6)	48.3(3.5)	76.8(2.9)
25–29	1589	11.9(1.2)	13.6(1.3)	43.2(1.8)	68.7(1.7)
30–34	1579	11.0(1.1)	9.3(1.0)	37.9(1.7)	58.3(1.7)
35 and over	1339	6.9(0.9)	4.4(0.7)	32.8(1.7)	44.1(1.8)
Number of live births					
Two or less	606	8.7(1.8)	16.3(2.4)	51.8(3.2)	76.8(2.7)
Three	1052	12.7(1.5)	13.0(1.5)	42.6(2.2)	68.2(2.1)
Four	1143	9.4(1.2)	9.8(1.2)	40.5(2.0)	59.6(2.0)
Five or more	2225	10.0(0.9)	7.3(0.7)	33.8(1.4)	51.1(1.4)
Reason for using IUD					
Spacing children	646	10.7(2.0)	16.1(2.3)	56.4(3.1)	83.3(2.3)
Limiting family	4372	10.2(0.6)	9.2(0.6)	36.9(1.0)	56.4(1.0)

Table 2. Comparison of fertility of IUD acceptors in the Taiwan program 3 years prior to initial acceptance of the IUD with fertility of married women in Taiwan in 1963–64. [From Chow and Hsu (*10*, Table 7)]

Age class	Births per 1000 years of marriage		
	IUD acceptors	Married women* 1963–64	Ratio (col. 2): (col. 3)
20–24	551	430	128
25–29	509	379	134
30–34	389	241	161
35–39	266	143	186
40–44	179	65	275
Average	374	243	154

* Average of the 1963 and 1964 rates.

pact at the middle ages, roughly 25 to 34 years.

The foregoing analysis of births averted refers to the effects of only the first IUD inserted. It does not take into account either reinsertions or changes in subsequent birth control practice which are associated with acceptance in the program, as discussed below. Since these additional protections are generally associated with higher parity and greater age, the advantages for IUD acceptors, in terms of births averted, are even greater than the data of Table 3 indicate, and they increase differentially with age and parity.

Characteristics of Acceptors

As mentioned above, a second basic assumption in the argument that the IUD programs have had little direct impact is the assumption that motivation to adopt family planning methods is proportional to the number of children in excess of the desired number, and that therefore acceptance rates rise progressively with increasing age and parity. In fact, however, Taiwanese and Korean women are in general considerably younger, and their families are smaller, at the time they accept the IUD than the theories of the pessimists would lead one to expect. As Table 4 shows, 50 to 60 percent of the Taiwanese and Korean women are in the favorable age range of 25 to 34 years. And as shown in Table 5, there is a similar concentration of entries for parities 3 to 5. Eighty-five percent of the Taiwanese acceptors report having adopted the IUD to stop family growth rather than to space their children, and this proportion has remained constant throughout the period 1964 to 1967.

Plainly, IUD acceptors are not, as the pessimists see them, a small group of older women who already have many children and who accept the IUD belatedly, but, rather, a much larger and highly fertile group. They are women who have had all the children they want but who are still young enough and fertile enough to expect to have more unless they take preventive action. These women are realistic. They are motivated by a recent history of fertility which makes additional, unwanted births very probable.

The argument that the IUD acceptors are too old and already have too many children to be likely to have any more is invalid, then, on several counts. First, in age these women are bunched toward the middle rather than the end of the childbearing span. Second, they are not average women; they are women whose recent high fertility indicates a probability of some remaining years of above-average fertility. Third, the fact that almost all of the 22-percent decline in Taiwan's birth rate between 1959 and 1965 resulted from falling birth rates among women 30 years of age or older indicates that the reduction of fertility among "older" women is significant for general fertility decline (*7*).

It is difficult to understand why some critics of the family planning programs insist that these programs will fail if they reach mainly women with large numbers of children. A large part of the difference in the birth rates of less-developed and more-developed countries arises precisely from the fact that in the less-developed countries birth rates are higher for women in the middle and later portions of the reproductive period, and many more of the births are sixth, seventh, and higher-order children. In summarizing these facts in a recent paper (*8*), Simon Kuznets points out that differences of age-specific birth rates in the age-range 25 to 34 account for about half of the difference in birth rates between the less-developed and the more-developed

Table 3. Number of births averted per first IUD inserted for three assumptions concerning potential fertility and for various age groups. [From Potter (*11*)]

Assumption concerning fertility in the absence of the IUD	Births averted by age group				
	20–24	25–29	30–34	35–39	All ages
Maximum (no family planning)	0.54	0.80	1.12	1.10	0.94
Medium	.54	.68	0.72	0.54	.64
Conservative (substitution of other contraceptive method by all participants)	.47	.51	.46	.24	.43

Table 4. Percentage distribution of IUD acceptors by age group.

Year	Median age	Age group					
		Under 25	25–29	30–34	35–39	40 or over	Unknown
		*Korean national program**					
1964	34.6	2	16	35	33	14	
1965	34.2	2	18	35	30	14	
		Taiwan province-wide program†					
1964	32.7	6	25	34	25	9	1
1965	32.4	7	26	33	23	9	1
1966	32.0	9	28	32	21	9	1
1967 (first half)	31.8	9	29	32	20	9	1

* Data from *National Intra-uterine Contraception Report* (Ministry of Health and Social Affairs, Republic of Korea, 1967), p. 44, Table 3. † Data from *Joint Monthly Report, May and June, 1967* (Provincial Department of Health, Maternal and Child Health Association, and Taiwan Population Studies Center, Taiwan, 1967), appendix, p. 6, Table 2.

Table 5. Percentage distribution of IUD acceptors, by number of living children.

Year	Number of living children						
	Median	Two or fewer	Three	Four	Five	Six or more	Unknown
		*Korean national program**					
1964	4.6	8	16	24	25	28	
1965	4.4	10	17	25	25	23	
		Taiwan province-wide program†					
1964	4.2	11	20	25	19	22	4
1965	4.1	13	20	24	18	21	5
1966	3.9	15	22	24	16	18	5
1967 (first half)	3.9	16	23	24	16	17	4

* Data from *National Intra-uterine Contraception Report* (Ministry of Health and Social Affairs, Republic of Korea, 1967). † Data from *Joint Monthly Report, May and June, 1967* (Provincial Department of Health, Maternal and Child Health Association, and Taiwan Population Studies Center, Taiwan, 1967), appendix p. 6, Table 4.

countries, and that one-quarter of the difference in the birth rates results from the higher birth rates at ages 35 and over for the less-developed countries. He points out, further, that about half of the difference in the birth rates of the two groups of countries is a result of more births of the fifth or higher orders in the less-developed countries.

The age and parity groups that are being reached at present in programs such as those of Taiwan and Korea are appropriate if the goal is to bring the population growth of such countries to the lower levels of the more-developed countries. It is true, of course, that if the goal is to achieve a zero rate of growth, then both the more- and the less-developed countries will have to reduce birth rates in the younger age groups, too. Birth rates certainly will fall more rapidly if birth control is begun at earlier ages. However, we see little merit in advising the developing countries that, unless they can go all the way to zero growth rates now, any efforts they make are of no value. Insofar as the new programs are reducing the numbers of higher-order children born to older women, their result is a recapitulation of the way in which birth rates fell in the Western countries.

It is not true, either, that the women who participate in the IUD program are predominantly the better-educated women. In the period 1964–67 approximately 40 percent of the participants had no education and an additional 45 to 48 percent had only primary education. From 1964 through 1967, the median educational level of the participants fell. It is true that acceptance rates were somewhat higher for the better-educated women than for the poorly educated women, but the number of poorly educated women is so large that, in the mass, this is the group from which most of the acceptances have come. Data on the educational status of users of birth control methods before the beginning of the organized program do, indeed, indicate a concentration among better-educated women. When couples had to find out about family planning on their own it was the better-educated who had the initiative and resources to find a solution. However, with the organized program the acceptances have come predominantly from the poorly educated groups that are supposed to be both important and hard to reach. These findings from Taiwan are replicated in the reports from Korea.

Table 6. Acceptance of IUD's by Taiwanese women, by age and number of living children, for three calendar years. [From Chow and Hsu (*10*, Tables 1 and 3)]

Characteristic	Percentage of married women accepting IUD			Index 1966/1964
	1964	1965	1966	
Number of living children				
0	0.1	0.3	0.3	300
1	.5	1.4	2.1	420
2	1.8	4.4	5.7	317
3	3.7	8.0	9.5	257
4	4.2	8.4	9.3	221
5 or more	3.8	7.5	7.5	197
Wife's age				
Under 25	1.0	2.6	4.6	460
25–29	3.1	6.8	7.7	248
30–34	4.6	9.2	9.4	204
35–39	3.9	7.6	6.8	174
40 or more	1.7	3.6	4.4	259
Total*	3.0	6.3	7.0	233

*The figures in the bottom row represent weighted averages.

The relatively large size of the target group in the IUD program also helps to explain another main finding. The program in Taiwan has been operative for 3½ years, and there is no sign of decline in the rates of IUD acceptance. As the data of Table 6 show, acceptance rates have increased or at least have remained stationary in each 5-year age group. Actually, several circumstances besides the large size of the pool of potentially interested couples have contributed to these results. (i) The cumulative acceptances of the IUD have not yet reached 30 percent in any age group, while more than 50 percent of all wives say they want no more children. (ii) Every year there are new entrants into the pool of women who have a problem of family limitation. (iii) IUD acceptances come partly from among those who are switching from other methods. Of course, such a switch does not necessarily increase the net number of births prevented, and it may be partly or entirely offset by switches from use of the IUD to other methods.

Actually, even stationary rates of acceptance mean rising rates among those who are eligible—that is, those who have not already participated in the program. For example, 16 percent of the eligible women joined the program between 1964 and 1966. Therefore, if the acceptance rate for 1967 is the same 7 percent as for 1966, this really represents acceptances by 8.5 percent of those who have not already accepted.

Importance of Discontinuation Rates

Original expectations for the IUD, being unrealistically high, have led many persons to underestimate what is being accomplished with this method. Rates of discontinuation of IUD use in Taiwan have been systematically measured. Wishful thinking that could have survived in the absence of measurement has been undermined. In this sense, the Taiwanese and Korean IUD programs have been the victims of their own precision. However, insofar as comparison is possible, the effectiveness of the IUD in mass programs compares favorably with that of other contraceptives. One must admit that there is a lamentable lack of follow-up data on other methods to yield ideas on the period of use. The existing scraps of evidence for Taiwan (see Table 7) indicate that the period of use for the IUD is about the same as that for the Ota ring but considerably longer than that for pills or traditional contraceptives. Discontinuation rates for the pill seem to be about as high in Korea as in Taiwan, but it must be stressed that the preliminary evaluations from Korea are not decisive, because the samples

Table 7. Cumulative termination rates, in terminations per 100 initial acceptors of the IUD, the Ota ring, pills, and traditional methods.

Month since first acceptance	Loops		Ota ring §	Pills*		Traditional methods, Nantou ‖
	Taichung†	Province-wide‡		Mail order	Province-wide‡	
6	21.8	26.6	25.6	40.1	47.8	42.6
12	34.4	39.5	45.6	58.0		60.8
18	43.6	50.3				71.5
24	51.3	59.6				77.9

* See Chow and Hsu (*10*), Table 25; "Interim Report of Survey and Research Projects," *Taiwan Population Studies Center Pub. No. 2* (1967). † Taichung Medical Follow-up Study. ‡ Taiwan Province-wide 1966 IUD Follow-up Study. § Ota-ring users recruited at Taiwan Population Studies Center clinic; see Chow and Hsu (*10*), Table 26. ‖ From Chow and Hsu (*10*), Table 25.

are small and important fractions of the respondents are former users of the IUD. There is no cause as yet, then, for regretting that in the Taiwanese and Korean programs first priority was accorded the IUD rather than another of the existing methods, though the need to give attention in a mass program to more than one method must be admitted.

The implications, for users of the IUD, of the published rates of discontinuation are less alarming than the pessimists insist they are. These rates are meaningful only in the larger context of what happens to the user who discontinues use of the device. According to the data of Table 8, 30 months after the initial insertion, only about a quarter of the women retain the original device. However, during the same period, only 15 percent of the original group have borne a child, instead of the nearly 50 percent to be expected if no birth control were practiced. Obviously, the women who have ceased using the IUD are making extensive use of other procedures. In the most-cited figures on discontinuation, reinsertions are not taken into account. In Taiwan, 30 or more months after the first insertion, only 25 percent of the Taiwanese women had the *first* device in place, but 45 percent did have an IUD in place. An additional 28 percent had been sterilized or were using some other contraceptive, so that, even after 30 or more months, 73 percent were protected by sterilization or contraception. In addition to the protection provided by contraception, many were protected by abortion. Of all the pregnancies experienced by women who had terminated use of the IUD, more than 50 percent were aborted. The figure of 73 percent for women who, 30 months after original insertion of the IUD, were using some method of contraception or had been sterilized may be contrasted with 27 percent who had used contraception at any time before insertion of the first IUD.

In short, we can say that a very substantial proportion of the couples in the program are protected in one way or another 30 months after insertion of the first IUD.

Table 8. Distribution of IUD acceptors according to current family planning status, by period since first insertion, for women interviewed in the Taiwan Province-wide 1966 IUD Follow-up Study.

Live birth since first insertion	Period, in months, since first IUD insertion (numbers of women in parentheses)					
	6–11 (1097)	12–17 (1095)	18–23 (1402)	24–29 (971)	30+ (461)	Total (5026)
			Original IUD still in place			
No	65.3	55.9	48.4	39.4	25.8	49.9
			Another device in place			
No	2.8	5.1	7.7	13.5	16.5	8.0
Yes	0.0	0.1	0.8	0.9	2.8	0.7
			Using other contraceptive, or sterilized			
No	10.6	12.2	16.5	18.8	23.4	15.4
Yes	0.0	0.4	1.0	2.4	4.1	1.2
			Using no contraceptive, and not sterilized			
No	21.1	23.6	19.7	18.1	18.4	20.4
Yes	0.2	2.7	5.9	6.8	8.9	4.4

Table 9. Age-specific fertility rates for (i) Taiwanese IUD acceptors after first insertion of the IUD, (ii) all Taiwanese married women, and (iii) IUD acceptors prior to insertion of the device.

Age of the acceptors in 1965	Birth rates per 1000 woman-years of exposure			Change (%) in the fertility of acceptors after IUD insertion, relative to expected fertility‡	
	Acceptors after IUD insertion*	All Taiwanese married women, 1965	All Taiwanese married women, with rate adjusted for the higher fertility of acceptors†	Minimum	Maximum
15–19	410	390	468	+5	−12
20–24	201	447	568	−55	−64
25–29	128	368	497	−65	−74
30–34	62	210	353	−70	−82
35–39	31	109	220	−71	−86
40–44	21	47	140	−56	−85
45–49	0	8	24	−100	−100
Total §	77	240	352	−68	−78

* The values are based on the actual period of exposure after IUD insertion less 9 months to allow for the fact that a woman is usually not pregnant at the time of IUD insertion and therefore cannot bear a child for 9 months. † The values were obtained by multiplying the figures in column 3 by the following ratio: (acceptors' birth rate for 3 years preceding IUD insertion)/(1964 birth rate for all Taiwanese married women). ‡ The assumption is that the rates in column 3 would be the minima and those in column 4 would be the maxima for the IUD acceptors. The relation of the actual rates to the assumed minima and maxima may be seen from a comparison of column 2 with columns 3 and 4. § The figures in the bottom row represent weighted averages, the weights being the number of acceptors in each age class.

Births Prevented

The birth rates for women participating in the IUD program in Taiwan (*9*) have fallen sharply since their initial participation (Table 9); these rates are between 68 and 78 percent below the rates that would have been expected had there been no IUD program. The figure 68 percent is based on the conservative assumption that the birth rates for these women might otherwise have been those of the average Taiwanese married woman of their own age group. The figure 78 percent is based on recognition that the women participating in the program are more fecund than the average woman of their age group, and that their fecundity, had it not been for use of the IUD, would have continued to exceed the average for their age group by the same margin as it did in the 3 years prior to such use.

We must not claim too much. We are not asserting that these reductions in births were caused by the IUD program. After all, many of these women probably would have practiced some kind of birth control even had there been no program. Birth control practice was increasing before the program began, and birth control outside of the IUD program has been increasing since. What we are asserting with some confidence is that the several hundred thousand participants in the Taiwan program have, since entering the program, dramatically increased their birth control practice and decreased their fertility. This finding refutes the argument that the program is trivial because the participants are too old, too few, or too poorly motivated to practice con-

traception with any persistence or with any significant effect on fertility.

Whether part or all of this change would have occurred had there been no IUD program is a complicated question. We hope we have established that something has happened which needs explanation, and that taking the next step in analyzing the effects of family planning programs is worthwhile.

The potential importance of the family planning programs in implementing policies of population control is recognized generally. However, much of the discussion and many policy decisions are being made without factual assessment of the operation of such programs. The data presented from the Taiwanese and Korean programs illustrate how systematic evaluation may resolve issues, or at least narrow the range of speculation.

References and Notes

1. In making this statement we assume that there is a family planning program on the mainland of China.
2. D. Kirk, "Natality in the developing countries: Recent trends and prospects," paper presented at the University of Michigan Sesquicentennial Celebration, Ann Arbor, November 1967.
3. Relatively optimistic statements appear, for example, in B. Berelson, "National family planning programs: Where we stand," paper presented at the University of Michigan Sesquicentennial Celebration, Ann Arbor, November 1967; D. Bogue, in *Alternatives for Balancing World Food Production Needs* (Iowa State Univ. Press, Ames, 1967), pp. 82–83; R. Freedman, in *Family Planning and Population Programs*, B. Berelson *et al.*, Eds. (Univ. of Chicago Press, Chicago, 1966), pp. 811–825; D. Kirk, *Annals* **369**, 48 (Jan. 1967); F. Notestein, *Foreign Affairs* **1967**, 167 (Oct. 1967). Less sanguine views appear in K. Davis, *Science* **158**, 730 (1967); P. Hauser, *Demography* **4** (July 1967); W. Petersen, in *Asia's Population Problems*, S. Chandrasekhar, Ed. (Praeger, New York, 1967), pp. 204–205.
4. *Parity* is a technical term meaning parous condition, number of children previously borne.
5. B. Berelson and R. Freedman, *Sci. Amer.* **1964**, 29 (May 1964); R. Freedman and J. Y. Takeshita, *Eugenics Quart.* **1965**, 233 (1965); L. P. Chow, *Population Studies* **1965**, 155 (1965).
6. S. Keeney provides an authoritative comparison of the Korean and Taiwanese programs at three different dates, in *Studies in Family Planning No. 6* (March 1965); *Studies in Family Planning No. 10* (Feb. 1966); *Studies in Family Planning No. 19* (May 1967).
7. R. Freedman and J. Muller, *Population Index* **33**, 4 (Jan.–Mar. 1967).
8. S. Kuznets, "Economic aspects of fertility trends in the less developed countries," paper presented at the University of Michigan Sesquicentennial Celebration, Ann Arbor, November 1967.
9. The data presented in this section are drawn entirely from the Taiwanese study. However, partially analyzed data from the Korean national program show very similar results, so far as the analysis has gone.
10. L. P. Chow and T. C. Hsu, "Experiences with the Lippes loop in Taiwan," paper presented at the Regional Seminar of the Western Pacific Region of the International Planned Parenthood Federation, Hong Kong, 1967.
11. R. G. Potter, "Estimating births averted in a family planning program," paper presented at the University of Michigan Sesquicentennial Celebration, Ann Arbor, November 1967.

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China at 1000 B.C.: A Cultural Mosaic

Study of early Chinese civilization requires the delicate details of local culture histories.

Judith M. Treistman

Thus far in sinology there have been two major contexts in which the study of prehistory and the beginnings of civilization have developed; both have tended to obscure the fragmented nature of China's cultural past. The first context is Chinese history itself, probably the most self-conscious history known from early times anywhere in the world. In its ethnocentricity Chinese documentary history is "universalistic"; the absence of relativism has meant that cultural phenomena identifiable as "Han" are applied everywhere as historical explanation. Most of our knowledge of early China comes from Han historians, from scattered references to events and personalities, mythology, and traditions that have been selected (and at times distorted) to serve the political end of unification and justification of Han expansion. Such history should be treated much as we do colonial history of any kind: the truth must be corroborated by other evidence and the distortions must be rectified.

For example, the Han tell us of *their* China—a great and noble civilization surrounded by "barbarians." Typical of colonial historians, they deny the attributes of civilization to these barbarians, and frequently equate the "lack" of high culture with racial inferiority. Not only do the sons of Han spread agriculture and the niceties of urban life, but the racist overtones of such expansionist theories are quite explicit. The data derivable from prehistoric skeletal materials are still meager, but recent studies by physical anthropologists indicate that the present-day distribution of Asia's heterogeneous populations has a very long history with no remarkable changes from prehistory to contemporary times (*1*).

The contemporary context for reconstructing China's ancient past does not differ dramatically from the historicist viewpoint just described. For example, in his syntheses of Chinese prehistory, Chang Kwang-chih (*2*) proposes a "nuclear area"—the plains of the Huangho—and describes the history of culture in this region from the paleolithic period through the culminating civilization of Shang-Chou.

However, this description is then stretched thin so as to cover prehistoric and early historic phenomena occurring outside of the nuclear area; it becomes, in a sense, a reversion to the technique of writing colonial history. The only difference is chronological: thus the so-called prehistoric "Lungshanoid" is conceived in terms of dynastic succession and expansion as it spreads its enlightening influence throughout China, and, in the minds of some writers, into southeast Asia as well (*3*). The nuclear area is a valid descriptive device, applicable to a particular sequence of events; it is not an explanation.

As anthropologists we know that the "barbarians" have cultural identity and

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