Ronald Freedman

Observing Taiwan’s Demographic Transition: A Memoir

Report No. 98-426

Research Reports
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Abstract: The author had the opportunity to observe the course of the rapid demographic transition in Taiwan from 1961 to the present, with its fertility decline from 5.8 to 1.7. An initial large-scale experiment in Taiwan’s largest city, Taichung, was intended to demonstrate that family planning could be offered successfully to its population and, at the same time, to test best ways of doing this.

The experiment was a considerable success, with a two and one-half year rise in contraceptive use from 19 to 33 percent. It also demonstrated that such a large-scale effort could be carried out without political repercussions and provided a secure basis for the much larger Taiwan-wide project that followed. The immediate useful findings were demonstrations that: (a) diffusion was a powerful force in spreading the effect of the program to those not reached directly, (b) reaching husbands as well as wives did not increase acceptance, (c) the program reached women in all social and economic strata, and (d) there was a large, receptive audience of couples with unmet need or users of unsatisfactory methods.

After this experiment, the program expanded quickly throughout the island. A series of well-executed sample surveys monitored its progress. Major findings of this research were that: (a) the persistence of traditional, familial institutions was not a barrier to rapid dissemination of contraceptive use and lower desired fertility, (b) increasing age at marriage accounted for about one-third of the fertility decline and lower age-specific fertility for two-thirds, (c) almost saturation use of contraception spread rapidly to all social and economic strata but somewhat higher desired and actual fertility still characterized less educated and poorer couples, (d) while lower desired fertility was probably mainly the result of rapid social and economic development, the family planning program had an important role in converting the desire for fewer children into a demand for contraception and then into the actual use of contraception.

Key words: Taiwan, demographic transition, fertility, family planning, contraception.


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Acknowledgements:
This is an edited and condensed version of a more detailed study issued in 1998 as a paper of the Taiwan Provincial Institute of Family Planning. I am grateful for helpful comments on earlier versions of this paper from George Cernada, M.-C. Chang, Tomas Frejka, Albert Hermalin, Anrudh Jain, John Ross, Steven Sinding, T.-H. Sun, and Yuzuru Takeshita. Of course, I am responsible for the final product.
As a social demographer, I was fortunate to have had the opportunity to observe the course of the fertility transition from 1960 onward, mainly in the developing countries of Asia. Taiwan’s rapid fertility decline was from an early point widely cited as a possible model, so its history, which I observed first-hand from 1961 onward, may be of special interest. I am also moved to write about it because some issues and policies now cited as if they were new in the wake of the International Conference on Population and Development (ICPD) were already evident and being tested 35 years ago in Taiwan (although without the present frequent neglect of central population issues): for example, concentrating on the unmet needs of married couples even among the poor and poorly educated, discovering and utilizing the power of diffusion, careful follow-up of users of new contraceptives as part of an emphasis on the quality of care, continuing training and supervision of fieldworkers by female supervisors, using research and evaluation systematically to guide the program and policy. Further, an initial evaluation of program results through an experimental study design set a precedent which was followed successfully in some Asian countries early on, but which is still not sufficiently followed, although badly needed in some countries.

In 1960 I had never been in a developing country. The opportunity came when Frank Notestein of the Population Council asked if I would become involved in research on fertility and family planning in such countries. I began with a stimulating intensive study tour of India in the summer of 1960.

In 1961 the Council invited me to use my base at the Michigan Population Studies Center (PSC) to provide consulting assistance to Taiwan health authorities interested in expanding and evaluating their new family planning services. Marshall Balfour and Irene Taeuber had previously visited Taiwan and reported that family planning services were already being offered on a small scale with some success, that there were good demographic data, and that the Chinese health leaders and staff were intelligent and highly motivated. I agreed to visit Taiwan for an exploratory visit provided the Council understood that I would only undertake the work if the research would consider as essential how family planning and fertility change were related to the basic demographic and socioeconomic situation. They were enthusiastic about this approach and supported it during the years they funded our work in Taiwan.

In 1961 Marshall Balfour and I visited Taiwan for several weeks to establish whether our PSC and I were acceptable as consultants and whether I found Taiwan a promising situation for program development and research. The Taiwanese and I fairly quickly established a positive view of each other and plans were made for initial activities.¹

On that trip the Taiwanese were very receptive to Marshall Balfour’s proposal on behalf of the Population Council to introduce the new IUD as part of a "cafeteria" of methods in any new family planning initiative. The Taiwanese already had experience with a Japanese precursor—the Ota ring. The Council proposed to provide medical consultants
to train doctors about use of the IUD and for follow-up studies on the experience of women having an IUD insertion, with special reference to side effects. Such concern for the welfare of the women involved was strongly supported by all of us, Chinese and American alike.

On that first visit I learned more about the small but significant existing family planning program. "From 1959 to 1962 the Taiwan Provincial Maternal and Child Health Institute included as part of its health activities what was euphemistically named the Pre-Pregnancy Health Program (PPH). [The necessity for a euphemism is an indication of the official climate of opinion at that time.] The PPH program was based on traditional contraceptives and door-to-door visits by a single family planning worker in each township, ... Undoubtedly, it further increased the level of awareness about contraception and its legitimacy. It served as the training ground for many of the important workers in our subsequent joint efforts."3

"Taichung, the provincial capital with a population of about 325,000, was selected as the site of the first pilot study for several reasons. It was large enough to accommodate studies on several levels, it was the home base of the health personnel who would conduct the studies, and it was far enough from Taipei to escape some of the political problems ... of that international center.3

"The initial plans were for intensive pilot programs in one or two sections of the city, and ... in a few village areas scattered over the island. A [later] sample survey covering the city of Taichung was planned to measure knowledge, attitudes, and practice, but initially this was not seen as the benchmark for a city-wide program. ..."

"Only in July 1962 was the decision made ... to cover all of Taichung and to use a large experimental design which might test a number of important questions."

Before we got definitely involved in the large-scale Taichung Study, we had learned a number of things which increased our enthusiasm about a long-term commitment in Taiwan:

1. Taiwan had exceptionally good demographic, social, and economic data derived from its excellent population register, its censuses, and other sources. These were unique for a developing country.4

2. Fertility had begun to fall. Between 1958 and 1961 the total fertility rate had already declined--by 8 percent--from 6050 to 5585. Fertility fell in 21 of the 22 administrative areas of Taiwan--in cities, towns, and rural areas.

3. "Preliminary results from two small sample surveys (Freedman, et al., 1963: 226) and from health station records of the provincial Pre-Pregnancy Health Program were consistent with the island-wide fertility results from the official statistics. They indicated attitudes and behavior consistent with the fertility decline that had occurred.
already ... The surveys indicated a consensus in the population that a moderate-size family was desirable, and that there was a widespread approval of the general idea of family planning and actual use of family planning by a significant minority of the population. While approving such 'modern' ideas about family planning, the population also expressed the traditional strong preference for sons and approval of such traditional Chinese institutions as the joint family and the dependence of older parents on their children.

By this time we had studied in detail data from official sources which made it clear that social and economic development were well under way, despite the fact that the villages as well as the streets of cities still looked much like those in countries in which neither the fertility transition nor development were under way. Between 1952 and 1962 the percentage of women over 12 who had completed primary school increased from 28 to 40 percent, circulation of newspapers increased from 28 to 49 per 100, posting of domestic mail per household increased from 8 to 33 per 100, and the percentage of the male labor force in non-agricultural occupations rose from 44 to 52.

Even before my first visit to Taiwan Dr. Bernard ("Barney") Berelson and I had been discussing the great potential value of a large-scale experiment in a developing country to test and measure scientifically the possible impact of a well planned and executed program to increase contraceptive practice among women who wanted no more children. We wanted to use a design that could test alternate approaches and, specifically, the power of diffusion.

The favorable results of the PPH program and the pilot surveys, together with other strong evidence that demographic and development transitions were under way, encouraged us to make detailed plans with our Taiwanese colleagues for just such a program--the major Taichung experimental Study. That was to be preceded by a large "before" sample survey representing all married women of childbearing years in Taichung. The survey was very successful both in substance and methodologically (96 percent response rate with 2,713 respondents).

This large benchmark survey for all of Taichung confirmed the findings of the small pretests. There was overwhelming approval of the idea of birth control. Forty-six percent of the women already had all the children they wanted, including 19 percent who said they already had more than they wanted. Thirty-six percent of the respondents had at some time used a birth control method.5

Nevertheless, 26 percent of the women who said they wanted no more children had never used any method of birth control. There was a substantial potential demand.

This pre-program survey also indicated that the more modernized couples wanted and had fewer children and were more likely than less advanced couples to have used contraception to achieve their reproductive goals. These differentials were most marked for education but also
applied to more and less modern labor-force categories for husbands, and the consumption of fewer or more modern consumer durables. For example, among those having just the number of children wanted, 83 percent of the most educated and 36 percent of the least educated had used some form of birth control.

One of the most important findings in the Taichung Study we are about to describe is that in this experiment just the reverse was true. Where there was intensive outreach to them, lower-status and less advantaged couples were as likely to be acceptors of contraception as those better off and with other "modern" characteristics.

The Taichung Experiment

Since the small, initial pilot studies indicated so clearly that a large part of the population wanted help in family limitation, the Taiwan Provincial Health Department decided to organize a large experimental program for this purpose. The experiment was intended to study: (1) what the responses would be to different kinds of service programs offering several contraceptives, including the new IUD; (2) the power of diffusion in various versions of such a program; (3) how much difference traditional familial values made; (4) whether approaching husbands as well as wives and a separate program of informational mailings alone made a difference; and (5) whether a careful and extensive service and research program could be carried out without negative political repercussions in a situation in which such matters were definitely politically sensitive.

"The essential design of the experiment involved four 'treatments,' ranging anywhere from much to little effort, ... directed to the approximately 36,000 married couples in Taichung with wives 20-39 years old. These treatments were allocated by lin, a neighborhood unit containing an average of about 20 households usually including about 12 married women aged 20-39. (Taichung had about 2,400 such neighborhood units.) The four treatments were:

"1. Everything--husband and wife (Ehw): In these lins all of the stimuli of the program were combined: personal visits to both husbands and wives by trained health workers to provide information and to support motivation; mailings of information to newlyweds and to those couples with at least two living children; and meetings in the lins that mixed entertainment and information about family planning, using slides, film strips, flip-charts, etc.

"2. Everything--wife only (Ew): This involved all the major stimuli except the personal visit to the husband.

"3. Mailings (M): No personal visits (unless requested) or meetings in the neighborhood; instead, a series of mailings of letters and pamphlets to newlyweds and to those couples with at least two living children provided general information on methods, rationale, location of clinics, etc., and
included a postcard for requesting more information or a personal visit from a fieldworker.

"4. Nothing (N): No effort was made to reach the couples directly; there were posters in the area, since these were distributed throughout the city, and some meetings were held at the li level (a larger neighborhood unit of about 350 households), cutting across treatment boundaries.

"In addition to assignment to one of these four treatments, each lin was located in one of three 'density' sectors. These sectors differed, so far as possible, only in the proportion of lins getting the more intensive 'everything' treatments, which included the personal home visit. For this purpose, the city was divided into three pie-shaped sectors, roughly equal initially in terms of fertility, rural-urban distribution, occupational composition, and educational level."

The simultaneous classification of lins by the varying treatments and the density sectors into which they fell made it possible to study how much the effect of the different treatments by lin depended on the extent to which they were near other lins with the more or less intensive treatment program. How much would the acceptance rate depend on a favorable environment?

Another element in the experiment was holding group meetings in 500 of the 'everything' lins; 354 'everything' lins adventitiously without such a meeting served as a comparison group. The fieldworkers who conducted the meetings rated them as to effectiveness immediately after the meeting and before they could know what the acceptances would be.

Initial plans included a large-scale mass media program. However, the provincial health commissioner called this off just a few days before it was to begin. He was concerned about political repercussions. In retrospect, this seems very over-cautious, since the program that went forward with his approval included 12,000 home visits by family planning workers and 20,000 follow-up visits, before-after survey interviews with 2,713 women, 854 local neighborhood meetings, and 50,000 posters all over the city, presenting the idea of family planning and inviting visits to the nearest health station.

Many of the fieldworkers and all of the supervisors had experience in the Pre-Pregnancy Health Program. They were all carefully retrained as to the project's objectives and their duties, and about the new methods, all of which were available at the government clinics offering contraceptive services and supplies. In addition to the new IUD, the "cafeteria" of methods for which information and supplies were offered included: the condom, diaphragm, foam tablets, jelly, withdrawal, and rhythm. By the close of the experiment 86 percent of those adopting contraception in the program chose the IUD. There was no pressure to accept the IUD, as indicated ... by the fact that IUD acceptance rates were lowest in the "everything" lins where the workers had the closest and most direct interaction with the women.
The appeal of the new IUD apparently lay in its simplicity and general effectiveness, as well as in the fact that it required no continuing supply and that it had no immediate connection with the sexual act. In these respects it probably appeared to most of the population studied as superior to the traditional methods available to them.

The doctors in the clinics and the fieldwork supervisors had training sessions about the new IUD from such eminent authorities of the time as Drs. Alan Guttmacher, Sheldon Segal, Jack Lippes, Robert Wilson, and Christopher Tietze. Those having an IUD insertion, first in the Taichung Study and then in the all-Taiwan program as a whole were followed up for a considerable period of time to check on the contraceptive protection and to deal with any side effects which developed. The motto which was developed in the course of these studies was: "Follow the woman, not the method."

In a letter which I wrote to Bernard Berelson from Taiwan during the early stages of the Taichung Study, I described the objective as "... trying to help people have the limited families they want rather than persuading them they should want to have fewer."

In an unpublished paper by Berelson (1963a), he wrote about the literature and posters as follows: "... materials stress the benefits to the individual family and only occasionally bring in 'population problems.'"

The Results of the Experiment

"1. A large information and service campaign of short duration substantially increased the practice of family planning in a large population of a developing country. This was a unique demonstration at the time. An intensive campaign in Taichung of only nine months' duration in 1963 was accompanied by a rise in the proportion of married women 20-39 who were using contraception from 19 percent before the campaign to 26 percent at the end of nine months and to at least 33 percent within two and a half years."

"2. Taichung’s ongoing fertility decline was accelerated in the year following the experiment, and for 1963-1964 exceeded that of other cities or of the province by a considerable margin. By 1965, however, Taichung’s advantage was minimal (except in speeding up decline by lower-status couples), presumably because of the rapid expansion of the family planning program in other parts of the island and the continuous adoption of family planning methods outside of the program. The initial effect of the large-scale adoption of the IUD in Taichung in 1963 apparently was to speed up the decline in fertility that was already under way before the program began.

"3. Diffusion played a major part in circulating the message and effect far beyond the couples directly influenced by the program. The influence was mediated largely by the word-of-mouth communications of friends, neighbors, and relatives. The regular personnel of the
health stations, not specifically assigned to family planning work, were also important.

"One important way in which diffusion operated was by increasing the perception that other, significant people--friends, neighbors, and relatives--were practicing contraception. This provided social support that facilitated acceptance. Acceptances were highest where such perceptions increased. Such increased perceptions of contraceptive practice were more important than whether discussions about family planning increased.

"There is evidence of the power of diffusion not only in these data on increased perceptions, but also in the large number of acceptances by those from outside the city, in the relatively high acceptance rate in city areas without direct program influences, in the rather large number of acceptors who came to the clinics even before the program workers reached them, and in reports of sources of information other than the direct program influences--especially for the IUD.

"4. The effective group meetings were successful in bringing into the program [disproportionately] the lower-status, less modernized couples who were under demographic pressure but not yet protected against further growth of their families.

"5. Demographic variables were much more important than social and economic variables in determining who became an acceptor. The demographic variables are those which indicate in various ways the stages of the family life-cycle and their relation to the desired number of children and the sexes wanted.

"In the earlier pre-program period of individual action, the use of some method of family limitation was associated with measures both of modernization and of demographic status. The demographic variables were strongly associated with family limitation practice both before and during the period of the organized program. A plausible interpretation of these findings is that demographic pressures provided the constant incentive for family limitation both with and without the existence of an organized program. The more modern couples were better able to deal with these pressures without an organized program. The organized program provides the less advanced strata with resources and support they apparently need to meet similar needs [more quickly than without such assistance. The program acceptance rates were substantial even for farmers, those least educated, and those living in traditional extended households.]

"6. It may not be necessary to approach both husbands and wives in a family planning program. The acceptance rate in the neighborhoods where both the husband and wife were visited was no higher than that in the neighborhoods where only the wife was visited. This may be due to the fact that the principal method accepted was the IUD, a female method, and that there was already considerable consensus between the spouses about family planning."
"7. Letters were not effective in increasing the acceptance rate, although the population is fairly literate. The letters were not keyed specifically to the IUD, and this may account for their lack of influence. But, in an experiment in Seoul, Korea, where letters specifically referred to the IUD, the results were no better than in Taichung. Later efforts [in Taiwan] directed to new mothers gave more promising results.

"8. An important result of the program was that many families strongly interested in family planning were helped to adopt more satisfactory and effective methods. Since many of these families were already limiting family size by such methods as abortion, the effect on the birth rate was less than might have been anticipated. For the 40 percent of acceptors who had previously been using unsatisfactory methods, there may have been some further reduction in fertility, but the major gain may have been in terms of the health and greater security of such families.

"9. One of the important findings of the Study was that such a large-scale effort could be carried out according to plan, with measured results, without political repercussions, and in such a way as to provide a secure basis for the much larger island-wide effort that immediately followed it. This was one of the pilot efforts in several countries that encouraged programs to begin on the larger scale and with the intensity of effort which we believed to be necessary if a program is to set in motion the kind of diffusion that occurred in Taichung." My observation was that initial reluctance of political and bureaucratic leaders was overcome by evidence that this was a very popular program, meeting very substantial unmet needs.

10. On the research side, we learned in the Taichung Study that in what was then still a high-fertility, patriarchal society:

a. It was feasible to do excellent sample surveys on reproductive behavior with detailed questionnaires, high response rates (96 percent!), and the strong interest of the respondents.

b. It was possible to carry out, with considerable success, a complex experimental study of responses to a varied, intensive program providing family planning information and services and simultaneously to do a variety of careful evaluation studies.

11. On the basis of the Taichung Study and early experience with the new national program, Yuzuru Takeshita and I were moved as early as 1967 to express the view that the proper policy for family planning programs was to concentrate, at least initially, on serving the needs of the considerable number of couples who wanted no more children. We argued that changing the number of children desired required structural changes in the roles of the family, women, and children which were outside of the capability of family planning programs.
Studying Taiwan as a Whole:
The Program as a Whole

Even before the Taichung Study was completed, the strong evi-
dence of its success led Dr. S. C. Hsu, who worked with the health com-
missoner, to begin extending the program to all of Taiwan. Dr. Hsu’s
pragmatism is demonstrated by the fact that, when he told me about this,
he said the expansion would be "experimental." When I asked him how
many of Taiwan’s 361 township units would be covered initially, he said
100!

Herewith, a brief summary of highlights of the Taiwan service
and research program during Taiwan’s transition from high fertility to
below-replacement levels (Freedman, et al., 1994):

The Taichung Study and the first expansion to 100 townships were
initiated without an official national program or policy. However, a
de facto government program was created when K. T. Li, Taiwan’s chief
economic planner and the architect of the ‘Taiwan Economic Miracle,’
approved a five-year plan designed to reduce the natural increase rate
from 3.0 children per woman in 1964 to 2.5 children per woman in 1969,
with a grant of U.S.$24 million intended, primarily, to finance a ser-
vice program to provide 600,000 women with IUD’s to meet their family
planning needs. The hope was, thereby, to help to reduce the rate of
natural increase from 29 per thousand in 1964 to 20 per thousand in
1973. In point of fact, both the acceptance of IUD’s and the lower nat-
ural increase were achieved on target. There were lively discussions at
the time as to how much of these remarkable changes was due to program
effect and how much to the rapid social and economic development also
under way.

K. T. Li’s program preceded a formal national population and
family planning program. That only came in 1968 when the program was
already existing in 331 of Taiwan’s 361 local areas. This is an indica-
tion of Taiwanese pragmatism, avoiding possible political conflict by
demonstrating public demand and satisfaction in advance.

The service program resulting from K. T. Li’s initiative in-
volved female Pre-Pregnancy Health workers who made motivational and
educational visits to women of childbearing age in their homes to offer
the subsidized contraceptive services of a network of private doctors
trained and funded by a supervising agency that eventually became the
Taiwan Provincial Institute of Family Planning.

In addition to organizing and supervising the service program,
the Institute had a research division that monitored and evaluated the
program in a variety of ways, including the gathering of service statis-
tics, the performance of medical and demographic follow-up surveys of
contraceptive acceptors, and the performance of periodic national know-
ledge, attitudes, and practice (KAP) surveys. The research was used to
help guide the modifications of the program in response to changing
needs created by massive social and economic changes that occurred in
Taiwan.
One indication of the program’s success is its high ranking on effectiveness by the Mauldin-Lapham and Mauldin-Ross comparative “program effort” indicators. Another indication is that the program supplied a large number of the contraceptive users with supplies and services during Taiwan’s considerable fertility decline. What would have happened absent the program is impossible to say, but, undoubtedly, Taiwan’s considerable social and economic development was a substantial force in creating the demand for family planning services. However, the family planning services provided by the program became a major immediate proximate cause of the fertility decline in cooperation with the considerable network of private-sector doctors. Dr. T. H. Sun has estimated that program-based contraceptive practice was the immediate proximate cause of averting 5.9 million births between 1965 and 1990 (Sun, 1994). As the proportion of couples using contraception increased, the proportion receiving their contraceptive services from the official program also increased, reaching 41 percent by 1970 and 63 percent by 1980. Obviously the private sector played a very important role from the beginning. The program encouraged this by helping the private ob-gyn physicians to obtain supplies and by setting up training programs about new contraceptives (especially important for initial introduction of IUD’s) and circulating relevant information to the private-doctor network.

The desirability of family planning as a policy to reduce fertility and population growth was always implicit and sometimes explicit in the various early quasi-official initiatives. The notion of reaching a two-child replacement goal became explicit in public policy statements in 1970 (Liu, 1983), but was never a driving force to put pressure on couples to accept contraception. Targets for local areas and workers basically were set in terms of what the program managers thought the workers could achieve on the basis of field experience with demand, rather than on the basis of demographic objectives.

From Taichung to All of Taiwan:
The Changing Role of the Michigan Group

As intensive study expanded from Taichung to Taiwan as a whole, the nature of the Michigan PSC participation became more intensive on special topics and involved more staff. We concentrated more completely on evaluation and research, although we sometimes pointed out policy implications of research findings. The main responsibility for consultation about program detail and policy after Taichung was with the inimitable Sam Keeny and his colleagues, George Cernada and Robert Gillespie. The ideas and spirit of Bernard Berelson hovered over all of us as we expanded from Taichung to Taiwan.

Much of our PSC work involved participation in designing and analyzing Taiwan’s unique series of national surveys on fertility and family planning and important social and economic correlates. Major surveys of high quality were conducted in 1965, 1967, 1970, 1973, 1976, 1980, 1985, and 1991. There were additionally special surveys on special topics.
Additionally, we worked with our Taiwan colleagues on IUD follow-up studies which described and analyzed the reproductive history of women using the IUD—the major method in Taiwan. These studies demonstrated that even though many women gave up the IUD the overwhelming majority controlled their fertility by shifting to other methods and abortion (Freedman, et al., 1971; Hermalin and Chow, 1971).

We also ventured into topics beyond fertility to study mortality and migration (Sullivan, 1972; Speare, 1969).

We made a significant contribution by helping the Civil Affairs Department to make available Taiwan’s demographic data by helping to establish the English-language Taiwan Demographic Fact Book, published annually from 1961 onward. These volumes have made available to the whole world continuing time series of demographic data for Taiwan and its constituent areas, unequalled for any developing country for almost the whole course of the demographic transition.10

A Summary of Major Findings from the All-Taiwan Studies

Table 1, following, provides a convenient time series of the principal variables discussed in this section.

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- = data not available.
*cp. = contraception.

In some of the surveys the sample was for women 22-39, so this is used throughout in this table. Where data are available for women 20-39, the numbers do not deviate greatly.
Herewith, a summary of major findings:

1. Sample surveys at approximately three-year intervals and the superb demographic data from Taiwan’s population register made it possible to chart the course of Taiwan’s demographic and contraceptive transition. Summary highlights of this transition follow:

   a. The fertility (TFR) transition was very rapid.

      The TFR fell from 6.0 to 4.8 (31 percent of the way to 2.1) in the five years between 1960 and 1965, when the family planning program became island-wide and its statistical evaluation began. Then it took only 20 years more to reach 2.1. The whole transition from 6.0 to 2.1 took only 25 years—about one generation.

      Taiwan and Korea did this substantially faster (25 and 24 years) than Japan, Canada, Germany, Spain, Czechoslovakia, Hungary, or Russia and other countries whose completed demographic transitions were recently analyzed by Ross and Frejka (1998) as representing a range of countries which have completed the transition. Their tenth country, China, completed the transition in only 18 years, but its distinctively coercive program makes it non-comparable.

      The rapidity of Taiwan’s fertility decline is sometimes described, ex post facto, as purely due to rapid social and economic development. However, in the early 1960’s no one expected such rapid changes in fertility, contraceptive practice, family planning services, or development levels. As I will develop later, I believe that, while the rapid development probably accounts for the demand for fewer children, the program helped substantially to convert this greater demand for limiting births, first into a demand for family limitation methods and a demand for contraceptive services, and then into an actual use of contraception. This process was especially important in lower economic and educational strata where the demand was especially ambivalent (see Freedman, 1997: 2).

      In Matlab, Bangladesh, where barriers to contraceptive use were much greater than in Taichung, an experimental program also did not change preferences, but it converted an already strong unmet demand for fewer children into a demand first for contraception and then into actual use of contraception (see references in Freedman, 1997: 2).

      There was a similar situation in the landmark Thai Photharam Study (1971), where a prior large unmet need for contraception resulted in a very large and rapid acceptance and use of contraception when a new program
legitimated this way of meeting the existing demand and provided acceptable services.

b. In Taiwan, as in many other places, there was already substantial demand when the island-wide program and its statistical record began. In 1965, when the record begins, 57 percent wanted no more children and 61 percent of those weren’t using contraception. The proportion of such non-users decreased very quickly to 28 percent by 1973--only eight years after this measurement began. Decrease after that was to 11 percent in 1985 when the TFR was below 2.1. The proportion of all women who wanted no more and weren’t using decreased from 35 percent in 1965 to 20 percent eight years later and to 8 percent at the end of the transition 18 years after the first measurement.

c. In the first eight years of the record (1965-1973) preferences for children decreased only slowly but contraceptive use overall and especially among those wanting no more children increased at a spectacular rate. This contraceptive use increase plus a decrease in nuptiality resulted in a 33 percent decline in fertility in just eight years (1965-1973).

A similar "stall" in preferences with a simultaneous rapid contraceptive-use rise was reported for Thailand, Costa Rica, and Korea.

d. Nuptiality decline, represented mainly by a decrease in percentage married at ages 20-24 and 25-29 was a significant factor (about 33 percent) in TFR decline from early days until replacement fertility was reached. After that, nuptiality decline accounted entirely for the further TFR decline to 1.7. The percentage married at ages 20-24 fell from 61 percent in 1961 to 25 percent in 1991.

Although desirability of a higher age at marriage was sometimes mentioned in program literature, there is no evidence that this had any effect in Taiwan or elsewhere, without coercion as in China. It is very likely that changes in the position of women resulting from socioeconomic change led to the later age at marriage (Thornton and Lin, eds., 1994: Chapter 9).

e. Use of contraception to space children although wanting more children was another significant element in Taiwan’s fertility and contraceptive transition. That proportion was only 5 percent in 1965 but 41 percent by 1976--only 11 years later--and 78 percent in 1985 when replacement-level fertility was reached.
f. Diffusion, as well as effective program effort outside of cities, accounts for the fact that the percentage using contraception outside of cities lagged only five-seven years behind the levels in cities and then finally converged to similar levels.

By 1985 (20 years after our record began) the rate of contraceptive use had converged to equality among urbanization strata. However, there were still urbanization differentials in fertility when an island-wide 2.1 TFR was reached in 1984, because preferences were still higher in the townships than in the cities. There were similar patterns for educational levels: similar contraceptive use levels but higher preferences and fertility in lower education strata.

This suggests that contraception can be used differentially to attain different (more and less traditional) values.

We have already seen that the power of diffusion was demonstrated in a variety of ways in the Taichung Study. Montgomery and Casterline (1993) were able by ingenious modeling to separate direct program efforts from indirect effects, which they could then attribute to diffusion by taking into account their knowledge of Taiwan’s demographic and programmatic history.

These various kinds of evidence of the power of diffusion supported the relevance of the ideational hypothesis for Taiwan in various program discussions. It is, of course, important to note that diffusion can magnify the effect of socioeconomic development as well as of the program. This is a point that Montgomery and Casterline were investigating.

g. Taiwan’s TFR fell to levels below 2.1 in large part because of later marriage (Feeney, 1991). This probably was especially distinctive of better educated parents, as indicated by differential fertility by age by education strata. Presumably, this "postponement" should have been made up soon by an increase in TFR for the better educated and a decrease in educational differentials. This did indeed happen between 1991 and 1994.

h. Taiwan’s family planning program utilized the private-sector network of doctors very effectively to implement its service program quickly and economically.

Although the Taichung Study used only public-sector doctors, quickly afterward service was shifted to the private sector. However, this was a public-private-sector partnership. The family planning program trained the private doctors in the use and follow-up services
appropriate for new contraceptives. It also subsidized the doctors’ services by giving potential clients coupons which provided partial payment per capita on return with information about the client and service rendered. The relation of the program to private-sector doctors, strained initially by their exclusion from the Taichung Study, was quickly restored to an amicable and productive basis.

1. The extent and importance of the aging effects of Taiwan’s rapid fertility transition were noted before such emphasis elsewhere in Asia (Japan excepted) (Freedman, 1986).

Extensive studies of aging and its consequences were begun at an early point by Albert Hermalin and Taiwanese colleagues. Taiwan’s leadership in comparative studies under Hermalin have been notable and have influenced designs and methodology of such studies in many places.

j. A major study of how specific social changes have affected the Taiwan family was a successful collaboration of six Taiwanese and six Michigan scholars (Thornton and Lin, eds., 1994). The series of sample surveys on family planning provided an invaluable time series of changes in familial organization and the causes of those changes. The book received the American Sociological Association’s awards for Best Book on the Family and Best Book on Human Ecology in the same year. Arland Thornton was the intellectual leader in creating this remarkable book and its editor, along with Hui-Sheng Lin.

From my earliest visit to Taiwan I was interested in the extent to which traditional familial values were a barrier to early adoption of contraception, especially among less educated and rural families. In the period of the 1960’s and later this was a big issue in the field among sociologists.

We did continuing research on, e.g., patrilineal-patriloclal functions. In 1973, 82 percent of parents lived with at least one married son and as late as 1986 (when the TFR already was below 2.1) parental co-residence with a married son was still 70 percent. Furthermore, those not co-resident tended to live near a married son and to exchange visits frequently and to receive financial help. These relationships were very much less with the wife’s parents (Thornton and Lin, eds., 1994: Chapters 12 and 13). Susan Greenhalgh in her study (1984) in a different kind of analysis concluded that "... extended family networks predominantly remain based on patrilineal principles," although she also pointed to some erosion in these phenomena—as the increase "in women’s economic importance has led families actively to cultivate female-linked ties."
In a multivariate analysis of the determinants of co-residence in the same book, Freedman, Thornton, and Yang concluded that education, paid employment of the wife before marriage, and other forms of premarital independence from parents are the major changes in Taiwanese social and economic life that have produced the trends in the living arrangements of newlyweds. Even so, in the marriage cohort of 1980-1984, 68 percent of young couples began married life with husband’s parents (if husband’s parents were alive). Since the fertility transition was virtually complete for the 1980-1984 cohort, it is clear that continuing traditional family forms were not inconsistent with wanting and having few children by the effective use of contraception. We also found both early and late in the demographic transition there continued to be a strong, if diminished, preference for male children.

2. Taiwan’s rapid fertility decline from a TFR over 6 in 1956 and 5.6 in 1961 to a replacement level of 2.1 in 1984 was undoubtedly in major part a result of the spectacular economic and social development that occurred during that period. However, Taiwan’s effective family planning program probably speeded up the pace of the adoption of contraception, especially by its early effect on reaching lower-status couples and areas. Evidence for this assertion is:

a. An important paper by Albert Hermalin (1978) in which the findings were abstracted as follows: “This paper uses regression analysis of areal data in Taiwan to examine the effects of the national family planning program on fertility during 1966-1972 while taking into account the rapidly changing social and economic conditions of that period. Tests of different models produce the general finding that the program did contribute to the decline in fertility throughout the period. Its effect was strongest in the least modernized areas of Taiwan, which had the highest levels of preprogram fertility.”

It is unfortunate that this important study was not replicated regularly after this promising beginning.

b. The Taichung Study’s intensive service program reached less modern and more modern couples alike, although a large differential in contraceptive use preceded the program.

c. The Taiwan-wide surveys found that contraceptive use for illiterate women increased from 11 to 78 percent in just 11 years (1965-1976) and their fertility fell by 31 percent in just eight years. It is implausible, though possible, that this would have happened so quickly without the program’s special interest in such couples. In 1965 the correlation ratio (eta) between wife’s education and contraceptive use was .23. This decreased to .07 by 1976 and .04 by 1980.
It is clear that the Taiwan family planning service was a major immediate proximate cause of Taiwan's fertility decline. No doubt, absent the program, most of those it served would have obtained all their services completely from the private sector, but it is doubtful that this would have happened as quickly as it did for the lower-status strata.

3. The Taiwan Family Planning Program had the great advantage of working initially with considerable manifest and latent demand created by social and economic development, but it deserves credit for working carefully to serve that demand, especially among the poor and poorly educated. Whether it also decreased fertility preferences is controversial.

a. Given the rapid rate of Taiwan’s socioeconomic development, I believe that the service program cannot claim major credit for increasing the numbers of women who wanted no more children, although it certainly became a major proximate cause of increasing contraceptive use among them.

In any case, the proportions using contraception among women wanting no more children increased from 39 percent in 1965 to 64 percent in 1976 and 93 percent in 1991.

b. In the early years of the island-wide program workers were instructed to concentrate on those having at least three children and one son, because it was known from the surveys that potential demand was considerable among them. In a 1965 survey 80 percent of such women reported that they wanted no more children. The workers had the great advantage of being able to identify from the excellent local population registers all women having at least three children and one son. They could at the same time get their addresses and education. By 1971 there had been sufficient change to justify concentrating on those with at least two children, since by that time 68 percent of such women wanted no more children. By 1976, 86 percent of those with at least two children and 93 percent of those with at least three wanted no more children.

Simply contacting such women and identifying those who wanted no more children did not necessarily result in a woman asking for (demanding) contraception. Often the fieldworker’s job was to convert the "demand" for no more children into a "demand" for contraception. Even under the very favorable conditions in Taiwan finding potential acceptors and persuading them to adopt contraception with program services was hard work. Here I quote Dr. T. H. Sun, the distinguished Director of the Family Planning Institute and the program (Sun, 1997):
... the pressure we put on the field-workers was quite great. It is true that we started with ready couples but field-workers have to find them and try to convince them. It still was a very time-consuming work. According to our service statistics, they had to make ten home visits to get one acceptor. The target was set somewhat above what they could reach with a reasonable effort, but we evaluated them monthly and the evaluation record which contains their name and grades of achievement were sent to all workers. If one fails to achieve the target for the first month, a yellow warning letter will be sent to her, and a red one if she continues to fail for the second month. If she continues to fail in the third month, the supervisor will visit her to find out the reason for the failure. If this was due to her own fault, she would be fired. There is also a severe penalty for a false reporting. When we started this fieldworker evaluation system, we fired about one-third of the incompetent workers in a year. I think this put a lot of pressure on them to work very hard. Some of their husbands even accompanied them on their home visits during evening. I used to get a lot of pressure from the Provincial Assembly members for punishing fieldworkers or put too much pressure on them. However, I did not change the evaluation system because it was one of the key elements in the success of the program. Instead, I tried to encourage them to work hard by providing incentives, such as monetary awards, selecting good workers to visit Korean programs, etc., and tried hard to convince them that family planning service is one of the important social welfare services to people... I am very happy to say that they did not let me down. ... They really are the heroines of the success of the program and I am proud of them.

While there obviously was considerable pressure on the fieldworkers to do their jobs well, note that the targets set for each worker were only "somewhat above what they could reach with a reasonable effort." There is no mention of great pressure on the potential clients. So far as I know, there was little that a
fieldworker could do to exert such pressure even if she wanted to do so. The client usually had the alternative of seeking services in the private sector. Remember that most program client services were contracted through the private sector on a subsidized basis. Dr. Sun has estimated (Sun, 1994) that a majority of contraceptive users obtained their services directly from the private sector until the late 1970’s. However, it is probable that program educational efforts increased the attractiveness of contraception through both the public and the private sectors as time went on.

c. Another important issue is whether the program could and did successfully act to reduce family size preferences. Dr. Sun believes that, after an initial period when the supply of "ready" acceptors was reduced by rapid adoption of contraception, the program was able to work successfully to reduce family size preferences (Sun, 1997). He points especially to the effects of an intensive education campaign in 1971 when "many disadvantages of having too many children were emphasized through home visits, meetings, and mass media." It is true, as Sun indicated, that between the 1970 and 1973 surveys there was a decrease in family size preferences and an increase in the proportion wanting no more children greater than in the periods immediately preceding or following. While the intensive educational effort may in part have produced this effect, the evidence for other influences is: (1) special survey data for 1970-1971 for women 20-29 indicate that most of their preference reduction occurred before the education campaign; (2) there was continuing rapid economic development; and (3) the rapid increase in contraceptive use in the preceding period increased the proportion of small family planners in the social environment of most women.12

Dr. M. C. Chang (Director of the Institute from 1988 to the present and on the staff before that) strongly supports T. H. Sun’s view of program effect on preferences (Chang, 1998): "... In the early stages of the program ... [its] success was dependent on existing demand ... However, the program [later] put much of its effort to persuade people of lower status to have fewer children through home visitings or mass media campaigns. There are many stories from our field reports saying that rural women who wanted more children accepted sterilization right after our field workers’ home visits ... I think our program has reduced demand for children and created demand for family planning through these efforts."

While the program may have had some effect on the preferences of the poor and poorly educated rural women, its possible effect on their use of contraception is
much more notable. Between 1970 and 1985 the percentage
decline in preferences was less among the poorly than
the better educated. The correlation rates (eta) be-
tween education and mean reproductive preferences actu-
ally increased during this period among both younger and
older women. On the other hand, use of contraception
increased faster among the poorly than among the well
educated, so that the correlation ratio (eta) between
contraception and education for both younger and older
women decreased rapidly. By 1980–1985 contraceptive use
was similar at all educational levels (Chang, et al.,
1987).

In recent years I have come to believe that a de-
crease in preferences may not automatically result in
contraceptive use, as some economists believe (e.g.,
Pritchett, 1994; Freedman, 1996). There is often an
intervening step—the creation of contraceptive demand.
A family planning program (and other societal influ-
ences) may be needed to facilitate the movement from a
decline in preferences to a demand for contraception and
then to its actual use. These intermediate steps after
the preference change are hastened by additional infor-
mation, legitimation, and appropriate services and
supplies.

A program may not always be needed for the movement
from changed preferences to actual contraceptive use,
but there are clearly situations where it plays an im-
portant role. I cite two examples:

In the Matlab, Bangladesh study there was approxi-
mately the same decline in reproductive preferences in
the control and experimental areas, but the increase in
contraceptive use was substantially greater in the ex-
perimental area with its intensive household visitation
(1987); and Arends-Kuenning, et al. (1996) all interpret
this as crystallization of latent demand. I would add
exceptional support for contraceptive use.

The important Photharam study in Thailand also
demonstrated that a program could get quick, substantial
adoption of contraception in a rural area in which con-
siderable pre-existing demand had not in itself led to
any significant use of contraception without the pro-
gram.

Coming back to Taiwan, I suspect that the principal
effect of the fieldworkers was to help women who had
ambiguous feelings about having no more children to
crystallize their sentiments but more particularly to
bring those almost ready to use contraception to do so.
This was a very important accomplishment even if it
accounted for only part of the very substantial increase in contraceptive use, especially among the poor.

I respect my Taiwan colleague’s view that the fieldworkers reduced preferences. It is probable that this happened in some cases but, unfortunately, there is no systematic evidence on whether preferences or readiness to use contraception or both were changed. In retrospect, it would have been very desirable if there had been interviews with systematic samples of both fieldworkers and their clients to ask what they thought influenced their decisions about whether to have more children and whether to use contraception. The fieldworkers certainly may have believed they changed preferences. Interviews with clients could have strengthened the evidence one way or the other. Also, questions about this issue on the recurrent KAP surveys would have helped too. I don’t remember that we, as consultants, ever suggested such studies. However, I also don’t know of any other programs that conducted such crucial evaluation studies.

Since the reader may well wonder whether the measures of family size preferences and wanting no more children were sufficiently stable and meaningful to justify this whole discussion, I hasten to point out that longitudinal and cohort studies (unique to Taiwan) demonstrate that in this period the preferences were not only stable for individual women but were predictive of their later use of contraception and abortion (Sun, et al., 1978; Freedman, et al., 1974; Jejeebhoy, 1981).

d. As time went on, some of the fieldworkers found that in their areas most women who wanted no more children were practicing contraception. They were then encouraged to suggest contraceptive use to space births for the health of mother and child. Whether or not due in part to this effort, the proportion of women who were currently using contraception to space births increased from 5 percent in 1965 to 41 percent by 1976, only 11 years later, and to 78 percent in 1985 when replacement-level fertility had been reached.

The Quality of Family Planning Services in Taiwan

The quality of the family planning services in Taiwan was at a level ahead of their time—certainly for a developing country. At the field level the purpose of the family planning program (in Taichung first and then in Taiwan as a whole) was first to help couples have only the children they wanted and later also to space their children as they wanted to have them. On the macro-level there was an interest in reducing fertility rates and population growth, but this was not a significant element in the program at the field and service levels.
In an early unpublished progress report of the Taichung action program (1963b), Dr. Bernard Berelson, who helped design the experimental program, is quoted as follows:

"The objectives of the action program are to foster happy and healthy families in the community by protecting mothers' health through providing information on pregnancy matters."

Because of the frequent research monitoring during the Taichung and later programs, we knew that there was a continuing significant actual or latent demand for family planning services. The directors and supervisors of field services directed the efforts of the fieldworkers to concentrate on those who wanted no more children, albeit in later phases they also asked them to try to reduce preferences. I have already indicated my skepticism as to whether that worked.

In the Taichung program there was considerable attention to getting the best available medical consultants about the IUD, the principal method chosen. In addition, there was a medical supervisory board which included the two leading Taiwanese professors of obstetrics and gynecology who had educated many of the public and private doctors who actually provided services. There were special training programs for the clinic doctors who first rendered the services in Taichung and later for the private practitioners who did most of the IUD insertions in the general Taiwan program that followed. Dr. C.H. Lee, who was in charge of the program's medical training and services during most of the years covered by this memoir, impressed me as a very competent and compassionate doctor.

In my visits to clinics and to private practitioners, I usually talked to doctors and nurses through an interpreter. My impression was that these service providers wanted to do a good job. Unfortunately, in this as in other situations in Taiwan, not knowing the language was a major handicap. Over the years I think I learned how to use interpreters effectively, but, obviously, I can't put too much weight on my own direct observations absent knowledge of the language.

An important indication of concern for the well-being of the women served is the extensive follow-up program for hundreds of thousands of women having the new IUD inserted. Such extensive and intensive follow-up studies of these women were carried out both in the Taichung and general Taiwan programs, with a special effort to check on possible side effects as well as the effectiveness of the IUD's.

**The Impact of the Taiwan Studies Elsewhere**

The results of the Taichung and Taiwan Studies were of considerable interest elsewhere. Interest arose from the facts that: (1) it got apparently significant results which were measured and reported quickly, (2) it seemed to enhance the prestige of its bureaucratic and political sponsors rather than resulting in political problems as feared beforehand, (3) its research and program documents and forms were made fully
available and were used as models elsewhere, (4) there was an early flow of reports in professional journals and an early report reaching a wider audience in the Scientific American (Berelson and Freedman, 1964), (5) persons associated with the project were consultants and participants in pilot projects elsewhere, and (6) Taiwan welcomed and facilitated visits from many countries to observe Taiwan’s programs.

The Taichung pilot study had an early impact on early pilot projects in Korea and on the important rural Photharam study in Thailand. Both involved consultants steeped in the Taiwan experience. The Thai and Korean pilot studies affected early formulations of national programs by demonstrating that even in rural areas there was a substantial demand that could be met by strong programs without creating political problems (Sook Bang, 1968; Kwon, 1966; Hawley, et al., 1965; Photharam Study, 1971).[13]

The experience reported from Korea and Thailand strengthened my conviction, based on Taichung, that pilot projects, preferably with a strong experimental design, could demonstrate what could be done in places regarded as "difficult" or "impossible" for cultural or political reasons. For several states of India and all of Pakistan, where the programs were often described as "failures," I often quoted an Indian family planning officer who said: "The program hasn’t failed. It just hasn’t been carried out."

I took every opportunity over the decades in which the Pakistan program was a "failure" to strongly advance my view that the situation might be greatly improved by a suitable pilot project.

In surveys in 1976, 1980, 1990, and 1995 a large majority of Pakistani women of childbearing age said they wanted no more children, but a large majority of both those wanting and not wanting more children had not been visited by a family planning worker. As late as May 1993 the workers in 65 percent of a national sample of Pakistan’s Family Welfare Centers made none of the home visits that were central to their mission (Cernada, et al., 1993).

Many cultural reasons have been advanced for the "failure" of the Pakistan program over decades. These are reminiscent of a similar litany about Bangladesh before Matlab. What might a Taichung or Matlab-type program have accomplished in Pakistan?

Taiwan’s Influence through its Program for Visitors

Several thousand visitors from many countries and international agencies came to Taiwan in its early years to learn about the Taichung Study and the all-Taiwan service and research program through training programs, conferences, and individually tailored observations. The Chinese Center for International Training in Family Planning was established in October 1968 to administer this program. By December 1969 it had assisted 583 visitors from 30 countries and international agencies. Over the later period 1969-1975 there were 2979 visitors from more than 50 countries.
Credit where Credit Is Due

Throughout the Taichung experiment and Study and the larger Taiwan service and research program following, what became the Taiwan Provincial Institute of Family Planning developed and carried out the service program and the field aspects of the research program very effectively. The persons ultimately responsible and deserving primary credit on behalf of all their Taiwan colleagues for the program’s accomplishments were the successive directors of its several incarnations: Dr. J. Y. Peng, Dr. L. P. Chow, Dr. T. H. Sun, and Dr. M. C. Chang. After Taichung, consultants for the service program and supporting operational research were: as the senior person, the inimitable Sam Keeny, and working with him were Robert Gillespie and George Cernada.¹⁴

PSC staff members were not the only research collaborators with the Taiwan Institute, but for many years we did play the major collaborative role in most important research studies, including almost all of the surveys. However, I emphasize that we had a genuinely collaborative research relationship with our Taiwan colleagues. They had the ultimate responsibility for all the field and research programs and deserve primary credit for success. Our Michigan group played an important role in designing the surveys, especially in the early years. But training we provided both in Taiwan and in Ann Arbor and their own experience in the field resulted in the Taiwanese leaders and staff becoming skilled practitioners in the art of survey research, so that they took over completely and expertly many aspects of survey methodology. We became genuine collaborators and friends and these ties persist today.

A Summary Look Backward

What have I learned about the demographic transition in Taiwan?

1. I now have little doubt that Taiwan’s remarkably rapid economic and social development had a major impact on its fertility decline, especially as it affected how many children Taiwan’s couples wanted. It also provided a rapidly improving infrastructure (e.g., communications, transportation) which facilitated the work of the family planning program in distributing information and providing services. It is also true that a considerable number of couples got such information and services through the private medical sector. However, the family planning program was not simply a reflexive adjunct of development. From beginning to end the program’s most important independent role was in converting for many the existing demand for fewer children, first into a demand for contraception and then converting that into actual use of contraception. In a society in which traditional patrilineal-patrilocal roles persisted, especially among the rural and less educated, many couples who wanted fewer children were ambivalent about that and also about use of contraception. For large numbers the program crystallized demand and brought it to an effective demand for contraception (Freedman, 1997).
2. Our initial concern that the persistence of traditional familial institutions would be a major barrier to a rapid demographic transition (and rapid socioeconomic development) proved to be wrong. Although such institutions decreased in prevalence and strength, 67 percent of young married couples still began married life living with the husband’s parents in 1980-1982, just before the TFR had declined to 2.1. Even more substantial "barriers" of traditional institutions in Bangladesh did not prevent a substantial fertility decline.

3. Diffusion proved to be a powerful force in spreading information and ideas about family planning, which affected contraceptive practice and fertility decline. It provided a multiplier factor for the effects of both program and non-program forces. Program design can take that into account, and it is of interest to policymakers.

4. Increasing age at marriage had a very significant effect in Taiwan, as in many other countries, on the rate of fertility decline during the transition to a TFR of 2.1 and even more so in the decline below that level. This was a result of the changing status of women, resulting from socioeconomic development. China is the only country I know of in which public policy actually affected the increasing age at marriage. Coercion was involved there.

5. It is a serious mistake to discount indications of substantial unmet need in developing countries. Such indications in the initial Taichung project and the national program following were validated as real when tested by serious, high-quality program effort. In Matlab a first effort failed, but improvements in the program had major results. I believe that "failure" of programs in such places as Pakistan were due to failure to mount a serious effort, not necessarily to the invalidity of reports of substantial unmet need.

6. The quality of care and service in Taiwan’s program was unusually high for a developing country, including high-quality follow-up studies of the IUD, new at that time. I believe that this may help to explain the rapid adoption of contraception and fertility decline among the poor, the rural, and the poorly educated. Reaching and serving such women was given special emphasis in the program. This is relevant for the renewed emphasis on quality of care generally in the last few years. There were no experimental tests of the effects of quality-care in Taiwan. Efforts to provide stronger evidence today are commendable.

7. We had suspected early that fertility decline might have an effect on social and economic development as well as the reverse. Recently there has been a sophisticated analysis indicating that for Taiwan the effect of education on reducing fertility made it possible to spend more on education for the fewer children so that the increase in human capital produced greater growth in GNP per capita (Huang, 1997). At the conference where this paper was presented (Conference on Population and the Asian Economic Miracle, Honolulu, East-West Center, January 7-10, 1997) there were similar results for other East Asian countries. K. C. Liu had also found such results in an earlier Taiwan analysis (Liu, 1983).
Notes

1 Dr. S. C. Hsu of the Joint Commission on Rural Reconstruction was the dynamic, charismatic leader who initiated our visit and energetically supported our joint activities.

2 In the parts of this memoir, especially about the Taichung experiment, I am quoting extensively from written reports of the 1960's to convey the flavor of the ideas we had at that time, as reported then. Unless otherwise indicated, the quotations are from Freedman and Takeshita (1969). Where the quotations are from other publications, this is indicated. I have occasionally interpolated minor changes, e.g., changes in verb tense from present to past. Other interpolations are enclosed in brackets. I have used these quotations to make clear what we said at the time. I am also motivated to do this because I wrote more lucidly then than now!

3 Since I could only be in Taiwan for periods of a few weeks or months at a time, it was essential to have a qualified person to serve as our resident representative for several years. Dr. Yuzuru Takeshita, exceptionally well qualified by training and research experience in the U.S. and Japan, agreed to take on this assignment. He was essential to the success of our joint work with the Taiwanese. His fluency in Japanese was very useful, since almost all the leading professionals in Taiwan had been educated in Japanese-language universities in Taiwan or Japan.

4 I had become familiar with these data resources much earlier from George Barclay’s excellent books on Taiwan, but I had not studied them carefully until the Taiwan opportunity became definite (Barclay, 1954a; 1954b).

5 Contraception (including sterilization or abortion or both).

6 The basic idea of such a study and the experimental design were proposed by Dr. Bernard Berelson and developed in conversations with our Taiwan colleagues.

7 However, many posters were quickly covered up and otherwise had a short life. In the post-experiment survey very few mentioned the posters.

8 In addition, a substantial number of women switched from less to more effective methods.

9 Our PSC research staff after Taichung included, prominently, Albert Hermalin, who came to us from Princeton and took over leadership from me in later years. Lolagene Coombs was an important member of the team for 17 years. Others working with us included Roger Avery, Anrudh Jain, Baron Moots, Robert Potter, and Jerry Sullivan. There was important help also from graduate students, many of whom used Taiwan data for their dissertations. Our Taiwanese colleagues who came to us for
graduate training included T. H. Sun, P. C. Liu, and H. S. Lin. Anrudh Jain from India made important contributions, both in his dissertation and in other collaborative work.

"We also contributed to improving and expanding the coverage of the Fact Book tables. Following our advice, tables were added on fertility by the age and education of the wife. However, we were not successful in persuading the Ministry of the Interior to include parity-specific or duration-specific fertility tables or to delete obsolete occupational status tables.

We got invaluable help in our efforts to improve the analysis and publication of Taiwan's demographic data from Dr. K.C. (Paul) Liu. Marshall Balfour introduced me to Paul on an early visit to Taiwan as an economist who might be worthy of doctoral training in the U.S. I made a compact with Paul that, if he worked at the Taichung Institute for a year and helped and learned about their research methods and results, we would then bring him to Michigan for graduate study. He did in fact come to Michigan for an M.A. and to Michigan State for a Ph.D., all under our support. When he returned to the Academia Sinica, he became a leading analyst of the role of development and the family planning program in Taiwan's demographic transition. He has been a wise advisor to our work in Taiwan, even to this day when the emphasis is on research on aging.


"Current use of contraception increased from 24 to 44 percent between 1965 and 1970 and the proportion of users among those wanting no more children increased from 39 to 64 percent.

"John Ross was an influential consultant on Korean matters at that time. He had entered the field of social demography in part because of a lecture he heard me give on Taiwan when he was a professor of sociology at Albion College. He asked for help in getting training to enable him to do that kind of work. I arranged a fellowship enabling him to spend a year at our Population Studies Center. He was resident when Sook Bang was in Ann Arbor and became his friend and advisor. Subsequently, John represented the Population Council in Korea and went on to a distinguished career in work on family planning. I am quite proud of our role in getting him started. I have recently found correspondence between John and our staff about his early work in Korea.

"During the Taichung program the Institute had consulting help on the service program from Lawrence Springfield, representing the Population Council."
References


