

PA-11-579

**INCENTIVE APPROACHES
IN
POPULATION PLANNING
PROGRAMS**

READINGS AND ANNOTATIONS

INCENTIVE APPROACHES IN POPULATION PLANNING PROGRAMS:
Readings and Annotations

Edited by Oliver D. Finnigan, III

Table of Contents	i
Editor's Foreword	ii
Introduction	iii
	Annotation
I. The Problem	
1. Fertility Levels and Fertility Trends in the Philippines, Wilhelm Flieger	1
2. Small Family Norm for Filipinos F. Lando Jocano	2
3. Desired Family Size and Efficacy of Current Family Planning Programs Ronald C. Ridker	3
II. Suggested Solutions	
1. Beyond Family Planning Bernard Berelson	4
2. Incentives in Family Planning Programs: Time for a New Look J. Timothy Sprehe	5
3. Integrated Incentives for Fertility Control Lenni W. Kangas	6
4. What May be Offered as Incentives Edward Pohlman	7
III. Incentive Programs To Date (April 1972)	
A. Incentives for contraceptive acceptance	
1. Population and Family Planning Programs: A Factbook Dorothy Nortman	8
2. Incentive Payments, IPPF working paper No. 4	9
3. Incentives in the Diffusion of Family Planning Innovations Everett M. Rogers	10
4. A Field Study of Family Planning Incentives and Field Staff in Indonesia Everett M. Rogers	11
5. Use of the Agent System in Seoul E. Hyock Kwon	12

6. Motivational and Incentive Components of the Korean Family Planning Program 13
 Taek Il Kim, Walter B. Watson

7. Field Structures in Family Planning 14
 Wajihuddin Ahmad

8. The Maximum Acceptance Study, Taiwan Committee for Family Planning 15

9. Non-Monetary Commodity Incentives in Family Planning Programs: A Preliminary Trial 16
 Gordon W. Perkin

10. The Ernakulam Vasectomy Campaigns 17
 Everett M. Rogers

B. Incentives for birth prevention

1. Savings Accounts for Family Planning, An Illustration from the Tea Estates of India 18
 Ronald C. Ridker

2. Planning, Starting, and Operating an Educational Incentives Project 19
 O. D. Finnigan, T. H. Sun

3. Law and Family Planning 20
 Luke T. Lee

IV. Ideas and Recommendations

1. Doing Research on Incentives 21
 Edward Pohlman

2. Testing Incentive Plans for Moving Beyond Family Planning 22
 O. D. Finnigan

V. Postscript

Litterbags and Dimes for Litterbugs 23
 Kenneth Goodall

Editor's Foreword

For those who wish to get a capsule view of the contents of this volume the editor has prepared introductions to sections and summaries of articles. These annotations are inserted as dividers between articles and are printed on colored paper. They are intended to provide the busy reader with the highlights of each article and with some continuity through editorial comments. As with all editing efforts, my own biases may enter into the picture and I therefore apologize in advance to authors and readers alike for these snapshots. I urge those who have the time to read the articles as well as the annotations.

All but seven of the twenty-four articles included in this volume have been produced in the past twelve months. Because of the rapidity with which new ideas are being produced, new disciplines are entering this field and new experiments are being begun, we urge readers to use this volume only as a starting point. Hopefully one year from now this compendium will seem primitive and outdated.

Since only 400 copies of this volume have been produced, only limited stocks are available. For further information, contact:

Office of Health & Public Services
USAID/Philippines
c/o American Embassy
Manila, Philippines

Oliver D. Finnigan, III
June 1972
Manila

3.20
KIMMY A. (D)

PN-AA7-579
15N52956

INCENTIVE APPROACHES
IN
POPULATION PLANNING
PROGRAMS

READINGS AND ANNOTATIONS

Introduction

For the past decade, family planning programs have been extending information and contraceptive services throughout the less developed world. As family planning programs have expanded they have been constrained somewhat by limited funds. It has therefore become necessary to use management tools of proven value to cut down on overhead expenses and to maximize the value of financial inputs in terms of performance outputs. In those countries with the most effective family planning programs, this has meant a heavy reliance on "fees for services rendered," awards, prizes, bonuses, and other reinforcements, collectively classified as incentives. These incentives have generally been direct or indirect payments in cash or in kind given to individuals or groups to encourage contraceptive acceptance or continuation.

A number of social scientists have been predicting that even if these programs depress fertility, they will only drop birth rates to the point where most unwanted births are prevented. They will have little or no effect on the number of wanted children, unless other measures are taken to change attitudes and values. These social scientists point out that the average couple in the developing world wants four or more children. They assert that because large numbers of children provide labor, income and old age security to families, one of the best means of reducing family size ideals would be to provide compensation to parents for having fewer children than is dictated by family economics.

This volume is an attempt to call together some of the key literature on incentives and compensations within and outside of family planning programs. The editor presents with an overview of the problem, a glimpse of some of the incentive plans which have been attempted to date and some suggestions for future testing or implementation.

It seems that all parties engaged in the dispute over how to best solve the population problem recognize that any person's notion about ideal family size is not innate; it is somehow acquired through learning. Learned behavior is, by definition, the product of environmental influence interacting with the learner. Any program that would control fertility must concern itself with those aspects of the environment that have an influence on the number of children born to a family. This range of influences is certainly much greater than informational programs and contraceptive delivery services. The problem, then, is to identify the full range of contingencies in the environment of a given population that influence family size, and to alter these elements in order to increase acceptance of contraception, and to decrease average family size. It is now fairly well accepted by sociologists, demographers, and program administrators that unless family size ideals are reduced by some means supplemental to present family planning efforts, birth rates will not fall or will fall only moderately in most countries.

PART I THE PROBLEM

This compendium discusses two complementary problems which are faced by population planners and by family planning program administrators. First, is the problem of maximizing the value of financial inputs in terms of performance outputs. As family planning programs have expanded, they have been constrained somewhat by limited funds. It has therefore become necessary to use management tools of proven value to minimize overhead expenditures and to insure that a given financial input will yield a specified performance output in terms of acceptance or continuation on contraception methods. In those countries with the most effective family planning programs, a good deal of experimentation has taken place with regard to various means of client recruitment and contraceptive delivery. In Korea, field experiments in a half dozen rural counties and one large urban district have helped to refine program approaches. Similar field experimentation has taken place in Taiwan (the Taichung experiment), Iran (Isfahan District), Pakistan (Sialkot), and in most states in India.

A second problem discussed in this volume is the inability of present family planning programs to significantly reduce the number of children that families wish to have. These programs are for the most part recruiting couples who now, or will eventually have, four or more children. There is, as yet, no built-in mechanism to insure that the fertility decline will not plateau as soon as fertility levels have dropped to the point where couples are having the number of children they wish to have (four or more).

In other words, the problems we face are (1) to help insure that efforts within family planning are effective in recruiting and holding couples and (2) to help provide a mechanism whereby couples can afford to decide to have fewer children than they had previously felt to be desirable.

In most respects the population growth picture in the Philippines is similar to that found in other less developed countries. In some few ways Philippine problems are unique or are shared with only a few other countries. Generalizations taken from Philippine population data may, therefore, be of benefit both within and outside of the Philippines. Because this compendium is prepared for Philippine colleagues, we will first take a look at the problems with which we are faced in the Philippines and will then look at other countries.

"Fertility Levels and Fertility Trends in the Philippines"
(summary only), Wilhelm Flieger, mimeographed, March 1972

This summary of findings from the National Demographic Survey can be further condensed as follows:

1. In the Philippines fertility remains high, although mortality has fallen drastically.
2. Women are marrying a bit later now; but once married they tend to have more children and to have them sooner. For married women under 35, fertility is still rising; and for older women, no change at all is evident.
3. Fertility levels today are higher even than pre-World War II "traditional" levels, and there is no indication of a nationwide breakdown of this pattern, except in industrialized metropolitan Manila, where some fertility decline has begun to become measurable. Even in more developed provincial areas there is no clear relationship between economic development and fertility.
4. At the time of this survey (1968) it was evident that "voluntary birth limitation has had no or insignificant effect on the entire rural population of the country as well as on the 'urban' classified populations of the chartered cities and poblaciones."

FERTILITY LEVELS AND FERTILITY TRENDS IN THE PHILIPPINES

Wilhelm Flieger**

University of San Carlos, Cebu City
and

Population Institute
University of the Philippines

March 1972

(SUMMARY)

The most salient features which emerged from the analysis of fertility data collected during the 1968 National Demographic Survey can be summarized as follows:

1. For the nation as a whole fertility levels are comparatively high. Filipino mothers today bear twice as many children as their counterparts in the United States, and three times as many as Swedish women.
2. The overall fertility level of the country, counting marital births only, is slightly declining. The basic reason for this is not decreasing fertility of individual mothers but increasing age at marriage. Age at marriage standardized rates indicate that marital fertility in the strict sense is increasing. There are fewer married women under 20 years of age today than there were a decade ago, but those who are married tend to have more children sooner than their predecessors.
3. Whatever overall fertility decline is observable, it is not the result of a nationwide breakdown of traditional fertility patterns. Most married women today as years ago start childbirth immediately after marriage and continue to reproduce at relatively high rates as long as nature permits.
4. Starting in the late 1940's and continuing through the mid-sixties, fertility increased from one birth cohort to the next younger one. In the beginning this movement constituted a restoration of traditional fertility levels which had been upset by the war. However, the rising trend persisted in the wake of national reconstruction and development and raised birth rates to levels considerably beyond those characterized as "traditional."
5. There are indications that women residing in the industrialized Metropolitan Manila area, who started childbirth five to ten years ago, have halted and, to a minor degree, reversed the increasing fertility trend. No such reversal is as yet noticeable among women living in other parts of the country.
6. Existing regional fertility differentials in the Philippines are sizeable. Total fertility rates range from more than 7.0 in Northern Mindanao and Bicol to 4.5 in the Ilocos Region and Southwestern Mindanao and Sulu.

** The author gratefully acknowledges the generous assistance received from Dr. Pullum, especially for the many computer runs which he provided.

- 8
7. The relatively low fertility levels recorded for Ilocos and Southern Mindanao seem to be traditional rather than exclusively the result of chronic underenumeration, as has often been assumed. More detailed examinations of social and cultural factors underlying the fertility behavior of the numerous cultural minorities which are concentrated in these areas are needed to detect the exact causes involved.
 8. Traditional regional fertility levels as represented by birth cohorts of women 45-49 years of age in 1968, including those of Metropolitan Manila, showed a high degree of uniformity. Present regional differentials, excluding the Ilocos and Southern Luzon, are largely due to variations in age at first marriage and post-war developments as migration and industrialization.
 9. Socio-economic development in general did not show any clear relationship to fertility levels. Regions which preserved their agricultural economic base likewise preserved high fertility levels (Central Luzon and Bicol) regardless of development. Only Metropolitan Manila and Southern Luzon, which form the industrial center of the country, displayed slightly decreasing fertility trends, thereby pointing toward a relation between industrialization and fertility.
 10. Regional health conditions gauged in terms of infant deaths were positively related to fertility levels. The explanation for this correlation is to be found most probably in the shortened lactation period of mothers who lost infants and who, consequently, were exposed to higher risks of pregnancy rather than in rational considerations to make up for incurred losses.
 11. Fertility changes were least marked in the Visayas Regions, where most of the poorest and underdeveloped provinces of the country are located.
 12. Fertility patterns evolving in the industrialized areas of Metropolitan Manila and Southern Luzon were characterized by a decrease in birth rates for the youngest as well as the oldest childbearing ages. While the on-going changes point toward possible developments similar to those observed in countries which successfully have lowered their fertility levels, they do not yet warrant to speak of a clear break with traditional fertility behavior. In all other regions of Luzon and Mindanao fertility for women under 35 is still rising, and for older women no change at all is evident.
 13. The continuance of traditional fertility patterns outside the industrialized areas of Manila and Southern Luzon seems to indicate that voluntary birth limitation has had no or insignificant effect on the entire rural population of the country as well as on the as "urban" classified populations of the chartered cities and poblaciones. Whether or not the slight fertility decline in the industrial center of the country was the result of family planning efforts which are concentrated in this area, or whether they are the consequence of institutional changes brought about by industrialization, is difficult to discern. Most probably both factors were involved.

On the whole, the picture of Philippine fertility developments over the last decade does not support the statement that

it has uniformly been found that a majority of couples with three living children wish to have no more (Bogue 1967:13).

Filipino mothers in 1968, including those most exposed to socio-cultural change and family planning activities generally have decided otherwise.

Annotation 2

"The Cultural Impediment to Population Control -
Small Family Norm for Filipinos"

F. Lando Jocano, Solidarity, January 1972

The author looks at family size as an ecological response to the economic and social environment. In the slums and rural areas, the perceived values of children as sources of labor and for old age support far outweigh the difficulty accruing from having more children than the family can support economically. To this rationale can be added the quality of machismo which is especially prevalent in urban slum areas and reinforces high fertility. The educated, economically secure segment of society perpetuates large family ideals by implicit and explicit rewards to big families.

The idea that large family size is normal is so firmly ingrained, that even couples who aspired for small families in surveys in 1964 and 1966 are burdened with big, growing ones; and in areas which have been saturated with family planning propaganda no measurable impact has been made on the number of children that couples wish to have. The concept of smallness as an acceptable attribute for families is not present in the folk culture of the communities studied, and this lack of a point of reference negates any attempt to introduce a small family concept.

The author points out that one of the preconditions for the reduction of family size is an ecological change such as industrialization; and that the only place where such a change has taken place is in the suburban fringe of Manila. He predicts that "without the corresponding ecological support in terms of community resources, the problem of population increase is likely to be with us for a long time What needs to be done by innovators is to generate, along side with family planning programs, an environment conducive to small size family - if this is our target goal - so that the change envisioned can be sustained."

The cultural impediment to population control

Small Family Norm for Filipinos

F. Landa Jocano

One of the major problems which continue to challenge the ingenuity and skills of innovation today is population control. In spite of the proliferation of techniques on pregnancy control, as well as sophistication in the training of population experts fielded to different parts of the world, demographers are still of the opinion that empirically, the massive rise of the world's population continues. In fact, some observers have expressed pessimism over its possible control within the next 30 years.

In the Philippines, the trend of population control is not very promising. Population growth is still remarkably high. The latest figure — if statistical data are reliable — indicates a level of 3.2% growth per year. Families likewise continue to maintain the average size of 5 to 7 children. Thus, the same

questions which were asked long time ago remain significant today when addressed to contemporary problems. What underlies this apparent sluggishness of response to programs of population control? Is it economic, social, political, or religious? Has it something to do with cherished beliefs and practices of the people? Is the problem ecological?

I will deal with some of the aspects of Filipino culture which may be useful in promoting family planning programs once these features of the culture are understood. For if we want to understand why people behave the way they do, or if we wish to probe deeply into the dynamics of society than simply describe its institutional framework, our job is to discover the implicit premises, the unquestioned postulates which give

Small Family Norm for Filipinos

rise to behavior. It is unquestionably within these hidden dimensions of community life that we can find clues for developing field strategies in promoting family planning programs.

The Concept of the Family

The problem here involves changes in the structure of the family. As in any society, the family is the basic building block of Philippine social organization; it constitutes the fundamental unit out of which the entire Filipino society is organized. And within it the total world view of the people is developed. This has been the case because the family, in many respects, is the first social unit to take hold of the individual before any other agencies in the community could contribute in moulding his personality. An understanding of how the people think of the family in the Philippine setting and of the role it plays in their lives is crucial in any attempt at innovation, especially at community level of action. This is particularly true to family planning programs wherein the innovation being introduced involves the most intimate aspect of conjugal behavior — pregnancy control.

The term family (*pamilya*) is used to refer to the social unit in Philippine society, formed through consanguinity, affinity and *compadrazgo*. It is normally composed of the father, the mother, and their unmarried child or children who are either adopted or biological offsprings of the spouses and who are either living with them or not. In its elementary form, Filipino family conceptually excludes all kindred outside the conjugal, parental, and filial relationships, although in actual practice other kinsmen are sometimes considered part of the unit. In its extended form, the family encompasses a wider range of bilateral relatives who may either live with the family or occupy "the next door" in a family compound or in an apartment. This recognition of the bilateral extension of kinship includes moral obligations to support these relatives in time of need or when they are too young to support them-

selves at the time of residence with the family.

The concept of family is an important and pervasive principle in Filipino culture. Often the interest of the family becomes superordinate over the interest of the individual members. In fact, many students of Philippine society have described the social system as "familial" in orientation. This observation is based on the fact that almost all activities in the community centers around the family. Within most neighborhoods, it is the entire family, not its individual members, which decides on the resolution of important matters. The concern over the family is primary over all other concerns. It is thus the *honor* of the family which is normally conceived to be at stake when an individual member of the unit commits a mistake, and not that of the person himself.

This apparently traditional description of the family must not mislead us to think that there are no variations in both the structure and function of the family in Philippine society. Indeed they are numerous. For example, the *type* of families found in rural Panay and the role they play in community life are certainly different from those found in Forbes Park, Makati, or in the slums of Sta. Ana, Manila. But when the basic characteristics — the unquestioned, implicit postulates — are examined, far greater similarities than differences stand out. Thus, it is possible to speak of the "Filipino family," and discuss in general terms its structure and function in Filipino society. In both urban and rural areas, the family functions as the main point of reference in the various networks of social relations; a reservoir of values and norms that legitimize much of interpersonal and group behavior in the community.

Seen from the prevailing emphasis on emotional security, economic support, and kinship loyalties, it is understandable that any attempt at changing the structure of the family will inevitably meet with some kind of "resis-

Solidarity

tance" — explicitly stated or implicitly enacted. The change in structure would mean a change in content of interpersonal relations within the family and this would undermine the existing pattern of cultural behavior. Hence, there has been a covert negation of family planning innovation on the part of most people and a tacit insistence among them on the maintenance of the *status quo*.

Family Size: An Ecological Response Pattern

Reliance on the family for the resolution of major economic and social problems is perhaps the main reason why most Filipinos have big families, in spite of verbalized preference for small ones. Available literature has indicated the range between 5 to 7 children, with variations from 8 to 10. In some sectors of the country, especially in the urban middle-class communities like the suburbs, the sizes range from 3 to 5. On the whole, big family sizes are maintained in the face of great efforts to cut them down.

From available data, it is clear that attempts to restructure the size of the family are fraught with difficulties because the *rationale* for maintaining big ones is more attuned to the adaptive needs of the members in the context of present-day social milieu. By *adaptive* is meant the capacity of an individual or unit to maintain life in a particular habitat. In the rural areas, the economic potentials of children and the assurance of early relief from the burden of work on the part of parents function as ecological pressures to which farmers respond accordingly. The same requirements are imposed by the slum environment on slum dwellers. Similar responses but articulated in a different context hold true for the educated, economically secure segment of society. The argument that these target populations need to limit the number of their children because they are the ones who are hit hard by economic problems does not appeal to many people in the so-called disadvantaged areas because it neglects the fundamental re-

quirements of adaptation.

Perhaps a few illustrations will help clarify the above-mentioned points on adaptation. In Western Bisayas and in Laguna Lake areas where we have concentrated our research for the last five years, the average sizes of families in communities studied ranged from 5 to 7 children. Interviews with parents concerned revealed that they recognized the difficulties accruing from having more children than what they could economically support. At the same time, however, they enumerated the advantages of big families which when compared with perceived difficulties outweigh the latter in terms of fulfilling much of the adaptive requirements for economic survival and psychological needs. In effect, the contribution children may make to the family larder, in the future, is part of the traditional, un verbalized family planning strategies of many target populations and this reinforces the need for bigger families.

The same is true with respect to slum dwellers. In fact, one more factor may be added — the high rate of illegitimacy. This latter phenomenon may be attributed to the impersonality of urban environment, where strict moral values, in terms of stigma the community attaches on deviants, are dysfunctional; to higher emphasis on *machismo* complex among males; and, also to the need for economic and psychological support among females. All of these factors add up to impose certain pressures on the people to behave in the manner which contribute to the increase in childbirth.

Machismo complex, for example, imposes on an individual to engage on a sexual role which could only be verified by the peer group to which he belongs in terms of the number of affairs he maintains and children he sires either with his legitimate wife or his mistresses. In fact, it is not surprising to find a laborer or jeepney driver earning hardly P300 a month, to have two or three *kabit*s (mistresses). For a woman, having children likewise means additional source of economic income. It is a dominant belief among informants

Small Family Norm for Filipinos

that a man may not support his mistress but he can be coerced into supporting the children. Moreover, most female informants are unanimous in their anticipation that "being a *kabit* is a temporary affair wherein youth is dissipated in the process. Without a child or children, one is in a pitiable situation in old age." In effect, this view supports the adaptive requirements of slum life.

Preference for big families is not only the core value of the disadvantaged groups just mentioned. Civic organizations and educated leaders all over the country almost hero-worship big families in the form of annual awards given to "Family of the Year," "Parents of the Year," "Outstanding Parents," and so forth. Although the awards are generally focused on achievements of members of the families selected, the sacrifices parents underwent in the process of bringing up a big family are publicly recognized and extolled as virtues to be emulated. Faced with this public emulation of big families it is doubtful whether small ones have any virtue at all. As the "awarding ritual" becomes an annual affair, it likewise becomes part of the aspirations of most people; a perceptual model toward which efforts have to be geared if only to gain public recognition. Implicitly, acceptance is a powerful stimulus for achievement-motivation and, if the society gives high premium for big families, then the acceptance-goal of people will certainly be directed to this end. One needs not wonder therefore that, in spite of our efforts, the Filipino family remains big.

Family Size As a Cultural Perception

The alarming persistence of big families in both rural and urban communities we have studied stimulated us to tackle the problem of what family size means to the people. Perhaps it is the perceptual domain of target populations that we could find clues for satisfactory explanation of this phenomenon. In our search for models, however,

we run into some difficulties. We cannot find any consensus among informants as to what is the most preferred norm for family sizes. What they verbalize contradict with what they have in terms of family size. Even those who aspired for smaller families in Malitbog in 1964 or in the slum of Sta. Ana in 1966 are today burdened with big, growing ones. In other words, certain factors must have come in to play other than biological determinism which earlier aspirations indicated. In the Laguna Lake area, levels of aspirations do not jibe with actual children. The area has been one of the most worked over place in terms of family planning education programs. Other than electric media, newspapers, magazines, and posters, promoters of the program have conducted personalized campaigns for the reduction of family sizes — from big to small. This seems to be far from having been achieved.

In order to specify what cultural factors might have entered into the picture, we attempted to probe into the cognitive domain of the local culture. It is interesting to note that in both Western Bisayas and Laguna Lake area, the people do not have specific term for *smallness* when referring to family units. In Laguna, terms like *kaunti*, *ilan*, *maliit* and similar diminutive terms and phrases are used to give emphasis on "smallness." However the usage is more analogic than specific. *Maliit na pamilya* is applicable but does not necessarily describe actual size of the unit because the term *maliit* emphasizes smallness with reference to individuals, physical entities, as in *batang maliit*. In fact, when the phrase *maliit na pamilya* was repeated to a number of informants, I was corrected by them because I was not speaking Tagalog correctly.

On the other hand, the term for size is precise — *laki*. This is generic. Even in asking questions, the correct phrase is: "*Gaano kalaki ang inyong pamilya?*" (How big is your family?) Smiles and expressions of "ahs" are registered on the faces of those present in the inter-

Solidarity

views when an informant stated that they "have limited number of children." As a participant observer, I always get teased for having only one child. In their judgments I am either *baog* (sterile), *mahina* (weak), or simply stingy and "what a pity for the child — *walang kalaro* (no play-mates)."

In other words, the concept of smallness as part of the family attribute is not present in the folk culture of the communities studied. In contrast, bigness in family size is the ideal type and hence it is sustained by the perceptual categories present in cognitive domain of the people. To stress over and over the need for small size family or to emphasize it as desirable is to expect certain misconception concerning the innovators' motives since there is no point of reference in the culture which could support the new idea.

Precondition for Reduction of Family Size

Proponents of small size families always point to the achievement of western societies as models that these are desirable. There is no quarrel about this. The main problem is — how did western societies achieve the shift? Is it possible to replicate their experiences in a non-western society like the Philippines? The answer is *yes*, provided we also replicate the ecological conditions which brought about the shift or change in western societies. Again, one has to look at the adaptive requirements of environment which will sustain the change once introduced.

Perhaps it is safe to say that one of the preconditions for the reduction of family size to a desired number is ecological change. Industrialization is one of such changes which is necessary for sustained change. For a model one has to examine the conditions in industrial communities or even in the suburbs of Greater Manila. In Santolan, Marikina, for example, our data indicate that as resources in terms of income have increased due largely to the construction of 7 factories in the community, this was followed by a decrease in other op-

portunities like housing or labor shortage. Household help became a necessity, just as staple food are to the families concerned.

Working couples had to make certain decisions concerning the family. Either the wife quits her job or a househelp is hired. In case of the latter this means additional family expenses in terms of salary of the help; if the choice is the former, this would also mean reduction of income. Most couples resorted to spacing of children.

In other words, it is generally the ecological pressure which generates change and gives it direction. For even if the program is very good but the local resources cannot sustain it, its implementation is likely to encounter with some difficulties if not outright rejection. This is perhaps one of the reasons why Family Planning programs, though much energy has been expended in terms of education and training of promoters of change, only achieve very minimal effect. We predict, on the basis of available data, that without the corresponding ecological support in terms of community resources, the problem of population increase in the Philippines is likely to be with us for a long time.

Family planning innovation is not different from other kinds of change. It has to be maintained at the community level of action. In the field of economic change for example, innovators have been sponsoring the idea that education is the answer to the problem. However, many have not quite realized that decision making in this connection is a painful process. The parents have to decide between making the child contribute to the economic larder early or to delay his earnings due to further education. Often the former triumphs — the child, as soon as he is able, takes a job and contributes to the economic life of the entire family.

Norm for Small Family

From the examples I have just enumerated, it is very difficult to anticipate or even suggest a criteria for a desirable norm for family size in the

Small Family Norm for Filipinos

Philippines. It is even harder to be prescriptive about it. Our research data from those communities studied do not indicate any common preference for family size norm, statistical or cultural. Thus, to state any categorical number without seriously considering the ecological conditions which define it is to be unrealistic; it shows unfamiliarity with realities of community life. Unlike any other form of innovation, family planning cannot be shown in terms of positive demonstration that small families are better than having more children. For one thing it is difficult to show empirically that better health, better level of living, better education, better employment and so on are the resultant effects of small families. Family planning is undemonstrable, although its consequences are not, and therefore, it must be attacked from the aspirational and adaptive standpoint.

Moreover, norms are difficult to specify. Even informants themselves find it hard to make explicit familial norms. There are several reasons for this. On the whole, the difficulty rests on the context and situation. People are reluctant to generalize when asked direct questions about norms, although they make many implicit generalizations when talking spontaneously. What

emerged from our research was that what might be a norm for one individual may not be the norm for another. Certainly, the manner in which big families succeed in business cannot be used to suggest big families for lower class families and vice versa.

To say therefore that small-size families are desirable for Filipinos is to say nothing but the circumstances which may make this possible. Even the term "average," as generally applied to the Filipino family, is a misnomer. It can be used to describe almost anything. Statistically, it simply defines a consistent clustering of numbers at a given point in time. However, it does not mean that culturally this enumerated response pattern is the preferred value such that once we have the average index, we can develop strategies for maintaining the desired norm. As William Goode said: "Conception is an intimately personal matter, not a mass phenomenon."

In a word, the decision as to what family size is desirable is better left to the individual themselves. What needs to be done by innovators is to generate, along side with family planning programs, an environment conducive to small-size family — if this is our target goal — so that the change envisioned may be sustained.

"Desired Family Size and the Efficacy of Current Family Planning Programmes,"

Ronald C. Ridker, reprinted from Population Studies Vol. XXIII, No. 2, July 1969

This paper examines the belief that the number of couples currently desiring to limit family size is sufficiently large (and the intensity of their desire sufficiently strong) that the provision of supplies, services and education - the standard family planning package - will be adequate to bring the birth rate down to acceptable levels within a reasonable time period. Evidence comes from other countries, from attitude surveys and behavioral studies in India, from a priori considerations about what is reasonable to expect and from certain demographic considerations. The most reasonable conclusion to draw from this evidence is that the belief is not correct. If the birth rate is to be brought down to target levels, additional methods - perhaps monetary incentives to encourage small families - seem to be necessary.

Reprinted from
POPULATION STUDIES, Vol. XXIII, No. 2, p. 279, July, 1969

Desired Family Size and the Efficacy of Current Family Planning Programmes

RONALD G. RIDKER

THE PROPOSITION

Current family planning programmes emphasize the provision of supplies, services and education. Attempts to change motivation through the use of monetary incentives have played a very minor role so far. Implicit in this ordering of priorities must be the belief that the number of couples latently or actively desiring to limit family size is sufficiently large – or can be made sufficiently large through education and persuasion – to bring the birth rate down to acceptable levels reasonably soon.

This paper reviews the scattered bits of evidence related to this belief and finds that it is a highly doubtful proposition. While there can be no doubt that current family planning programmes will have some significant impact, it is very unlikely that by themselves they can achieve anything like what has come to be considered an acceptable target. Methods with a sharper cutting edge must be added.

The evidence, such as it is, is hardly conclusive. It consists of an interpretation of results from other countries that have used family planning programmes similar to that of India, information from both attitude and behavioural studies within India, a number of *a priori* considerations about what is reasonable to expect, as well as certain demographic considerations. But taken together these bits and pieces form a picture that is more persuasive than the arguments that can be mustered in support of the belief that supplies, services and education will be sufficient.

Before reviewing this evidence, a word should be added about what we mean by a sufficient lowering of the birth rate. The official goal of the Indian family planning programme has been a birth rate of 25 by the middle of the 1970's. Of course, this can only be accepted as an interim target: since India is overpopulated by virtually any standard one wants to use, the appropriate long-run target should be a birth rate somewhat lower than the death rate, certainly not any higher. But the interim target would represent a very dramatic improvement in the situation, even if it were achieved by the early 1980's. A target somewhere in this range, therefore, can serve as a good background for the following discussion.

EVIDENCE FROM OTHER COUNTRIES

A debate is in progress about the extent to which the official family planning programmes in Japan, Taiwan, Hong Kong, Singapore and South Korea have been responsible for the fall in their birth rates. Monetary incentives were not widely or intensively used in these programmes. While there is no doubt that they speeded up the process of demographic transition, it is not clear how successful they would have been had they been initiated ten or twenty years earlier, before the socio-economic situation became favourable. In Japan and Taiwan the birth rate began to fall before the initiation of official family planning programmes, and in Japan abortions, which were not advocated in the official programme, were chiefly responsible. Except for South Korea, all these societies are highly secular, relatively urbanized, literate, growing in prosperity, and with sharply visible limits to their possibilities for geographical expansion. In South Korea, where incidentally the evidence is much less clear, recent political events operating on a somewhat secular population may be clearing the way for a change in customs.

While it is possible that traditional family planning programmes may ultimately prove effective in settings where these favourable attributes are not present, there is hardly any evidence at present that they have been. In such inauspicious settings some alternative must be found to the indirect socio-economic pressures for smaller families, something that will bridge the time gap necessary for the modernizing forces to work themselves out.

EVIDENCE FROM ATTITUDE SURVEYS

If properly interpreted, evidence from attitude surveys suggests that desired family size is not much below actual family size. The typical response of Indian couples to questions about ideal family size appears to be in the range of three to four children, closer to three in urban areas and closer to four in rural areas.¹ However, 'effective desire' – that is, a level of desire sufficiently intense so that the average couple's behaviour is capable of being influenced by the provision of supplies and information – is for a family size larger than these numbers indicate.

First, when a person responds to a question about ideal family size, he generally thinks in terms of an ideal sex composition; in practice, if the latter is not obtained, he is likely to prefer a

¹ S. Kaur and J. Edlefsen, 'Some Observations Regarding KAP Research in India' (New Delhi: USAID Mission to India, March 1968), pp. 10-11.

larger family size. One urban survey which found that the 'ideal' number of children is three also found that parents want two boys and one girl.² A rural survey found that when parents were asked how many girls they would have before they stopped trying for a boy, 83% indicated they would have four or more and 50% six or more.³

Secondly, when a parent indicates a desire for a certain number of children, he undoubtedly means a certain number surviving to adulthood. According to a recent computer simulation study, an Indian couple must bear on the average 6.3 children in order to have 95% certainty that one son will survive to the father's 65th birthday.⁴

Furthermore, some of the evidence gathered by these attitude surveys suggests that for a significant number of respondents, the intensity of their expressed desires for a given family size is too low to influence their actions. Other evidence suggests that the *validity* of many responses must be questioned, that is, that the respondent may never have thought about the question before, may change his answer after further thought, or may provide different answers at different stages of his life cycle or even on different days of the week.⁵ Persons falling into either of these categories may well have two or more children beyond their initially expressed desire, before they are really willing to take conscious actions to limit family size.

EVIDENCE FROM BEHAVIOUR STUDIES

Evidence from actual behaviour is the least satisfactory, but two significant pieces of information can be offered. First, we might judge the desired number of children by the parity of couples that accept a contraceptive method. On this basis, the desired family size is even higher than indicated in attitude surveys. A review of about a dozen studies of sterilization acceptors indicates that the median age at the time of acceptance was over 36 for men (in some studies the mean was as high as 46), and above 30 for women, at which ages they typically had between four and six living children. Even in the case of loop acceptors, the mean number of living children at the time of acceptance was between three and four; considering the fact that 50% of IUD's are removed or expelled within a period of 18 months,⁶ the actual number of children that loop acceptors will eventually have could be considerably above these numbers. While these data must be qualified, they do tend to provide rough support for the conclusions drawn from the attitude surveys.⁷

² Thomas Poffenberger, 'Urban Indian Attitudinal Response and Behavior Related to Family Planning: Possible Program Implications' (New Delhi: Ford Foundation Mission to India, Draft of 6th February 1968), pp. 6-7.

³ Thomas Poffenberger, 'Motivational Aspects of Family Planning in an Indian Village', Chapter V, Draft report prepared for the Central Family Planning Institute, New Delhi, 1st March 1968.

⁴ D. A. May and D. M. Heer, 'Son survivorship and family size in India. A computer simulation', *Population Studies*, 22, 2, July 1968, pp. 199 ff.

⁵ On both points, see information scattered throughout the papers referenced in footnotes 1, 2 and 3.

⁶ Kaur and Edlefsen, *op. cit.*, pp. 4-5.

⁷ While it may be argued that many couples acquire access to modern family planning methods only after already having more children than they want, it should also be remembered that this method of judging ideal family size ignores all those who have access to family planning methods and choose not to use them. Given their large numbers and predominantly rural dispersion (see *ibid.*, p. 10) a rough guess would place the completed family size of such respondents at close to the average of 3.7 living children for the country as a whole, and of course, the number of live births at substantially more.

These findings are supported by a detailed study undertaken by Wyon and Gordon in 16 Indian villages with a combined 1960 population of 16,000. This study attempted, among other things, to test the proposition that the provision of supplies and education would lower the birth rate. One set of villages was provided with modern contraceptive supplies (primarily foam tablets after ascertaining that these were most acceptable) on an intensive and continuing basis for four years. Another set of villages was observed, but not provided with this programme. In the end, demographic data from both areas indicated that the birth rate in the first set of villages had not changed significantly; nor was it significantly different from that observed in the control villages. While it may be argued that some other method of contraception would have been more successful, Wyon believes that the principal problem was inadequate desire for smaller families.⁸ It is possible that a similar study undertaken to-day would show different results, and Wyon is in the process of setting up new studies that will shed light on this point; but at present this is the best evidence available.

A PRIORI CONSIDERATIONS

The above points suggest that desired family size is not far below actual (completed) family size. This evidence is sketchy and could be wrong. But it is a very reasonable finding. *Why should there be a large gap between desired and actual family size?*

One answer to this question is that without modern methods of family planning, a couple could not easily satisfy its desire for a smaller family. It should be remembered, however, that in many other countries birth rates fell long before the advent of modern contraceptive methods and family planning programmes. For this reason, if for no other, we should be cautious about relying too heavily upon easy access to supplies as a means of lowering the birth rate.

Another possible reason for a large gap is that there is a substantial time lag between the appearance of such a gap and the adjustment in actual family size. While this is possible, it is doubtful whether in India there have been such rapid changes in either desired family size or death rates (which would increase actual family size) as to significantly interfere with the adjustment process. Certainly these changes have been slower than in countries like Japan, Taiwan, Hong Kong, Singapore and South Korea. This point is debatable. But if we accept the argument that the gap is small, we should expect to find the desired number of children not much below 4.5, which is our estimate of the actual number of children alive at the time of completion of family size.⁹

TARGETS VERSUS DEMOGRAPHIC CONSIDERATIONS

Suppose the mean number of children desired at the completion of the couple's fertile period were four, and further suppose that family planning were so effective that, after some transition period,

⁸ Based on personal conversations with Wyon, plus the following articles by John B. Wyon and John E. Gordon, 'A long-term prospective-type field study of population dynamics in the Punjab, India', in Clyde V. Kiser (ed.), *Research in Family Planning* (Princeton, 1962), and 'Field studies in population dynamics and population control', *American Journal of the Medical Sciences*, 240, 361 (1961).

⁹ Applying mortality rates to a figure for completed fertility (live births per woman at the completion of her fertile period) of 7.4, as reported in the *National Sample Survey No. 7, Couple Fertility*, December 1955, pp. 46 and 47.

no family had more than this number of children. Would the birth rate then be at an acceptable level? We have not worked this possibility out in great detail, but if we assume that a couple must have 25% more live births than is necessary to achieve a completed family size of a given number, and that the ratio of live births per woman completing childbearing to the equilibrium birth rate is the same in India as it is in a study in Pakistan, we come to the conclusion that the birth rate would eventually fall from around 40 to about 30. Even if the desired (completed) family size involved only three children, the equilibrium birth rate would be brought down only to 23.¹⁰

Now contrast these figures with a target birth rate of 25 by 1975-80. More than a generation is usually required to achieve any equilibrium birth rate after an initial change is introduced. Combining this point with the fact that family planning programmes are hardly 100% effective (as these calculations assume), we must conclude that the target cannot be reached unless the desired (completed) family size involves even fewer than three living children.

Another more dramatic way to put this point is provided by an analytical exercise. It may be shown that the birth rate would only come within reach of the 1975-80 target of 25 if starting to-day - not in two or three years' time - no family had more than three children and an increasing number had even fewer. More accurately, the analysis on which this statement is based assumes that no family with less than three live births has more than three live births starting in 1966 and that the age-specific fertility rates for women below the age when they typically have their third live birth decline to an important degree. Even under these assumptions the birth rate barely drops to 25 by 1976.

Finally, it should be added that during the next decade or so there are likely to be strong pressures for the birth rate to rise. The main argument in support of this view is related to the expected rise in incomes of rural families. For this group, the initial effect of increased incomes is likely to be an improvement in health and nutrition levels which could significantly increase fecundity and live fertility rates, as well as the number of persons completing their fertile period. This likelihood is supported by at least one bit of statistical evidence indicating a positive correlation between average income and age-specific birth rates for countries at very low levels of income per head.¹¹ It is also supported by a detailed discussion of the prospective trends in fertility rates for India provided by Coale and Hoover.¹² Increasing family planning efforts may have to be made merely to keep the birth rate from rising.

¹⁰ According to H. A. Pedersen, USAID, Pakistan, a simulation model of the Pakistan population indicates that eight live births per woman completing childbearing is compatible with an equilibrium birth rate of 50, and that a maximum completed fertility of three live births is related to a birth rate of 19.

¹¹ See Irma Adelman, 'An econometric analysis of population growth', *American Economic Review* (June 1963), pp. 321-323.

¹² Ansley J. Coale and Edgar M. Hoover, *Population Growth and Economic Development in Low-Income Countries, A Case Study of India's Prospects* (Princeton, 1958), pp. 55-74.

284 DESIRED FAMILY SIZE OF FAMILY PLANNING PROGRAMMES

CONCLUSION

It is certainly realized that the above evidence and arguments cannot be held with a high degree of confidence. But we have nothing better to go on. Putting these bits and pieces together generates a picture that offers little room for maintaining the sanguine view that there is a sufficient number of couples currently desiring to limit family size so that present programmes emphasizing supplies, services and education will be adequate to reach them in a reasonable period of time.

All this is not to say that the birth rate cannot be brought down to reasonable levels within an acceptable time frame. But it does strongly suggest that to do so, more work on motivation is required. Some means must be found to increase the number of couples desiring small families, and to increase the intensity of their desire to a point where they will act in an effective manner early in their married life, not after they find out for themselves that they have too many children.

PART II SUGGESTED SOLUTIONS

Because family planning (the delivery through a health system of contraceptive information and services) is politically acceptable, it has been chosen by most countries as a first step toward solving the population problem. Some social scientists, however, have expressed grave doubt about the consequences of instituting national family planning programs, especially if these programs are regarded by the implementing governments as the only step needed to solve the population problem. They point out that in some countries family planning may have either no effect, or only a very small effect on birth rates. However, the fact that the government is "doing something" to stem population growth may postpone more effective action.

Social scientists have therefore proposed a broad range of programs which go beyond family planning, and could have some effect on birth rates. Most of these proposals presuppose the existence of a nationwide family planning effort in order to provide contraceptive service. All of them aim at changing the environment in which families are formed to favor fewer children.

"Beyond Family Planning," Bernard Berelson,
Studies in Family Planning, Vol. 1, No. 38,
February 1969

This landmark paper was the first organized attempt to weigh various suggestions for reducing fertility. The author looks at a range of proposals which he places in the following categories:

1. Extension of voluntary fertility control;
2. Establishment of involuntary fertility control;
3. Intensified educational campaigns;
4. Incentive programs;
5. Tax and welfare benefits and penalties;
6. Shifts in social and economic institutions;
7. Approaches via political channels and organizations;
8. Augmented research efforts.

Dr. Berelson then evaluates each of these broad categories of proposals according to the following criteria:

1. Scientific/medical/technological readiness;
2. Political viability;
3. Administrative feasibility;
4. Economic capability;
5. Moral/ethical/philosophical acceptability;
6. Presumed effectiveness.

Annotation 4a

He concludes that, compared to the other eight categories, only family planning receives a high rating within each of these six criteria. However, he indicates that "...there appears to be a progression in national efforts to deal with the problem of population control." The first step is recognition of the problem. The second step is an action program in family planning. "Beyond that it apparently takes (1) some degree of discouragement over progress combined with (2) some heightened awareness of the seriousness of the problem to move the effort forward. To date these conditions have been most prominently present in India - and that is the country that has gone the farthest steps along the lines mentioned above. It may be that in this respect the Indian experience is a harbinger of the international population scene. It is only natural that on matters of such sensitivity, governments try 'softer' measures before 'harder' ones; and only natural, too, that they move gradually from one position to the next to realize their goals."

Studies in Family Planning

A PUBLICATION OF
THE
POPULATION
COUNCIL

Number Thirty-Eight

February 1969

BEYOND FAMILY PLANNING

THE following paper reviews various proposals made for dealing with "the population problem" beyond the current efforts of national programs of voluntary family planning. It was written by Bernard Berelson of The Population Council.

A condensed version is appearing in a current issue of Science magazine.

This paper rests on these propositions: (1) among the great problems on the world agenda is the population problem; (2) that problem is most urgent in the developing countries where rapid population growth retards social and economic development; (3) there is a time penalty on the problem in the sense that, other things equal, anything not done sooner may be harder to do later, due to increased numbers; and accordingly (4) everything that can properly be done to lower population growth rates should be done, now. As has been asked on other occasions, the question is: what is to be done? There is a certain agreement on the general objective (i.e., on the desirability of lowering birth rates, though not on how far how fast), but there is disagreement as to means.

The 1960's have witnessed a substantial increase of awareness and concern with population matters throughout the world¹ and of efforts to do something about the problem, particularly in the developing countries. That something typically turns out to be the establishment of national family planning programs, or rough equivalents thereof. There are now 20 to 25 countries with efforts along this line, on all three developing continents, all of them either set up or revitalized in this decade. Thus, the first response to too high growth rates deriving from too high birth rates is to introduce voluntary contraception on a mass basis, or try to.

Why is family planning the first step taken on the road to population control? Probably because from a broad political standpoint it is the most acceptable one:

since closely tied to maternal and child care it can be perceived as a health measure beyond dispute; and since voluntary it can be justified as a contribution to the effective personal freedom of individual couples. On both scores, the practice ties into accepted values and thus achieves political viability. In some situations, it is an oblique approach, seen as the politically acceptable way to start toward "population control" on the national level by promoting fertility control and smaller family size among individual couples. Moreover, it is a gradual effort and an inexpensive one, both of which contribute to its political acceptability. Though the introduction of family planning as a response to a country's population problem may be calculated to minimize opposition, even that policy has been attacked in several countries by politicians who are unconvinced and/or see an electoral advantage in the issue.

How effective have family planning programs been as a means toward population control? There is currently some controversy among qualified observers as to their efficacy,² and this is not the place to review that issue. But there is sufficient agreement on the magnitude and consequence of the problem that additional efforts are needed to reach a "solution", however that is responsibly defined.

For the purpose of this paper, then, let us assume that today's national family planning programs, mainly via voluntary contraception, are not "enough"—where "enough" is defined not necessarily as achieving zero growth in some extended present but simply as lowering birth

rates quickly and substantially. "Enough" begs the question of the ultimate goal and only asks that a faster decline in population growth rates be brought about than is presently in process or in prospect—and, within the range of the possible, the faster the better.³ Just to indicate the rough order of magnitude, let us say that the proximate goal is the halving of the birth rate in the developing countries in the next decade or two—from, say, over 40 births per thousand per year to 20–25.⁴ For obvious reasons, both emigration and increased death rates are ruled out of consideration.

What is to be done to bring that about, beyond present programs of voluntary family planning?⁵ I address that question in two ways: first, by listing the programs or policies more or less responsibly suggested to this end in recent years; and second, by reviewing the issues raised by the suggested approaches.

Proposals: Beyond Family Planning

Here is a listing of the several proposals, arranged in descriptive categories. (There may be a semantic question involved in some cases: when is a proposal a proposal? Are "suggestions" or "offers for consideration" or lists of alternatives to be considered as proposals? In general, I have included all those cases presented in a context in which they were readily perceived as providing a supplementary or alternative approach to present efforts. The list may include both proposals for consideration and proposals for action.)

A. Extensions of Voluntary Fertility Control

1. Institutionalization of maternal care in rural areas of developing countries: a feasibility study of what would be required in order to bring some degree of modern medical or paramedical attention to every pregnant woman in the rural areas of five developing countries with professional back-up

for difficult cases and with family planning education and services a central component of the program aimed particularly at women of low parity (Taylor & Berelson⁶).

- 2. Liberalization of induced abortion (Davis⁷, Ehrlich⁸, Chandrasekhar⁹).

B. Establishment of Involuntary Fertility Control

- 1. Mass use of "fertility control agent" by government to regulate births at acceptable level: the "fertility control agent" designed to lower fertility in the society by five per cent to 75 per cent less than the present birth rate, as needed; substance now unknown but believed to be available for field testing after 5-15 years of research work; to be included in water supply in urban areas and by "other methods" elsewhere (Ketchel¹⁰); "addition of temporary sterilants to water supplies or staple food" (Ehrlich¹¹).
- 2. "Marketable licenses to have children", given to women and perhaps men in "whatever number would ensure a reproduction rate of one", say 2.2 children per couple: for example, "the unit certificate might be the 'deci-child', and accumulation of ten of these units by purchase, inheritance or gift, would permit a woman in maturity to have one legal child" (Boulding¹²).
- 3. Temporary sterilization of all girls via time-capsule contraceptives, and again after each delivery, with reversibility allowed only upon governmental approval; certificates of approval distributed according to popular vote on desired population growth for a country, and saleable on open market (Shockley¹³).
- 4. Compulsory sterilization of men with three or more living children (Chandrasekhar¹⁴); requirement of induced abortion for all illegitimate pregnancies (Davis¹⁵).

C. Intensified Educational Campaigns

- 1. Inclusion of population materials in primary and secondary schools systems (Davis¹⁶, Wayland¹⁷, Visaria¹⁸): materials on demographic and physiological aspects, perhaps family planning and sex education as well; introduced at the secondary level in order to reach next waves of public school teachers throughout the country.
- 2. Promotion of national satellite television systems for direct informational

effect on population and family planning as well as for indirect effect on modernization in general: satellite broadcasting probably through ground relays with village receivers (Ehrlich¹⁹, Meier & Meier²⁰, UNESCO²¹, Schramm & Nelson²²).

D. Incentive Programs: This term requires clarification. As used here, it refers to payments, or their equivalent, made directly to contracepting couples and/or to couples not bearing children for specified periods. It does *not* refer to payments to field workers, medical personnel, volunteers, *et al.*, for securing acceptance of contraceptive practice; that type of payment, now utilized in many programs, is better called a fee or a stipend in order to differentiate it from an incentive as used here. Beyond that distinction, however, the term is fuzzy at the edges: is the provision of free contraceptive consultation and supplies to be considered an incentive? or free milk to the infant along with family planning information to the mother? or free transport to the family planning service, which then provides general health care? or a generous payment in lieu of time off from work for a vasectomy operation? or even a financial burden imposed for undesirable fertility behavior? In the usage here, I try to limit the term to direct payment of money (or goods or services) to members of the target population in return for the desired practice. This usage is sometimes referred to as a "positive" incentive in distinction to the "negative" incentive inherent in tax or welfare penalties for "too many" children (E below).

- 1. Payment for the initiation or the effective practice of contraception: payment or equivalent (e.g., transistor radio) for sterilization (Chandrasekhar²³, Pohlmann²⁴, Samuel²⁵, Davis²⁶) or for contraception (Simon²⁷, Enke²⁸, Samuel²⁹).
- 2. Payment for periods of non-pregnancy or non-birth: a bonus for child spacing or non-pregnancy (Young³⁰, Bhatia³¹, Enke³², Spengler³³, Leasure³⁴); a savings certificate plan for twelve-month periods of non-birth (Balfour³⁵); a lottery scheme for preventing illegitimate births among teenagers in a small country (Mauldin³⁶); "responsibility prizes" for each five years of childless marriage or for vasectomy before the third child, and special lotteries with tickets available to the childless (Ehrlich³⁷).

E. Tax and Welfare Benefits and Penalties: i.e., an anti-natalist system of social services in place of the present pro-natalist tendencies.

- 1. Withdrawal of maternity benefits, perhaps after N (3?) children (Bhatia³⁸, Samuel³⁹, Davis⁴⁰) or unless certain limiting conditions have been met, like sufficient child spacing, knowledge of family planning, or level of income (Titmuss & Abel-Smith⁴¹).
- 2. Withdrawal of children or family allowances, perhaps after N children (Bhatia⁴², Titmuss & Abel-Smith⁴³, Davis⁴⁴).
- 3. Tax on births after the Nth (Bhatia⁴⁵, Samuel⁴⁶, Spengler⁴⁷).
- 4. Limitation of governmentally provided medical treatment, housing, scholarships, loans and subsidies, etc., to families with fewer than N children (Bhatia⁴⁸, Davis⁴⁹).
- 5. Reversal of tax benefits, to favor the unmarried and the parents of fewer rather than more children (Bhatia⁵⁰, Titmuss & Abel-Smith⁵¹, Samuel⁵², Davis⁵³, Ehrlich⁵⁴, David⁵⁵).
- 6. Provision by the state of N years of free schooling at all levels to each nuclear family, to be allocated by the family among the children as desired (Fawcett⁵⁶).
- 7. Pensions for poor parents with fewer than N children as social security for their old age (Samuel⁵⁷, Ohlin⁵⁸, Davis⁵⁹).

F. Shifts in Social and Economic Institutions: i.e., broad changes in fundamental institutional arrangements that could have the effect of lowering fertility.

- 1. Increase in minimum age of marriage: through legislation or through substantial fee for marriage licenses (David⁶⁰, Davis⁶¹); or through direct bonuses for delayed marriage (Young⁶²); or through payment of marriage benefits only to parents of brides over 21 years of age (Titmuss & Abel-Smith⁶³); or through a program of government loans for wedding ceremonies when the bride is of a sufficient age, or with the interest rate inversely related to the bride's age (Davis⁶⁴); or through a "governmental 'first marriage grant' . . . awarded each couple in which the age of both (*sic*) partners was 25 or more" (Ehrlich⁶⁵); or through establishment of a domestic "national service" program for all men for the appropriate two-year period in order to develop social services, inculcate mod-

ern attitudes including family planning and population control, and at the same time delay age of marriage (Berelson, Etzioni⁶⁶).

- 2. Promotion or requirement of female participation in labor force (outside the home) to provide roles and interests for women alternative or supplementary to marriage (Hauser⁶⁷, Davis⁶⁸, David⁶⁹).
- 3. "Direct manipulation of family structure itself—planned efforts at deflecting the family's socializing function, reducing the noneconomic utilities of offspring, or introducing nonfamilial distractions and opportunity costs into people's lives"; specifically, through employment of women outside the home (Blake⁷⁰); "selective restructuring of the family in relation to the rest of society" (Davis⁷¹).
- 4. Promotion of "two types of marriage, one of them childless and readily dissolved, and the other licensed for children and designed to be stable;" the former needs to be from 20-40 per cent of the total in order to allow the remainder to choose family size freely (Meier & Meier⁷²).
- 5. Encouragement of long-range social trends leading toward lower fertility, e.g., "improved and universal general education, or new roads facilitating communication, or improved agricultural methods, or a new industry that would increase productivity, or other types of innovation that may break the 'cake of custom' and produce social foment" (Hauser⁷³); and improved status of women (U.N./ECOSOC⁷⁴).
- 6. Efforts to lower death rates even further, particularly infant and child death rates, on the inference that birth rates will follow them down (Revelle⁷⁵, Heer & Smith⁷⁶).

G. Approaches via Political Channels and Organizations

- 1. U.S. insistence on "population control as the price of food aid", with highly selective assistance based thereon, and exertion of political pressures on governments or religious groups impeding "solution" of the population problem, including shifts in sovereignty (Ehrlich⁷⁷).
- 2. Re-organization of national and international agencies to deal with the population problem: within the United States, "coordination by a powerful governmental agency, a Federal Department of Population and Environ-

ment (DPE) . . . with the power to take whatever steps are necessary to establish a reasonable population size" (Ehrlich⁷⁸); within India, creation of "a separate Ministry of Population Control" (Chandrasekhar⁷⁹); development of an "international specialized agency larger than WHO to operate programs for extending family limitation techniques to the world . . . charged with the responsibility of effecting the transfer to population equilibrium" (Meier & Meier⁸⁰).

- 3. Promotion of zero growth in population, as the ultimate goal needed to be accepted now in order to place intermediate goals of lowered fertility in proper context (Davis⁸¹).

H. Augmented Research Efforts

- 1. More research on social means for achieving necessary fertility goals (Davis⁸²).
- 2. Focused research on practical methods of sex determination (Polgar⁸³).
- 3. Increased research toward an improved contraceptive technology (NAS⁸⁴).

Proposals: Review of the Issues

Here are 29 proposals beyond family planning for dealing with the problem of undue population growth in the developing world. I naturally cannot claim that these are all the proposals made more or less responsibly toward that end, but my guess is that there are not many more and that these proposals are a reasonably good sample of the total list. In any case, these are perhaps the most visible at the present time and the following analysis is limited to them.

Since several of the proposals tend in the same direction, it seems appropriate to review them illustratively against the criteria that any such proposals might be required to meet. What are such criteria? There are at least six: (1) scientific/medical/technological readiness, (2) political viability, (3) administrative feasibility, (4) economic capability, (5) moral/ethical/philosophical acceptability, and (6) presumed effectiveness. In other words, the key questions are: is the scientific/medical/technological base available or likely? will governments approve? can the proposal be administered? can the society afford the proposal? is it morally acceptable? and finally, will it work?

Such criteria and questions have to be considered against some time scale. As indicated at the outset of this paper, I suggest the next decade or two on the double grounds that the future is dim enough at

that point let alone beyond and that in any case it is difficult to develop plans and programs now for a more remote future. National economic plans, for example, are typically limited to five years and then a new one made in accord with the conditions existing at that time. In any case, long-run social goals are normally approached through successive short-run efforts.

Since the population problem in the developing world is particularly serious in its implications for human welfare, such proposals deserve serious consideration indeed. What do the proposals come to, viewed against the indicated criteria? (I use India throughout as the major illustrative case since it is the key example of the problem; disregarding Mainland China, India has a much larger population than all the other countries with population programs combined.)

Scientific/Medical/Technological Readiness

Two questions are involved: (1) is the needed technology available? and (2) are the needed medical or para-medical personnel available or readily trainable to assure medical administration and safety?

With regard to temporary contraception, sterilization, and abortion, the needed technology is not only available now but is being steadily improved and expanded. The IUD (intrauterine device) and the oral pill have been major contraceptive developments of the past decade, and several promising leads are now being followed up⁸⁵—though it cannot be said with much confidence that any of them will eventuate for mass use within the next few years.⁸⁶ Improved technologies for sterilization, both male and female, are being worked on; and there has been a recent development in abortion technique, the so-called suction device now being utilized in Eastern Europe and the U.S.S.R.⁸⁷

However, neither Ehrlich's "temporary sterilants" nor Ketchel's "fertility control agent" (B-1) is now available or on the technological horizon—though that does not mean that the research task ought not to be pursued against a subsequent need, especially since such substances could be administered voluntarily and individually as well as involuntarily and collectively. In the latter case, if administered through the water supply or a similar source, the substance would need to be medically safe and free of side effects for men and women, young and old, well and ill, physiologically normal and physiologically marginal, as

well as for animals and perhaps plants. As some people have remarked, such an involuntary addition to a water supply would face far greater difficulties of acceptance simply on medical grounds than the far milder proposals with regard to fluoridation to prevent tooth decay.

Though a substantial technology in fertility control does exist, that does not mean that it can be automatically applied where most needed, partly because of limitations of trained personnel. In general, the more the technology requires the services of medical or para-medical personnel (or, what is much the same, is perceived as requiring them), the more difficult it is to administer in the developing countries. For example, such traditional contraceptives as condoms or foams can be distributed freely through a variety of non-medical channels, including commercial ones, though that network is not without limitations in the poorer countries. Oral contraceptive pills *are* now distributed in large numbers without substantial medical intervention in a number of countries—sold by pharmacies without prescription—but not with medical sanction; and most qualified medical specialists here and abroad believe that the pills should be given only after proper medical examination and with proper medical follow-up. IUDs were first inserted only by obstetricians, then by medical doctors, and now, in a few situations where female medical personnel are unavailable in sufficient numbers, by specially trained para-medical personnel (notably, on a large scale, in Pakistan).

In the case of sterilization and abortion, the medical requirement becomes more severe. For example, when the policy of compulsory vasectomy of men with three or more children was first being considered in India (see footnote 14), an estimate was made that the policy would affect about 40 million males: "one thousand surgeons or para-surgeons each averaging 20 operations a day for five days a week would take eight years to cope with the existing candidates, and during this time of course a constant supply of new candidates would be coming along"⁸⁸—at present birth rates, probably of the order of 3.5 million a year. Large-scale abortion practice, assuming legality and acceptability, might additionally require hospital beds, which are in particularly short supply in most developing countries. Just as an indication of order of magnitude, in India, for example, there are approximately 22 million births annually; to abort five million would require

the equivalent of about 800 physicians, each doing 25 a day five days a week fifty weeks a year, which is approximately 10 per cent of the obstetrical/gynecological specialists in India, or perhaps 25 per cent of the female specialists; and about 10 million bed days, which is over half the estimated number of maternity bed days in the country at present.⁸⁹ However, the newer abortion technique might not require hospitalization—theoretically, the abortion "camp" may be feasible, as was the vasectomy "camp," except perhaps for the greater sensitivities attaching to the status of women, though it is not medically desirable—and para-medical personnel may be acceptable as well. Reportedly, the newer technique does not involve hospitalization in some parts of Eastern Europe and Mainland China.

In short, the technology is available for some but not all current proposals, and the same may be the case for properly trained personnel.

Political Viability

As mentioned earlier, the "population problem" has been increasingly recognized by national governments and international agencies over the past decade, and favorable policies have been increasingly adopted: national family planning programs in some 20–25 countries, positive resolutions and actions within the United Nations family, large programs of support by such developed countries as United States and Sweden, the so-called World Leaders' Statement. There is no reason to think that that positive trend has run its course.

At the same time, the political picture is by no means unblemished. Some favorable policies are not strong enough to support a vigorous program even where limited to family planning on health grounds; in national politics "population control" can become a handy issue for a determined opposition; internal ethnic balances are sometimes delicately involved, with political ramifications; national size is often equated with national power, from the standpoint of international relations and regional military balances; the motives behind the support and encouragement of population control by the developed countries are sometimes perceived as politically expedient if not neo-colonialist or neo-imperialist; and on the international front, as represented by the United Nations, there is still considerable reluctance based on both religious-moral and political considerations. In short, elite ambivalence and perceived

political liability are not absent even in the favoring countries. That state of affairs may not be surprising looked at historically and given the sensitive religious, military, and political issues involved, but it does not provide maximum support for energetic measures directed at the "necessary" degree of population control.

The question of political acceptability of such proposals becomes in effect two questions: what is presumably acceptable within the present situation? and what might be done to enlarge the sphere of acceptability (as, for example, in proposals G-1 and G-2)?

In the nature of the political case, population measures are not taken in isolation—which is to say, they are not given overriding claim upon the nation's attention and resources even though they have been given special authority in a few countries. They must thus compete in the political arena with other claims and values, and that kind of competition accords with the political bases of an open society.

Any social policy adopted by government rests on some minimum consensus upon goals and means. They need not be the ultimate goals or the final means; as noted above, the socio-economic plans of developing countries are typically five-year plans, not 20- or 40- or 100-year plans. Indeed, an ultimate goal of population policy—that is, zero growth—need not be agreed upon or even considered by officials who can agree upon the immediate goal of lowering growth by a specified amount or by "as much as possible" within a period of years. And since there are always goals beyond goals, one does not even need to know what the ultimate goal is, only the direction in which it will be found (which is usually more likely of agreement). Would the insistence *now* on the acknowledgment of an *ultimate* goal of zero growth advance the effort or change its direction?

The means to such ends need not be final either. Indeed, at least at the outset of a somewhat controversial program, the means probably must fit within the framework of existing values, elite or mass, and preferably both—for example, a family planning program for maternal and child health and for preventing unwanted births even though the resultant growth rate may still remain "too high" by ultimate standards.

Specifically, against this background, how politically acceptable do some of the proposals appear to be?

To start with, the proposal of involuntary controls in India in 1967 (B-4) precipi-

tated "a storm of questions in Parliament,"⁹⁰ was withdrawn, and resulted in a high-level personnel shift within the family planning organization. No other country has seriously entertained the idea. Leaving aside other considerations, political instability in many countries would make implementation virtually impossible.

Social measures designed to affect the birth rate indirectly—e.g., tax benefits, social security arrangements, etc.—have been proposed from time to time. In India, there have been several such proposals: for example, by the United Nations mission,⁹¹ by the Small Family Norm Committee,⁹² by the Central Family Planning Council (e.g., with regard to age of marriage, the education and employment of women, and various social welfare benefits),⁹³ and in almost every issue of such publications as *Family Planning News*, *Centre Calling*, and *Planned Parenthood* (illustrative recent headings: "Tax to Reduce Family Size," "Relief for Bachelors Urged," "Scholarships for Children, Family Planning for Parents"). As Samuel reports, with accompanying documentation, "the desirability of imposing a tax on births of fourth or higher order has been afloat for some time. However, time and again, the suggestion has been rejected by the Government of India."⁹⁴ In some cases, action has been taken by either the Central Government (e.g., income tax "deductions for dependent children are given for the first and second child only"⁹⁵) or certain states (e.g., "Maharashtra and Uttar Pradesh have decided to grant educational concessions and benefits only to those children whose parents restrict the size of their families . . ."⁹⁶ and the former state is reportedly beginning to penalize families with more than three children by withholding maternity leave, educational benefits, and housing privileges, though in the nature of the case only a small proportion of the state's population is affected by these disincentives⁹⁷). As an indication of political sensitivity, an order withdrawing maternity leave for non-industrial women employees with three or more living children—at best a tiny number of educated women—was revoked before it really went into effect.⁹⁸ There is a special political problem in many countries, in that economic constraints on fertility often turn out in practice to be selective on class, racial, or ethnic grounds, and thus exacerbate political tensions.

As another example, promoting female participation in the labor force runs up against the political problem that such

employment would be competitive with men in situations of already high male un- and under-employment. One inquiry concludes: "The prospective quantitative effect of moves in this direction seems very questionable. The number of unemployed in India has been rising by approximately 50 per cent every five years, and this is a well-known and very hot political issue. The government can hardly be blamed for being reluctant to promote female employment at the expense of male employment, which the great bulk of female employment almost surely would be."⁹⁹

Given the present and likely political climate both within and between countries, whether programs for lowering population growth and birth rates are politically acceptable or not appears to depend largely upon whether they are perceived as positive or negative: where "positive" means that they are seen as promoting other social values as well as population limitation and where "negative" means that they are seen as limited *per se*. For example, family planning programs, as noted above, are often rationalized as contributing both to maternal and child health and to the effective freedom of the individual family; a large-scale television network would contribute to other informational goals (though it is also politically suspect as providing too much power to the government in office); promotion of female participation in the labor force would add to economic productivity at the same time that it subtracted from the birth rate; extension of MCH services to rural areas is clearly desirable in itself, with or without family planning attached; incorporation of population material in school systems can be justified on educational grounds as well as population ones; a pension for the elderly would have social welfare benefits as well as indirect impact upon the large family as a social security system; contraceptive programs in Latin America are promoted by the medical community as a medical and humanitarian answer not to the population problem but to the extensive illegal and dangerous practice of abortion. On the other hand, imposing tax liabilities or withdrawing benefits after the Nth child, not to mention involuntary measures, can be attacked as a punitive means whose only purpose is that of population limitation.

It would thus require great political courage joined to very firm demographic convictions for a national leader to move toward an unpopular and severe prescrip-

tion designed to cure his country's population ills. Indeed, it is difficult to envisage such a political move in an open society where a political opposition could present a counter view and perhaps prevail. Witness the views of two strong advocates of additional measures beyond family planning:

A realistic proposal for a government policy of lowering the birth rate reads like a catalogue of horrors. . . . No government will institute such hardship simply for the purpose of controlling population growth.¹⁰⁰

If a perfected control agent were available now, I am certain that it would not be utilized in any democratic country, for no population would be likely to vote to have such agents used on itself. This means that the effects of overpopulation are not yet acute enough for people to accept an unpleasant alternative.¹⁰¹

The political problem of population control, like many political matters of consequence, is a matter of timing; in the 1950's nothing much could be done but in the 1960's a number of countries and international agencies moved at least as far as family planning programs. Political accommodation is typically a matter of several small steps with an occasional large one; and in this case it rests upon the seriousness with which the population problem is viewed. That is growing, hence political acceptability of added measures may also grow. Regardless of what the future may bring in this regard, several social measures like those in the list of proposals have been made from time to time and have encountered political obstacles. At least for the time being, such obstacles are real and must be taken into account in any realistic proposal.

The governmental decisions about measures taken to deal with undue population growth must be taken mainly by the countries directly involved: after all, it is their people and their nation whose prospects are most centrally affected. But in an interconnected world, with peace and human welfare at issue, others are properly concerned from both self-interested and humanitarian standpoints—other governments from the developed world, the international community, private groups. What of the political considerations in this connection?

A recommendation (G-1) that the United States exert strong political pressures to effect population control in developing countries seems more likely to generate political opposition abroad than acceptance. It is conceivable that such measures might be adopted by the Congress, though if so certainly against the

advice of the executive agencies, but it is hardly conceivable that they would be agreed to by the proposed recipients. Such a policy is probably more likely to boomerang against a population effort than to advance the effort.

The proposal to create an international super-agency (G-2) seems more likely of success, but not without difficulty. WHO, UNICEF, and UNESCO have moved some distance toward family planning, if not population control, but only slowly and against considerable political restraint on the international front.¹⁰² A new international agency would find the road easier only if restricted to the convinced countries. Certainly the present international organizations at interest would not be expected to abdicate in its favor. If it could be brought into being and given a strong charter for action, then almost by definition the international political climate would be such as to favor action by the present agencies, and then efficiency and not political acceptability would be the issue.

Administrative Feasibility

Given technical availability and political acceptability, what can actually be done in the field? This is where several "good ideas" run into difficulties in the developing world, in the translation of a theoretical probability into a practical program.

One of the underdeveloped elements of an underdeveloped country is administration: in most such countries there is not only a limited medical infrastructure but also a limited administrative apparatus to be applied to any program. Policies that look good on paper are difficult to put into practice—and that has been true in the case of family planning efforts themselves, where the simple organizational and logistic problems of delivering service and supplies have by no means been solved in several large countries after some years of trying. Again, this is one of the realities that must be dealt with in any proposals for action.

It is difficult to estimate the administrative feasibility of several of the proposals listed above, if for no other reason simply because the proponents do not put forward the necessary organizational plans or details. How are "fertility control agents" or "sterilants" to be administered on an involuntary mass basis in the absence of a central water supply or a food processing system? How are men with three or more children to be reliably identified in a peasant society and impelled to

undergo sterilization against their will; and what is to be done if they decline, or if the fourth child is born? What is to be done with parents who evade the compulsory programs, or with the children born in consequence? How can an incentive system be honestly run in the absence of an organized network of offices positioned and staffed to carry out the regulatory activity? How can a system of social benefits and penalties, including marriage disincentives, be made to work under similar conditions?

Such questions are meant only to suggest the kinds of considerations that must be taken into account if proposals are to be translated into program. They are difficult but perhaps not insurmountable: somewhat similar problems have been addressed in the development of family planning programs themselves, as with the availability of medical and para-medical personnel. But it would seem desirable that every responsible proposal address itself to such administrative problems in the attempt to convert a proposal into a workable plan.

Some proposals do move in that direction. The plan to institutionalize maternal care in rural areas with family planning attached (A-1) is currently under study in several developing countries with regard to feasibility in administration, personnel, and costs. The plans for a national television system for informational purposes (C-2) have worked out some of the administrative problems, though the basic question of how to keep a television set working in a non-electrified area of a non-mechanical rural culture is not addressed and is not easy (as in the parallel case of keeping vehicles in working order under such conditions). The plan to build population into the school curriculum (C-1) has been carried forward to the preparation of materials and in a few cases beyond that.¹⁰³ The plans for incentive programs sometimes come down to only the theoretical proposition that people will do things for money, in this case refrain from having children; but in some cases the permissible payment is proposed on the basis of an economic analysis, and in a few cases an administrative means is also proposed.¹⁰⁴ The plan for wedding loans tied to the bride's age appreciates that a birth registration system might be needed in order to control against misreporting of age.¹⁰⁵

Thus the *why* of population control is easy, the *what* is not very hard, but the *how* is difficult. We may know that the extension of popular education or the in-

crease of women in the labor force or a later age of marriage would all contribute to population control in a significant way. But there remains the administrative question of how to bring those developments about. For example, the proposal (F-1) to organize the young men of India into a social service program, directed toward later age at marriage and general modernization of attitudes, is extremely difficult from an administrative standpoint even if it were acceptable politically and financially: consider the administrative, supervisory, and instructional problems in the United States of handling nine to ten million young men (the number affected in India), many of them unwilling participants easily "hidden" by their families and associates, in a series of camps away from home.¹⁰⁶ As has been observed, if a country could administer such a program it could more easily administer a family planning program, or perhaps not need one.

In short, several proposals assume administrable workability of a complicated scheme in a country that cannot now collect its own vital statistics in a reliable manner. Moreover, there is a near limit to how much administrative burden can be carried by the typical developing country at need: it cannot carry very many large-scale developmental efforts at the same time, either within the population field or overall. For population is not the only effort: agriculture, industry, education, health, communications, the military—all are important claimants. And within the field of population, a country that finds it difficult to organize and run a family planning program will find it still harder to add other programs along with that one. So difficult administrative choices must be made.

Economic Capability

From the standpoint of economic capability there are two questions: is the program worthwhile when measured against the criterion of economic return? and can it be afforded from present budgets even if worthwhile?

Most of the proposals probably pass the second screen: if scientifically available and politically and administratively acceptable, an involuntary fertility control agent would probably not be prohibitive economically; incorporation of population materials into the school curriculum is not unduly expensive, particularly when viewed as a long-term investment in population limitation; imposition of taxes or withdrawal of benefits or increased fees

for marriage licenses might even return a net gain after administrative cost.

But a few proposals are costly in absolute if not relative terms. For example, the institutionalization of maternal care (A-1) might cost the order of \$500,000,000 for construction and \$200,000,000 for annual operation in India, or respectively \$25,000,000 and \$10,000,000 in a country of 25 million population¹⁰⁷ (although later estimates are substantially lower). The plan for a "youth corps" in India would cost upwards of \$450,000,000 a year if the participants were paid only \$50 annually. The plan for pensions to elderly fathers without sons could cost from \$400 million to \$1 billion a year, plus administrative costs.¹⁰⁸ The satellite television system for India would cost \$50,000,000 for capital costs only on a restricted project,¹⁰⁹ with at least another \$200,000,000 needed for receiving sets, broadcast terminals, and programming costs if national coverage is to be secured (depending largely on distribution of sets); or, by another estimate, \$30-\$35,000,000 a year over 20 years (or \$700 million—\$440 million in capital outlay and \$250 million in operating costs) in order to cover 84 per cent of the population by means of nearly 500,000 receiving sets.¹¹⁰ All of these proposals are intended to have beneficial consequences beyond population and hence can be justified on multiple grounds, but they are still expensive in absolute amounts.

The broad social programs of popular education, rationalization of agriculture, and increased industrialization (F-4) already absorb even larger sums though they could no doubt utilize even more. Here, however, the better question is a different one. Presently less than one per cent of the total funds devoted to economic development in such countries as India, Pakistan, South Korea, and Turkey are allocated to family planning programs—in most cases, much less. Would that tiny proportion make a greater contribution to population control, over some specified period, if given over to education or industrialization or road-building, for their indirect effect, rather than utilized directly for family planning purposes?¹¹¹ From what we now know, the answer is certainly No.

Still other proposals, particularly those concerned with incentives and benefits, are more problematic, and unfortunately no clear directions are apparent. For comparative purposes, let us start with the generally accepted proposition that in the typical developing country today, one

prevented birth is worth one to two times the per capita income, on economic grounds alone. In that case, the typical family planning program as currently operated is economically warranted in some substantial degree.¹¹² The per caput annual income of the developing countries under consideration range, say, from \$75 to \$500. In similar order of magnitude, the typical family planning program operates annually at about six cents per caput, and in Taiwan and South Korea, where the programs are more effective, "each initial acceptor costs about \$5; each acceptor continuing effective contraception for a year costs about \$7-\$10; each prevented birth costs, say, \$20-\$30 (at three years of protection per averted birth); and each point off the birth rate at its present level costs . . . about \$25,000 per million population."¹¹³

This order of cost is not certified in all other situations, so even the economic value of family planning programs is not yet altogether clear¹¹⁴ although most indications to date are that it is strongly positive.¹¹⁵ Beyond family planning, the situation is still less clear. Assuming that some level of incentive or benefit would have a demographic impact, what would the level have to be to cut the birth rate by, say, 20 per cent? We simply do not know: the necessary experiments on either administration or effectiveness have not been carried out. There is, of course, the possibility that what would be needed could not be afforded and that what could be afforded would not be effective.

For guidance, let us review what has been proposed with respect to incentives. Again we take the Indian case; and for comparative purposes, the present budget of the Indian family planning program is about \$60,000,000 a year, far higher than in the recent past (only about \$11,000,000 in the 1961-1966 Plan) and not yet fully spent.

On the ground that incentives for vasectomy are better than incentives for contraception—easier to administer and check on a one-time basis and likely to be more effective in preventing births¹¹⁶—Pohlman proposes for India a range of money benefits depending upon parity and group acceptance: from \$7 to a father of four or more children if half the villagers in that category enter the program, up to \$40 to a father of three children if 75 per cent accept. If the 50 per cent criterion were met in both categories throughout India, the current plan would cost on the order of \$260,000,000 in incentives alone, omitting administrative costs (based on

these figures: 90 million couples, of whom about 40 per cent are parity four and above, and 15 per cent are parity three; or about 36.0 and 13.5 million respectively; half of each times \$7 and \$20 respectively). The decline in the birth rate would be slightly over one fourth, perhaps a third, or of the order of \$35-\$40 a prevented birth by a rough estimate.¹¹⁷

Simon proposes an incentive of half the per capita income "each year to each fertile woman who does not get pregnant."¹¹⁸ Here a special problem arises. In a typical developing population of 1000, about 25-30 per cent of the married women of reproductive age (MWRA) give birth each year: 1000 population means from 145-165 MWRA, with a birth rate of, say, 40. Thus, incentives could be paid to about three-fourths of the women with no effect on the birth rate—since they would not be having a child that year under normal circumstances—so that the cost could be three to four times larger than "needed" for any desired result. Even if the incentive were fully effective, and each one really did prevent a birth, a cut of ten points in the Indian birth rate would cost of the order of \$250,000,000 (or 5,000,000 prevented births at \$50 each)—and substantially larger if the anyway non-pregnant, including the non- or semi-ferund, could not be screened out efficiently. (Compare this level of incentive with Spengler's suggestion of "rewards to those who prevent births—say \$5-\$10 per married couple of reproductive age each year they avoid having offspring."¹¹⁹ In the typical case, the couple could collect for three years and then, as before, have the child in the fourth year; or, if an incentive of this size were effective, the cost would be four times the indicated level.)

Enke addresses himself to this problem by suggesting a system of blocked accounts for Indian women who would have to remain non-pregnant for three to four years with examinations thrice yearly.¹²⁰ Here again the cost could be high: about \$100 for three to four years of non-pregnancy at his proposed rates, or perhaps \$500,000,000 a year to effect a similar cut in the birth rate (i.e., over 20,000,000 prevented births over four years at \$100 each). And on the administrative side, the plan requires not only a substantial organization for management and record-keeping, but also the dubious assumption that the Indian peasant is sufficiently future-oriented and trustful of governmental bureaucracy.

Finally, Balfour has suggested an ingenious scheme for providing national

saving certificates to married women in the reproductive ages who remain non-pregnant for three, four, five, or more years at the rate of about \$3-\$4 a year.¹²¹ He estimates that this plan in action would cost about \$200 per year per thousand population, which comes to about \$100,000,000 for all India.

But these are only speculations: to date we simply do not know whether incentives will lower a birth rate or rather, how large they would have to be in order to do so. These illustrations show only that an incentive program could be expensive. In any case, incentive systems would require a good amount of supervision and record-keeping; and presumably the higher the incentive (and hence the greater the chance of impact), the greater the risk of false reporting and the greater need of supervision—which is not only expensive but difficult administratively.

Moral/Ethical/Philosophical

Acceptability

Beyond political acceptability, is the proposal considered right and proper—by the target population, government officials, professional or intellectual elites, the outside agencies committed to assistance?

“One reason the policy of seeking to make voluntary fertility universal is appealing—whether adequate or not—is that it is a natural extension of traditional democratic values: of providing each individual with the information he needs to make wise choices, and allowing the greatest freedom for each to work out his own destiny. The underlying rationale is that if every individual knowledgeably pursues his self-interest, the social interest will best be served.”¹²² But what if “stressing the right of parents to have the number of children they want . . . evades the basic question of population policy, which is how to give societies the number of children they need?”¹²³ Thus the issue rests at the center of political philosophy: how best to reconcile individual and collective interests.

Today, most observers would acknowledge that having a child is theoretically a free choice of the individual couple—but only theoretical in that the freedom is principled and legal. For many couples, particularly among the poor of the world, it is not effectively free in the sense that the individual couple does not have the information, services, and supplies to implement a free wish in this regard. Such couples are restrained by ignorance, not only of contraceptive practice but of the consequences of high fertility for them-

selves, their children, and their country; they are restrained by religious doctrine, even though they may not accept the doctrine; they are restrained legally, as with people who would abort a pregnancy if that action were open to them; they are restrained culturally, as with women subject to the subordination that reserves for them only the child-bearing and child-rearing role. Hence effective freedom in child-bearing is by no means realized in the world today, as recent policy statements have remarked.¹²⁴

Where does effective freedom lie? With the free provision of information and services for voluntary fertility limitation? With that plus a heavy propaganda campaign to limit births in the national interest? With that plus an incentive system of small payments? large payments? finders fees? With that plus a program of social benefits and penalties geared to the desired result? Presumably it lies somewhere short of compulsory birth limitation enforced by the state.

One’s answer may depend not only on his own ethical philosophy but also upon the seriousness with which he views the population problem: the worse the problem, the more one is willing to “give up” in ethical position in order to attain “a solution.” As usual, the important and hard ethical questions are those involving a conflict of values. In some countries, for example, people who are willing to provide temporary contraception as a means for population control under present circumstances are reluctant to extend the practice to sterilization and firmly opposed to abortion¹²⁵—though again the wheel of history seems to be moving the world across that range under the pressure of population growth. But in some groups, notably religious groups, morality in this connection is absolute and no compromise with social need is to be tolerated, as for example in the case of Pope Paul’s encyclical of July 1968.

How much in ethical values should a society be willing to forego for the solution of a great social problem? Suppose a program for population control resulted in many more abortions in a society where abortion is not only morally repugnant but also widely unavailable by acceptable medical standards: how much fertility decline would be “worth” the result? What of infanticide under the same conditions? How many innocent or unknowing men may be vasectomized for a fee (for themselves or the finders) before the practice calls for a moral restraint? How large an increase in the regulatory bureaucracy, or

in systematic corruption through incentives, or in differential effect by social class to the disadvantage of the poor,¹²⁶ is worth how much decrease in the birth rate? How much association of child-bearing with monetary incentive is warranted before “bribing people not to have children” becomes contaminating, with adverse long-run effects on parental responsibility?¹²⁷ How much “immorality,” locally defined as extramarital sex, is worth importing along with how much contraceptive practice (assuming the association)? How much withholding of food aid is ethical, judged against how much performance in fertility decline? If it were possible to legislate a later age of marriage, would it be right to do so in a society in which young women have nothing else to do, and against their will? In countries, like our own, where urbanization is a serious population problem, is it right to tell people *where* to live, or to impose heavy economic constraints that in effect “force” the desired migration? Is it right to withdraw educational benefits from the children in “too large” families?—which is not only repressive from the standpoint of free education but in the long run would be unfortunate from the standpoint of fertility control. In the balance—and this is a question of great but neglected importance—what weight should be given to the opportunities of the next generations as against the ignorance, the prejudices, or the preferences of the present one?

These are not light questions, nor easy ones to answer. And they have not been seriously analyzed and ventilated, beyond the traditional religious concern about the acceptability of contraception and abortion. Most official doctrine in the emerging population programs is conservative—as is only to be expected at the outset of a great social experiment of this character.

Guidance on such ethical questions is needed. As an offer toward further consideration, these propositions are put forward: (1) “an ideal policy would permit a maximum of individual freedom and diversity. It would not prescribe a precise number of children for each category of married couple, nor lay down a universal norm to which all couples should conform”;¹²⁸ correlatively, it would move toward compulsion only very reluctantly and as the absolutely last resort; (2) “an ideal program designed to affect the number of children people want would help promote other goals that are worth supporting on their own merits, or at least not conflict with such goals”;¹²⁹ correlatively, it would not indirectly encourage

undesirable outcomes, e.g., bureaucratic corruption; (3) an ideal program would not burden the innocent in an attempt to penalize the guilty—e.g., would not burden the Nth child by denying him a free education simply because he was the Nth child of irresponsible parents; (4) an ideal program would not weigh heavily upon the already disadvantaged—e.g., by withdrawing maternal or medical benefits or free education from large families, which would tend to further deprive the poor; (5) an ideal program would be comprehensible to those directly affected—i.e., it should be capable of being understood by those involved and hence subject to their response; (6) an ideal program would respect present values in family and children, which many people may not be willing to bargain away for other values in a cost-benefit analysis; and (7) an ideal program would not rest upon the designation of population control as the final value justifying all others; “preoccupation with population growth should not serve to justify measures more dangerous or of higher social cost than population growth itself.”¹³⁰

Presumed Effectiveness

If proposals are scientifically ready, politically and morally acceptable, and administratively and financially feasible, to what extent will they actually work in bringing population growth under control? That is the final question.

Again we do not know the answer. We are not even sure in the case of family planning programs, with which we now have some amount of experience. But as order of magnitude and as a kind of measuring rod for other proposals, the impact of family planning programs, when conducted with some energy at the rate of investment indicated above, ranges roughly as follows: in situations like Singapore, South Korea, and Taiwan, they have recruited 20-33 per cent of the married women of reproductive age as contraceptive acceptors within 3-4 years, and in difficult situations like India and Pakistan, from 5-14 per cent of the target population.¹³¹ In other settings, like Malaysia or Ceylon or Turkey or Kenya or Tunisia or Morocco, either it is too early to tell or the program has been conducted under political or other restraints so that it is difficult to say what an energetic program could have achieved; as it is, family planning is being introduced into such situations at a pace politically acceptable and administratively feasible. Overall, it appears that a vigorous pro-

gram can extend contraceptive practices by an economically worthwhile amount wherever conducted.¹³²

What of the proposals beyond family planning? How well might they do, given administrative implementation?

To begin with, the compulsory measures would probably be quite effective in lowering fertility. Inevitably in such schemes, strongly motivated people are ingenious enough to find ways “to beat the system”; if they were numerous enough the system could not be enforced except under severe political repression.¹³³ Otherwise, if workable, compulsion could have its effect.

What about the proposals for the extension of voluntary contraception? Institutionalizing maternal care in the rural areas with family planning attached does promise to be effective over, say, five to ten years, particularly in its potential for reaching the younger and lower parity women. The International Postpartum Program did have that effect in the urban areas¹³⁴, and presumably the impact would extend to the rural areas though probably not to the same degree because of the somewhat greater sophistication and modernization of the cities. The importance of the particular target is suggested in this observation: “The objective in India is to reach not the 500,000,000 people or the 200,000,000 people in the reproductive ages or the 90,000,000 married couples or even the 20-25,000,000 who had a child this year—but the 5,000,000 women who gave birth to their first child. And this may be the only institutionalized means for reaching them”.¹³⁵ The total program is costly, but if it could establish family planning early in the reproductive period in a country like India, and thus encourage the spacing of children and not just stopping, it could have great demographic value in addition to the medical and humanitarian contribution.

A liberalized abortion system, again if workable, could also be effective in preventing unwanted births, but it would probably have to be associated with a contraceptive effort: otherwise there might be too many abortions for the system as well as for the individual woman (who might need three a year to remain without issue; in Mainland China, where abortion on demand is available, it is reported that a woman may have only one a year¹³⁶). Free abortion for contraceptive failures would probably make for a fertility decline, but how large a one would depend upon the quality of the contra-

ceptive program. With modern contraception (the IUD and the pill) the failure rates are quite small, but women who only marginally tolerate either method, or both, would be available for abortion. Free abortion on demand has certainly lowered fertility in Japan and certain Eastern European countries,¹³⁷ and where medically feasible would do so elsewhere as well; as a colleague observes, in this field one should not underestimate the attraction of a certainty as compared to a probability. Abortion for illegitimate pregnancies, whether voluntary (A-2) or required (B-4), would not have a large impact on the birth rate in most developing countries since known illegitimacy is small (assuming that the children of the numerous consensual unions and other arrangements in Latin America are not considered “illegitimate”).

The educational programs, whether in the school system or in the mass media, would almost certainly have an effect over the years though it will be difficult for technical reasons to determine the precise or even approximate degree of impact. Anything that can be done to “bring home” the consequences of undue population growth to family and nation will help reach the goal of fertility decline, but in the nature of the case education alone will have a limited effect if life circumstances remain stable.

The large question of the effect of the various incentive and benefit/liability plans (D and E) simply cannot be answered: we have too little experience to know much about the conditions under which financial factors will affect child-bearing to any substantial degree. Perhaps everyone has his price for everything; if so, we do not know what would have to be paid, directly or indirectly, to bring people not to bear children.

Such as it is, the evidence from the pro-natalist side is not encouraging. All the countries of Europe have family allowance programs of one kind or another¹³⁸, most of them legislated in the 1930's and 1940's to raise the birth rate; collectively they have the lowest birth rate of any continent. The consensus among demographers appears to be that such programs cannot be shown to have effected an upward trend in the birth rate where tried. A recent review of the effect of children's allowances upon fertility concludes:

It would be helpful to be able to state categorically that children's allowances do or do not increase the number of births among

families that receive them. Unfortunately, there is no conclusive evidence one way or the other. . . . To argue that the level of births in the United States or anywhere else depends upon the existence, coverage, and adequacy of a set of family allowances is certainly simplistic. Such a conclusion can and ought to be rejected not only on logical grounds but also on the basis of the demonstrated complexity of the factors producing specific birthrates Recent fertility statistics show no relation between the existence or character of a family allowance program and the level of the birthrate. In specific low-income agricultural countries with such programs, fertility is high. In specific high-income modernized nations with such programs, fertility is low Whether the less developed countries have any form of family or children's allowances appears wholly unrelated to the level of fertility.¹³⁹

As in the case of abortion for illegitimate pregnancies, several of the benefit/liability proposals would affect only a trivial fraction of people in much of the developing world: for example, again in India, programs for governmental employees who make up perhaps 5 per cent of the labor force, tax or social security systems where the rural masses are not regularly covered, maternity benefits since so few women are covered, fees for marriage licenses, control of public housing which is insignificant, denial of education benefits to married students who are trivially few and not now covered in any case. Such measures are probably more relevant to the developed than the developing countries. However, because the impact of incentive and benefit/liability plans is uncertain and may become important, the field needs to become better informed on the possibilities and limitations, which information can only come from experimentation under realistic circumstances and at realistic levels of payment.

A higher age of marriage and a greater participation of women in the labor force are generally credited with effecting fertility declines. In India, average female age at marriage has risen from about 13 to about 16 in this century, or about half a year a decade, although the age of marital consummation has remained rather steady at 17 years (since most of the rise is due to the decrease in child marriages). In a recent Indian conference on raising age at marriage, the specialists seemed to differ only on the magnitude of the fertility decline that would result: a decline of 30 per cent in the birth rate in a generation of 28 years if the minimum female age of marriage were raised to

20¹⁴⁰ or a decline of not more than 15 per cent in 10 years¹⁴¹—"seemed to" since these figures are not necessarily incompatible. In either case, the decline is a valuable one. But the effectiveness of increased age of marriage rests in the first instance on its being realized; here are the perhaps not unrepresentative views of knowledgeable and committed observers:

. . . . In the absence of prolonged education and training, postponing the age of marriage becomes a formidable problem (Chandrasekhar)¹⁴²

. . . . Legislation regarding marriage can rarely be used as a measure of fertility control in democratic countries. The marital pattern will mostly be determined by social circumstances and philosophies of life and any measure by government clashing with them will be regarded as a restriction on freedom rather than a population policy (Dandekar)¹⁴³

Similarly, an increase in the proportion of working women—working for payment outside the home—might have its demographic effect,¹⁴⁴ but could probably come about only in conjunction with other broad social trends like education and industrialization, which themselves would powerfully affect fertility (just as a fertility decline would assist importantly in bringing them about).¹⁴⁵ Both compulsory education and restrictions on child labor would lower the economic value of children and hence tend toward fertility decline: The question is, how are they to be brought about?

Finally, whether research would affect fertility trends depends of course upon its nature and outcome, aside from the general proposition that "more research" as a principle can hardly be argued against. Most observers believe that under the typical conditions of the developing society, any improvement in the contraceptive technology would make an important difference to the realization of present fertility goals and might make an important contribution to turning the spiral down. Indeed, several believe that this is the single most important desideratum over the short run. Easy means for sex determination should have some effect upon the "need for sons" and thus cut completed family size to some extent. Research on the social-economic side would probably have to take effect through the kinds of programs discussed above.

The picture is not particularly encouraging. The measures that would

work to sharply cut fertility are politically and morally unacceptable to the societies at issue, as with coercion, and in any case unavailable; or they are difficult of attainment in any visible future, as with the broad social trends or shift in age of marriage. The measures that might possibly be tried in some settings, like some version of incentives or benefit/liability plans, are uncertain of result at the probable level of operation. Legalization of abortion, where medically available, would almost certainly have a measurable effect, but acceptability is problematic.

Conclusion

Where does this review leave us with regard to proposals beyond family planning? Here is my own summary of the situation.

(1) There is no easy way to population control. If this review has indicated nothing else, it has shown how many obstacles stand in the way of a simple solution to the population problem—or a complicated one, for that matter. By way of illustrative capitulation, let us see how the various proposals seem to fit the several criteria, in the large (Table 1).¹⁴⁶ That is only one observer's judgment of the present situation, but whatever appraisal is made of specific items it would appear that the overall picture is mixed. There is no easy way.

(2) Family planning programs do not compare unfavorably with specific other proposals—especially when one considers that any *actual* operating program is disadvantaged when compared with any competitive *ideal* policy. (As any practical administrator knows, when an "ideal" policy gets translated into action it develops its own set of realistic problems and loses some of the shine it had as an idea.) Indeed, on this showing, if family planning programs did not exist, they would have to be invented: it would appear that they would be among the first proposals to be made and the first programs to be tried, given their generally acceptable characteristics.

In fact, when such proposals are made, it turns out that many of them call for *more* family planning not less, but only in a somewhat different form. In the present case, of the proposals listed above, at least a third put forward in effect simply another approach to family planning, often accepting the existing motivation as to family size. In any case, family planning programs are established, have some momentum, and, importantly, would be use-

ful as the direct instrument through which other proposals would take effect. So that, as a major critic acknowledges, "there is no reason to abandon family-planning programs."¹⁴⁷

What is needed is the energetic and full implementation of present experience; this is by no means being done now. Much more could be done on the informational side, on encouragement of commercial channels of contraception, on the use of para-medical personnel, on logistics and supply, on the training and supervision of field workers, on approaches to special targets ranging from post-partum women to young men under draft into the armed forces. If the field did well what it knows how to do, that in itself would in all likelihood make a measurable difference—and one competitive in magnitude with other specific proposals:—not to mention the further impetus of an improved contraceptive technology.

(3) Most of the proposed ideas are not new; they have been around for some time. So if they are not in existence, it is not because they were not known but because they were not accepted—presumably, for reasons like those reflected in the above criteria. In India, for example, several of the social measures being proposed have been, it would seem, under almost constant review by one or another committee for the past 10–15 years—withdrawal of maternity benefits, imposition of a child tax, increase in age of mar-

riage, liberalization of legal abortion, incorporation of population and family planning in the school curriculum.¹⁴⁸ In Mainland China, reportedly, later age of marriage is common among party members,¹⁴⁹ and in Singapore a 1968 law restricts maternity privileges beyond the third child for employed women and makes public housing available to childless couples.¹⁵⁰ As for general social development—compulsory education, industrialization, improved medical care, etc.—that is in process everywhere, though of course more can always be done (but not very quickly). So it is not correct to imply that it is only new ideas that are needed; many ideas are there, but their political, economic, or administrative feasibility is problematic.

(4) The proposals themselves are not generally approved by this set of proposers, taken together. All of them are dissatisfied to some degree with present family planning efforts, but that does not mean that they agree with one another's schemes to do better. Thus, Ohlin believes that "the demographic significance of such measures (maternity benefits and tax deductions for children) would be limited. By and large those who now benefit from such arrangements in the developing countries are groups which are already involved in the process of social transformation" and that "changes in marital institutions and norms are fairly slow and could not in any circumstances reduce

fertility sufficiently by itself when mortality falls to the levels already attained in the developing world."¹⁵¹ Ketchel opposes several "possible alternatives to fertility control agents":

Financial pressures against large families would probably be effective only in developed countries in which there are large numbers of middle-class people. In underdeveloped countries practically no financial inducements to have children now exist to be reversed, and the imposition of further taxes upon the many poor people would depress their living standards even further. . . In order to be effective, economic pressures would probably have to be severe enough to be quite painful, and when they reached a level of painfulness at which they were effective, they would probably seriously affect the welfare of the children who were born in spite of the pressures. . . The same objection applies to the use of financial rewards to induce people not to have children because such programs would make the families with children the poorer families. . . The age at which people marry is largely determined by slowly changing cultural and economic factors, and could probably be changed quickly in a population only by rather drastic measures (in which) an inordinately severe punishment for violators would be required. . . Statutory regulations of family size would be unenforceable unless the punishment for exceeding the limit was so harsh that it would cause harm to the lives of the existing children and their parents. Such possible procedures as vasectomizing the father or implanting long-

TABLE 1. *Illustrative Appraisal of Proposals by Criteria*

	Scientific Readiness	Political Viability	Administrative Feasibility	Economic Capability	Ethical Acceptability	Presumed Effectiveness
A. Extension of Voluntary Fertility Control	High	High on maternal care, moderate to low on abortion	Uncertain in near future	Maternal care too costly for local budget, abortion feasible	High for maternal care, low for abortion	Moderately high
B. Establishment of Involuntary Fertility Control	Low	Low	Low	High	Low	High
C. Intensified Educational Campaigns	High	Moderate to high	High	Probably high	Generally high	Moderate
D. Incentive Programs	High	Moderately low	Low	Low to moderate	Low to high	Uncertain
E. Tax and Welfare Benefits and Penalties	High	Moderately low	Low	Low to moderate	Low to moderate	Uncertain
F. Shifts in Social and Economic Institutions	High	Generally high, but low on some specifics	Low	Generally low	Generally high, but uneven	High, over long run
G. Political Channels and Organizations	High	Low	Low	Moderate	Moderately low	Uncertain
H. Augmented Research Efforts	Moderate	High	Moderate to high	High	High	Uncertain
Family Planning Programs	Generally high, but could use improved technology	Moderate to high	Moderate to high	High	Generally high, but uneven on religious grounds	Moderately high

acting contraceptives in the mother would require a direct physical assault by a government agent on the body of an individual.¹⁵²

Meier argues against the tax on children on both humanitarian and political grounds.¹⁵³ To the U. N. Advisory Mission to India, "it is realised that no major demographic effects can be expected from measures of this kind (maternity benefits), particularly as only a small proportion of families are covered . . . but they could contribute, together with the family planning programme, to a general change in the social climate relating to child-bearing."¹⁵⁴ Earlier, in supporting a family planning effort in India, Davis noted that "the reaction to the Sarda Act (the Child Marriage Restraint Act of 1929) prohibiting female marriage (below 14) shows the difficulty of trying to regulate the age of marriage by direct legislation."¹⁵⁵ Myrdal warns against cash payments to parents in this connection, as a redistributive reform, and supports social awards to the children in kind.¹⁵⁶ Kirk that believes "it might prove to be the height of folly to undermine the existing family structure, which continues to be a crucial institution for stability and socialization in an increasingly mobile and revolutionary society."¹⁵⁷ Raulet believes that "Davis' main observation . . . that alternatives to the present stress on familism will ultimately be required . . . obviously makes no sense for most less developed countries today . . . Aside from the repressive tone of some of (the proposed) measures, the most striking thing about these proposals is the impracticality of implementing them. . . . The application of social security measures and negative economic sanctions . . . are so far beyond the present economic capacities of these countries, and would raise such difficult administrative and economic problems, that they are probably not worth serious mention."¹⁵⁸ Finally, Ehrlich is contemptuous of the professors whose "idea of 'action' is to form a committee or to urge 'more research.' Both courses are actually substitutes for action. Neither will do much good in the crisis we face now. We've got lots of committees, and decades ago enough research had been done at least to outline the problem and make clear many of the steps necessary to solve it. Unless those steps are taken, research initiated today will be terminated not by success but by the problem under investigation."¹⁵⁹

(5) In a rough way, there appears to be a progression in national efforts to deal with the problem of population control.

The first step is the theoretical recognition that population growth may have something to do with the prospects for economic development. Then, typically, comes an expert mission from abroad to do a survey and make a report to the government, as has occurred in India, Pakistan, South Korea, Turkey, Iran, Tunisia, Morocco, and Kenya among others. The first action program is in family planning, and most of the efforts are still there. Beyond that, it apparently takes (1) some degree of discouragement over progress combined with (2) some heightened awareness of the seriousness of the problem to move the effort forward. To date those conditions have been most prominently present in India—and that is the country that has gone farthest in the use of incentives and in at least consideration of further steps along the lines mentioned above. It may be that in this respect the Indian experience is a harbinger of the international population scene. It is only natural that on matters of such sensitivity, governments try "softer" measures before "harder" ones; and only natural, too, that they move gradually from one position to the next to realize their goals. Indeed, some proposals require prior or simultaneous developments, often of a substantial nature: for example a loan system tied to age of brides may require a good system of vital registration for purpose of verification, instruction in population in the schools requires some degree of compulsory education, tying family planning to health programs requires a medical infrastructure.

Finally, it is also worth noting that more extreme or controversial proposals tend to legitimate more moderate advances, by shifting the boundaries of discourse.

(6) Proposals need to be specified—proposals both for action schemes and for further research. It is perhaps too much to ask advocates to spell out all the administrative details of how their plan is to operate in the face of the kinds of obstacles and difficulties discussed above, or even get permission to operate: the situations, settings, opportunities, and personalities are too diverse for that. But it does seem proper to ask for the fullest possible specification of actual plans, under realistic conditions, in order to test out their feasibility and likely effectiveness. The advocates of further research similarly ought to spell out not only what would be studied and how, but also how the results might be applied in action programs to affect fertility. Social research is not always readily translated into action, espe-

cially into administrative action; and the thrust of research is toward refinement, subtlety, precision, and qualification whereas the administrator must act in the large. Short of such specification, the field remains confronted with potentially good ideas like "raise the age of marriage" or "use incentives" or "substitute pension systems for male children" without being able to move very far toward implementation.

(7) Just as there is no easy way, there is no single way. Since population control will at best be difficult, it follows that every acceptable step be taken that promises some measure of impact. The most likely prospect is that population control, to the degree realized, will be the result of a combination of various efforts—economic, legal, social, medical—each of which has some effect but not an immediately overwhelming one.¹⁶⁰ Accordingly, it is incumbent upon the professional fields concerned to look hard at various approaches, including family planning itself, in order to screen out what is potentially useful for application. In doing so, on an anyway difficult problem, it may be the path of wisdom to move with the "natural" progression. Some important proposals seem reasonably likely of adoption—institutionalization of maternal care, population study in the schools, the TV satellite system for informational purposes, a better contraceptive technology, perhaps even liberalization of abortion in some settings—and we need to know not only how effective such efforts will be but, beyond them, how large a money incentive needs to be to effect a given amount of fertility control and how effective those indirect social measures are that are decently possible of realization. It may be that some of these measures would be both feasible and effective—many observers 15 years ago thought that family planning programs were neither—and a genuine effort needs to be made in the next years, wherever feasible, to do the needed experimentation and demonstration. The "heavy" measures—involuntary means and political pressures—may be put aside for the time being, if not forever.

(8) In the last analysis, what will be scientifically available, politically acceptable, administratively feasible, economically justifiable, and morally tolerated depends upon people's perceptions of consequences. If "the population problem" is considered relatively unimportant or only moderately important, that judgment will not support much investment of effort. If

tries: A Proposal to Determine the Effect Experimentally"; "The Role of Bonuses and Persuasive Propaganda in the Reduction of Birth Rates"; and "Family Planning Prospects in Less-Developed Countries, and a Cost-Benefit Analysis of Various Alternatives", University of Illinois, MSS 1966-1968?

28. Stephen Enke, "Government Bonuses for Smaller Families", *Population Review*, vol. 4, 1960, p. 47-54.
29. Samuel, *op. cit.*, p. 12.
30. Michael Young, in "The Behavioral Sciences and Family Planning Programs: Report on a Conference", *Studies in Family Planning*, no. 23, October 1967, p. 10.
31. Dipak Bhatia, "Government of India Small Family Norm Committee Questionnaire", *Indian Journal of Medical Education*, vol. 6, October 1967, p. 189. As the title indicates, this is not a proposal as such but a questionnaire soliciting opinions on various ideas put forward to promote "the small family norm".
32. Stephen Enke, "The Gains to India from Population Control", *The Review of Economics and Statistics*, May 1960, p. 179-180.
33. Joseph J. Spengler, "Agricultural Development is Not Enough", MS prepared for Conference on World Population Problems, Indiana University, May 1967, p. 29-30.
34. J. William Leasure, "Some Economic Benefits of Birth Prevention", *Milbank Memorial Fund Quarterly*, 45, 1967, p. 417-25.
35. Marshall C. Balfour, "A Scheme for Rewarding Successful Family Planners", Memorandum, The Population Council, June 1962.
36. W. Parker Mauldin, "Prevention of Illegitimate Births: A Bonus Scheme", Memorandum, The Population Council, August 1967.
37. Ehrlich, *op. cit.*, p. 138.
38. Bhatia, *op. cit.*, p. 188.
39. Samuel, *op. cit.*, p. 14.
40. Davis, *op. cit.*, p. 738.
41. Richard M. Titmuss & Brian Abel-Smith, *Social Policies and Population Growth in Mauritius*, Methuen, 1960, p. 130-31.
42. Bhatia, *op. cit.*, p. 189.
43. Titmuss & Abel-Smith, *op. cit.*, p. 131-36.
44. Davis, *op. cit.*, p. 739.
45. Bhatia, *op. cit.*, p. 189-90.
46. Samuel, *op. cit.*, p. 12-14.
47. Spengler, *op. cit.*, p. 30.
48. Bhatia, *op. cit.*, p. 190.
49. Davis, *op. cit.*, p. 738.
50. Bhatia, *op. cit.*, p. 190.
51. Titmuss & Abel-Smith, *op. cit.*, p. 137.
52. Samuel, *op. cit.*, p. 12-14.
53. Davis, *op. cit.*, p. 738.
54. Ehrlich, *op. cit.*, p. 136-37.
55. A. S. David, *National Development, Population and Family Planning in Nepal*, June-July 1968, p. 53-54.
56. James Fawcett, personal communication, September 1968.
57. Samuel, *op. cit.*, p. 12.
58. Goran Ohlin, *Population Control and Economic Development*, Development Centre of the Organization for Economic Cooperation and Development, 1967, p. 104.
59. W. Phillips Davison, personal communication, 4 October 1968. Davison suggests a good pension (perhaps \$400 a year) for men aged 60, married for at least 20 years, with no sons.
60. David, *op. cit.*, p. 53.
61. Davis, *op. cit.*, p. 738.
62. Young, *op. cit.*, p. 10.
63. Titmuss & Abel-Smith, *op. cit.*, p. 130.
64. Kingsley Davis, personal communication, 7 October 1968.
65. Ehrlich, *op. cit.*, p. 138.
66. Bernard Berelson, Amitai Etzioni, brief formulations, 1962, 1967.
67. Philip M. Hauser, in "The Behavioral Sciences and Family Planning Programs: Report on a Conference", *Studies in Family Planning*, no. 23, October 1967, p. 9.
68. Davis, *op. cit.*, p. 738.
69. David, *op. cit.*, p. 54.
70. Judith Blake, "Demographic Science and the Redirection of Population Policy", in Mindel C. Sheps & Jeanne Clare Ridley, eds., *Public Health and Population Change: Current Research Issues*, University of Pittsburgh Press, 1965, p. 62.
71. Davis, *op. cit.*, p. 737.
72. Meier & Meier, *op. cit.*, p. 9. For the initial formulation of the proposal, see Richard L. Meier, *Modern Science and the Human Fertility Problem*, Wiley, 1959, chapter 7, esp. p. 171 ff.
73. Philip M. Hauser, "Family Planning and Population Programs": A Book Review Article", *Demography*, vol. 4, 1967, p. 412.
74. United Nations Economic and Social Council. Commission on the Status of Women. "Family Planning and the Status of Women: Interim Report of the Secretary-General", 30 January 1968, esp. p. 17 ff.
75. Roger Revelle, as quoted in "Too Many Born? Too Many Die. So Says Roger Revelle", by Milton Viorst, *Horizon*, Summer 1968, p. 35.
76. David M. Heer & Dean O. Smith, "Mortality Level and Desired Family Size", paper prepared for presentation at Population Association of America meeting, April 1967. See also David A. May and David M. Heer, "Son Survivorship Motivation and Family Size in India: A Computer Simulation", *Population Studies*, 22, 1968, p. 199-210.
77. Ehrlich, *op. cit.*, p. 161-66, *passim*. The author makes the same point in his article, "Paying the Piper", *New Scientist*, 14 December 1967, p. 655: "Refuse all foreign aid to any country with an increasing population which we believe is not making a maximum effort to limit its population . . . The United States should use its power and prestige to bring extreme diplomatic and/or economic pressure on any country or organization [the Roman Catholic Church?] impeding a solution to the world's most pressing problem."
78. Ehrlich, *op. cit.*, p. 138. In the earlier article cited just above, he calls for a "Federal Population Commission with a large budget for propaganda", presumably limited to the United States (p. 655).
79. S. Chandrasekhar, "India's Population: Fact, Problem and Policy", in S. Chandrasekhar, ed., *Asia's Population Problems*, Allen & Unwin, 1967, p. 96, citing a Julian Huxley suggestion of 1961.
80. Meier & Meier, *op. cit.*, p. 5.
81. Davis, *op. cit.*, p. 731-33.
82. Davis, *op. cit.*, p. 738, 739.
83. Steven Polgar, in "The Behavioral Sciences and Family Planning Programs: Report on a Conference", *Studies in Family Planning*, no. 23, October 1967, p. 10. See also the recent suggestion of research on "the possibilities for artificially decreasing libido", in *Approaches to the Human Fertility Problem*, *op. cit.*, p. 73.
84. National Academy of Sciences, Committee on Science and Public Policy, *The Growth of World Population*, 1963, p. 5, 28-36. This recommendation has of course been made on several occasions by several people: "we need a better contraceptive". For an imaginative account of the impact of biological developments, see Paul C. Berry, *Origins of Positive Population Control, 1970-2000*, Working Paper, Appendix to *The Next Thirty-Four Years: A Context for Speculation*, Hudson Institute, February 1966.
85. For example, see Sheldon J. Segal, "Biological Aspects of Fertility Regulation", MS prepared for University of Michigan Sesquicentennial Celebration, November 1967.
86. In passing it is worth noting that such expectations are not particularly reliable. For example, in 1952-1953 a Working Group on Fertility Control was organized by the Conservation Foundation to review the most promising "leads to physiologic control of fertility", based on a survey conducted by Dr. Paul S. Henshaw and Kingsley Davis. The Group did identify a lead that became the oral contraceptive (already then under investigation) but did not mention the intrauterine device. The Group was specifically searching for better ways to control fertility because of the population problem in the developing world, and considered the contraceptive approach essential to that end: "It thus appears imperative that an attempt be made to bring down fertility in overpopulated regions without waiting for a remote, hoped-for transformation of the entire society . . . It seems plausible that acceptable birth control techniques might be found, and that the application of science to developing such techniques for peasant regions might yield revolutionary results." (*The Physiological Approach to Fertility Control, Report of the Working Group on Fertility Control*, The Conservation Foundation, April 1953, p. 69.)
87. Z. Dvorak, V. Trmka, and R. Vasicek, "Termination of Pregnancy by Vacuum Aspiration", *Lancet*, vol. 2, 11 November 1967, p. 997-98; and D. Kerslake and D. Casey, "Abortion Induced by Means of the Uterine Aspirator", *Obstetrics and Gynecology*, vol. 30, July 1967, p. 35-45.
88. A. S. Parkes, "Can India Do It?", *New Scientist*, vol. 35, July 1967, p. 186.
89. These are only illustrative magnitudes. Actually, the five million does not really represent 5/22nd of the birth rate since an aborted woman could again become pregnant within a period of months, whereas a newly pregnant woman would not normally become so for over a year. Thus it may be that abortion needs to be combined with contraceptive practice and used mainly for contraceptive failures or "accidents" in order to be fully effective as a means of fertility limitation in the developing countries.
90. Report in *The New York Times*, November 17, 1967. The then-Minister had earlier suggested a substantial bonus (100 rupees)

it is considered urgent, much more can and will be done. The fact is that despite the large forward strides taken in international recognition of the problem in the 1960's, there still does not exist the informed, firm, and constant conviction in high circles that this is a matter with truly great ramifications for human welfare.¹⁶¹ Such convictions must be based on sound knowledge. Here it would appear that the demographers and economists have not sufficiently made their case to the world elite—or that, if made, the case has not sufficiently been brought to their attention or credited by them. Population pressures are not sharply visible on a day-to-day or even year-to-year basis nor, short of major famine, do they lend themselves to dramatic recognition by event. Moreover, the warnings of demographers are often dismissed, albeit unfairly and wrongly, on their record of past forecasts:¹⁶² after all, it was only a generation ago that a declining population was being warned about in the West. It is asking government leaders to take very substantial steps indeed when population control is the issue—substantial for their people as well as for their own political careers—and hence the case must be not only substantial but virtually incontrovertible. Accordingly, the scientific base must be carefully prepared (and perhaps with some sense of humility about the ease of predicting great events, on which the record is not without blemishes). Excluding social repression and mindful of maximizing human freedom, greater measures to meet the problem must rely on heightened awareness of what is at stake, by leaders and masses alike.

What is beyond family planning? Even if most of the specific plans are not particularly new, that in itself does not mean that they are to be disregarded. The questions are; which can be effected, given such criteria? how can they be implemented? what will be the outcome?

This paper is an effort to promote the discourse across the professional fields concerned with this important issue. Given the recent stress on family planning programs as the "means of choice" in dealing with the problem, it is natural and desirable that counter positions should be put forward and reviewed. But that does not in itself settle the critical questions. What can we do now to advance the matter? Beyond family planning, what?

FOOTNOTES

1. As one example, see "Declaration on Population: The World Leaders' Statement", signed by 30 heads of state, in *Studies in Family Planning*, no. 26, January 1968.
2. For example, see Kingsley Davis, "Population Policy: Will Current Programs Succeed?", *Science*, vol. 158, 10 November 1967, p. 730-739; Robert G. Potter, Ronald Freedman, and L. P. Chow, "Taiwan's Family Planning Program", *Science*, vol. 160, 24 May 1968, p. 848-853; and Frank W. Notestein, "Population Growth and Its Control", MS prepared for American Assembly meeting on World Hunger, Fall 1968.
3. See, for example, the section on "Goals" in Davis, *op. cit.*, p. 731-733, and the 1968 presidential address to the Population Association of America, "Should the United States Start a Campaign for Fewer Births?", by Ansley J. Coale.
4. For current targets of some national family planning programs, see table 8, p. 39, and accompanying text in Bernard Berelson, "National Family Planning Programs: Where We Stand", prepared for University of Michigan Sesquicentennial Celebration, November 1967, which concludes: "By and large, developing countries are now aiming at the birth rates of Western Europe 75 years ago or the United States 50 years ago."
5. For a first effort to outline the matter, see point 12, p. 46-51, in Berelson, *op. cit.*
6. Howard C. Taylor Jr. & Bernard Berelson, "Maternity Care and Family Planning as a World Program", *American Journal of Obstetrics and Gynecology*, vol. 100, 1968, p. 885-893.
7. Davis, *op. cit.*, p. 732, 738.
8. Paul R. Ehrlich, *The Population Bomb*, Ballantine Books, 1968, p. 139.
9. S. Chandrasekhar, "Should We Legalize Abortion in India?", *Population Review*, 10, 1966, 17-22.
10. Melvin M. Ketchel, "Fertility Control Agents as a Possible Solution to the World Population Problem", *Perspectives in Biology and Medicine*, vol. 11, 1968, p. 687-703. See also his "Should Birth Control Be Mandatory?", in *Medical World News*, 18 October 1968, p. 66-71.
11. Ehrlich, *op. cit.*, p. 135-36. The author appears to dismiss the scheme as unworkable on page 136 though two pages later he advocates "ample funds" to "promote intensive investigation of new techniques of birth control, possibly leading to the development of mass sterilizing agents such as were discussed above".
12. Kenneth E. Boulding, *The Meaning of the Twentieth Century: The Great Transition*, Harper & Row, p. 135-36. For the record, I note a statement that appeared too late for consideration but does argue for "mutual coercion, mutually agreed upon by the majority of the people affected": Garrett Hardin, "The Tragedy of the Commons", *Science*, 162, 13 December 1968, p. 1247.
13. William B. Shockley, in lecture at McMaster University, Hamilton, Ontario, reported in *New York Post*, 12 December 1967.
14. Sripati Chandrasekhar, as reported in *The New York Times*, 24 July 1967. Just as this

- paper was being completed, the same author "proposed that every married couple in India deny themselves sexual intercourse for a year . . . Abstinence for a year would do enormous good to the individual and the country" (as reported in *The New York Times*, 21 October 1968). The reader may wish to consider this the 30th proposal and test it against the criteria that follow.
15. Davis, *op. cit.*, p. 738.
 16. Davis, *op. cit.*, p. 738.
 17. Sloan Wayland, "Family Planning and the School Curriculum", in Bernard Berelson et al., eds., *Family Planning and Population Programs*, University of Chicago Press, 1966, p. 353-62; his "Population Education, Family Planning and the School Curriculum", MS prepared for collection of readings edited by John Ross and John Friesen, *Family Planning Programs: Administration, Education, Evaluation*, forthcoming 1969; and two manuals prepared under his direction: *Teaching Population Dynamics: An Instructional Unit for Secondary School Students and Critical Stages in Reproduction: Instruction Materials in General Science and Biology*, both Teachers College, Columbia University, 1965.
 18. Pravin Visaria, "Population Assumptions and Policy", *Economic Weekly*, 8 August 1964, p. 1343.
 19. Ehrlich, *op. cit.*, p. 162.
 20. Richard L. Meier & Gitta Meier, "New Directions, A Population Policy for the Future", University of Michigan, revised MS, October 1967, p. 11.
 21. UNESCO Expert Mission, *Preparatory Study of a Pilot Project in the Use of Satellite Communication for National Development Purposes in India*, 5 February 1968, especially the section on "The Population Problem", p. 13-14, paras. 61-66.
 22. Wilbur Schramm & Lyle Nelson, *Communication Satellites for Education and Development—The Case of India*. Stanford Research Institute, July 1968: "Family Planning", p. 63-66.
 23. Sripati Chandrasekhar, as reported in *The New York Times*, 19 July 1967. Here again I note for the record a very recent "Proposal for a Family Planning Bond", by Ronald J. Ridker, USAID—India, July 1968. This memorandum is a comprehensive and quite detailed review of the issues involved in providing 20-year bonds for couples sterilized after the second or third child. Along this same line, see another late suggestion of a bond linked both to age of marriage and to number of children, in *Approaches to the Human Fertility Problem*, prepared by The Carolina Population Center for the United Nations Advisory Committee on the Application of Science and Technology to Development, October 1968, p. 68.
 24. Edward Pohlman, "Incentives for 'Non-Maternity' Cannot 'Compete' with Incentives for Vasectomy", Central Family Planning Institute, India, MS 1967?
 25. T. J. Samuel, "The Strengthening of the Motivation for Family Limitation in India", *The Journal of Family Welfare*, vol. 13, 1966, p. 11-12.
 26. Davis, *op. cit.*, p. 738.
 27. Julian Simon, "Money Incentives to Reduce Birth Rates in Low-Income Coun-

- for vasectomy, the funds to be taken from U.S. counterpart, "but both Governments are extremely sensitive in this area. Yet in a problem this crucial perhaps we need more action and less sensitivity" (S. Chandrasekhar, in *Asia's Population Problem*, *op. cit.*, p. 96).
91. United Nations Advisory Mission, *Report on the Family Planning Programme in India*, February 1966. See Chapter XI: "Social Policies to Promote Family Planning and Small Family Norms."
 92. Bhatia, *op. cit.*
 93. Central Family Planning Council, Resolution No. 8, January 1967, in *Implications of Raising the Female Age at Marriage in India*, Demographic Training Research Centre, 1968, p. 109; and *Centre Calling*, May 1968, p. 4.
 94. Samuel, *op. cit.*, p. 12.
 95. United Nations Advisory Mission, *op. cit.*, p. 87.
 96. *Planned Parenthood*, March 1968, p. 3.
 97. Report in *The New York Times*, September 12, 1968.
 98. *Planned Parenthood*, April 1968, p. 2.
 99. Davidson R. Gwatkin, "The Use of Incentives in Family Planning Programs", Memorandum, Ford Foundation, November 1967, p. 6-7.
 100. Davis, *op. cit.*, p. 739.
 101. Ketchel, *op. cit.*, p. 701.
 102. For a review of this development see Richard Symonds & Michael Carder, *International Organisations and Population Control (1947-1967)*, Institute of Development Studies, University of Sussex, April 1968.
 103. See footnote 17. At present population materials are being included in school programs in Pakistan, Iran, Taiwan, and elsewhere.
 104. As, for example, with Balfour, Mauldin, and Pohlman, *op. cit.*; and for the economic analysis, Enke and Simon, *op. cit.*
 105. Davis, *op. cit.* (footnote 64).
 106. In effect, Israel has a program of this general character, though not for population control purposes, but it is a highly skilled society especially from an administrative standpoint. I understand that the Ceylon Government has a program of "agricultural youth settlements", aimed jointly at youth unemployment and agricultural production but not population control. Of the 200,000 unemployed youth aged 19-25, the Government plans to settle 20-25,000 in the 1966-70 period.
 107. Taylor & Berelson, *op. cit.*, p. 892.
 108. Davison, *op. cit.* and revised figures.
 109. UNESCO Expert Mission, *op. cit.*, p. 23.
 110. Schramm & Nelson, *op. cit.*, p. 164-68, *passim*.
 111. For the negative answer, see Enke and Simon, *op. cit.* Data from family planning budgets and national development budgets contained in five-year development plans.
 112. Enke and Simon, *op. cit.*; see also Paul Demeny, "Investment Allocation and Population Growth", *Demography*, vol. 2, 1965, p. 203-232; and his "The Economics of Government Payments to Limit Population: A Comment," *Economic Development and Cultural Change*, vol. 9, 1961, p. 641-644.
 113. Berelson, *op. cit.* (footnote 4), p. 20.
 114. Warren Robinson, "Conceptual and Methodological Problems Connected with Cost-Effectiveness Studies of Family Planning Programs" and David F. Horlocher, "Measuring the Economic Benefits of Population Control: A Critical Review of the Literature," Working Papers nos. 1 & 2, Penn State-U. S. AID Population Control Project, May 1968.
 115. Even in the United States, where a recent study concluded that "Altogether, the economic benefits (of family planning programs) alone would be at least 26 times greater than the program costs": Arthur A. Campbell, "The Role of Family Planning in the Reduction of Poverty", *Journal of Marriage and the Family*, vol. 30, 1968, p. 243.
 116. Pohlman, *op. cit.*
 117. Mr. Pohlman has under preparation a major MS on this subject, entitled *Incentives in Birth Planning*.
 118. Simon, "Family Planning Prospects . . .", *op. cit.* (footnote 27), p. 8.
 119. Spengler, *op. cit.*, p. 29-30. The Population Council is just now completing an analysis of the possible effects and costs of incentive programs with differing assumptions as to acceptance and continuation.
 120. Enke, "The Gains . . .", *op. cit.* (footnote 32), p. 179.
 121. Balfour, *op. cit.*
 122. Coale, *op. cit.*, p. 2. However, the author does point out, a few sentences later, that "it is clearly fallacious to accept as optimal a growth that continues until overcrowding makes additional births intolerably expensive."
 123. Davis, *op. cit.*, p. 738.
 124. For example, The World Leaders' Statement, *op. cit.*; and the Resolution of the International Conference on Human Rights on "Human Rights Aspects of Family Planning", adopted 12 May 1968, reported in *Population Newsletter* issued by the Population Division, United Nations, no. 2, July 1968, p. 21 ff.
 125. The issue was sufficiently alive in classical times to prompt the great philosophers to take account of the matter in their political proposals. In Plato's *Republic*, "the number of weddings is a matter which must be left to the discretion of the rulers, whose aim will be to preserve the average of population (and) to prevent the State from becoming either too large or too small"—to which end certain marriages have "strict orders to prevent any embryo which may come into being from seeing the light; and if any force a way to the birth, the parents must understand that the offspring of such a union cannot be maintained, and arrange accordingly" (Modern Library edition, p. 412, 414). In Aristotle's *Politics*, "on the ground of an excess in the number of children, if the established customs of the state forbid this (for in our state population has a limit), no child is to be exposed, but when couples have children in excess, let abortion be procured before sense and life have begun . . ." (Modern Library edition, p. 316).
 126. After noting that economic constraints have not been adopted in South Asia, though often proposed, Gunnar Myrdal continues: "The reason is not difficult to understand. Since having many children is a main cause of poverty, such measures would penalize the relatively poor and subsidize the relatively well off. Such a result would not only violate rules of equity but would be detrimental to the health of the poor families, and so of the growing generation." *Asian Drama: An Inquiry into the Poverty of Nations*, Pantheon, 1968, vol. 2, p. 1502-3.
 127. Frank W. Notestein, "Closing Remarks", in Berelson *et al.*, editors, *op. cit.*: "There is a real danger that sanctions, for example through taxation, would affect adversely the welfare of the children. There is also danger that incentives through bonuses will put the whole matter of family planning in a grossly commercial light. It is quite possible that to poor and harassed people financial inducements will amount to coercion and not to an enlargement of their freedom of choice. Family planning must be, and must seem to be, an extension of personal and familial freedom of choice and thereby an enrichment of life, not coercion toward its restriction." (p. 828-29).
 128. Coate, *op. cit.*, p. 7.
 129. Coale, *op. cit.*, p. 7.
 130. Coale, *op. cit.*, p. 6.
 131. Figures based on monthly reports from national programs. Since most of the Indian achievement is in sterilization, it may have a more pronounced effect. For a sophisticated analysis of the Taiwan effort that concludes, "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", see Robert G. Potter, Ronald Freedman, and L. P. Chow, "Taiwan's Family Planning Program", *Science*, vol. 160, 24 May 1968, p. 852.
 132. Berelson, *op. cit.*, p. 35-38.
 133. In this connection, see the novel by Anthony Burgess, *The Wanting Seed*, Ballantine Books, 1963. At the same time, a long-time observer of social affairs remarks that "the South Asian countries . . . can, to begin with, have no other principle than that of voluntary parenthood . . . State direction by compulsion in these personal matters is not effective . . ." (Myrdal, *op. cit.*, p. 1501).
 134. Gerald I. Zatzchni, "International Postpartum Family Planning Program: Report on the First Year", *Studies in Family Planning*, no. 22, August 1967, p. 14 ff.
 135. Howard C. Taylor, Jr., personal communication.
 136. Edgar Snow, "The Chinese Equation," *The (London) Sunday Times*, January 23, 1966.
 137. For example, the repeal of the free abortion law in Rumania resulted in an increase in the birth rate from 14 in the third quarter of 1966 to 38 in the third quarter of 1967. For an early report, see Roland Pressat, "La suppression de l'avortement légal en Roumanie: premiers effets," *Population*, vol. 22, 1967, p. 1116-18.
 138. See U.S. Department of Health, Education, and Welfare, Social Security Administration. "Social Security Programs Throughout the World, 1964".
 139. Vincent H. Whitney, "Fertility Trends and Children's Allowance Programs," in Eveline M. Burns, editor, *Children's Allowances and the Economic Welfare of Children: The Report of a Conference*, Citizens' Committee for Children of New York,

- 1968, p. 123, 124, 131, 133.
140. S. N. Agarwala, "Raising the Marriage Age for Women: A Means to Lower the Birth Rate", in *Implications of Raising the Female Age at Marriage in India*, Demographic Training and Research Centre, 1968, p. 21.
141. V. C. Chidambaram, "Raising the Female Age at Marriage in India: A Demographer's Dilemma", in *Implications, op. cit.*, p. 47.
142. Chandrasekhar, *op. cit.* (footnote 79), p. 96.
143. Kumudini Dandekar, "Population Policies", *Proceedings of the United Nations World Population Conference, 1965*, p. 4.
144. However, see David Chaplin, "Some Institutional Determinants of Fertility in Peru", manuscript, April 1968, for some evidence that welfare and labor regulations in Peru discourage the employment of women in low-fertility occupations (factory work) by making them more expensive to employ than men. Laws thus designed to promote maternity do so only by default since the higher fertility of the disemployed women will occur outside the protection of adequate medical and welfare institutions.
145. Actually, recent research is calling into question some of the received wisdom on the prior need of such broad institutional factors for fertility decline. If further study supports the new findings, that could have important implications for present strategy in the developing countries. See Ansley J. Coale, "Factors Associated with the Development of Low Fertility: An Historic Summary", *Proceedings of the United Nations World Population Conference, 1965*, vol. 2, p. 205-209; and his paper, "The Decline of Fertility in Europe from the French Revolution to World War II", prepared for University of Michigan Sesquicentennial Celebration, November 1967.
146. As the roughest sort of summary of table 1, if one assigns values from 5 for High to 1 for Low, the various proposals rank as follows:
- | | |
|--|----|
| Family Planning Programs | 25 |
| Intensified Educational Campaigns | 25 |
| Augmented Research Efforts | 24 |
| Extension of Voluntary Fertility Control | 20 |
| Shifts in Social and Economic Institutions | 20 |
| Incentive Programs | 14 |
| Tax and Welfare Benefits and Penalties | 14 |
| Political Channels and Organizations | 14 |
| Establishment of Involuntary Fertility Control | 14 |
147. Davis, *op. cit.*, p. 739. The same critic was a strong advocate of family planning in India, and quite optimistic about its prospects even in the pre-IUD or pill era and with a health base. See Kingsley Davis, "Fertility Control and the Demographic Transition in India", in *The Interrelations of Demographic, Economic, and Social Problems in Selected Underdeveloped Areas*, Milbank Memorial Fund, 1954, concluding:
- "Although India is already well-launched in the rapid-growth phase of the demographic transition, there is no inherent reason why she should long continue in this phase. She need not necessarily wait patiently while the forces of urbaniza-
- tion, class mobility, and industrial development gradually build up to the point where parents are forced to limit their offspring on their own initiative and without help, perhaps even in the face of official opposition . . . Realistically appraising her situation, India has a chance to be the first country to achieve a major revolution in human life—the planned diffusion of fertility control in a peasant population prior to, and for the benefit of, the urban-industrial transition." (p. 87-88).
148. See, for example, Visaria, *op. cit.*, p. 1343; Bhatia, *op. cit.*; Samuel, *op. cit.*, p. 12; U.N. Advisory Mission, *op. cit.*, Chapter XI; Chandrasekhar, in *Asia's Population Problem, op. cit.*; Myrdal, *op. cit.*, p. 1502; *Implications . . . , op. cit.*; and "Shah Committee Recommends Liberalization of Abortion Laws", *Family Planning News*, September 1967, p. 23.
149. Snow, *op. cit.*
150. K. Kanagaratnam, personal communication, August 8, 1968.
151. Ohlin, *op. cit.*, p. 104, 105.
152. Ketchel, *op. cit.*, p. 697-99.
153. Meier, *op. cit.*, p. 167.
154. United Nations Advisory Mission, *op. cit.*, p. 87.
155. Davis, *op. cit.*, 1954, p. 86.
156. Myrdal, *op. cit.*, p. 1503.
157. Dudley Kirk, "Population Research in Relation to Population Policy and National Family Planning Programs," paper presented at meetings of the American Sociological Association, August 1968.
158. Harry M. Raulet, *Family Planning and Population Control in Developing Countries*, Institute of International Agriculture, Michigan State University, November 1968, pp. 5-6, 49-50.
159. Ehrlich, *op. cit.*, p. 191.
160. It begins to appear that the prospects for fertility control may be improving over the decades. After reviewing several factors that "favor a much more rapid (demographic) transition than occurred in the West"—changed climate of opinion, religious doctrine, decline of infant mortality, modernization, fertility differentials, grass roots concern, and improved contraceptive technology—Dudley-Kirk shows in a remarkable tabulation that the later a country began the reduction of its birth rate from 35 to 20, the shorter time it took to do so: from 73 years (average) in 1831-1860, for example, to 21 years after 1951, and on a consistently downward trend for over a century. (In his "Natality in the Developing Countries: Recent Trends and Prospects", prepared for University of Michigan Sesquicentennial Celebration, November 1967, p. 11-13.)
161. Nor, often, among the general public. For example, in mid-summer 1968 the Gallup Poll asked a national sample of adults: "What do you think is the most important problem facing this country today?" Less than one per cent mentioned population. (Gallup release, 3 August 1968, and personal communication.)
162. For an old but enlightening review, see Harold Dorn, "Pitfalls in Population Forecasts and Projections," *Journal of the American Statistical Association*, vol. 45, 1950, p. 311-34.



THE POPULATION COUNCIL

245 Park Avenue, New York, New York 10017

The Population Council is a foundation established in 1952 for scientific training and study in population matters. It endeavors to advance knowledge in the broad field of population by fostering research, training, and technical consultation and assistance in the social and bio-medical sciences.

BOARD OF TRUSTEES

- John D. Rockefeller 3rd, Chairman
Chairman of the Board, The Rockefeller Foundation
- Bernard Berelson
President, The Population Council
- Eugene R. Black
- Dellev W. Bronk
President Emeritus, Rockefeller University
- Mary I. Bunting
President, Radcliffe College
- Robert H. Ebert
Dean, Harvard Medical School
- Roswell L. Gilpatric
Cravath, Swaine & Moore
- Caryl P. Haskins
President, Carnegie Institution of Washington
- A. Leon Higginbotham, Jr.
Judge, U. S. District Court for the Eastern District of Pennsylvania
- Donald H. McLean, Jr.
President, Lahey Clinic Foundation, Inc.
- Bill D. Moyers
Publisher, Newsday
- Frank W. Notestein
President Emeritus, The Population Council
- Theodore W. Schultz
Professor of Economics, University of Chicago
- Lewis L. Strauss
Rawleigh Warner, Jr.
President, Mobil Oil Corporation
- Gilbert F. White
Professor of Geography, University of Chicago

SENIOR STAFF (New York)

- Bernard Berelson
President
- W. Parker Mauldin
Director, Demographic Division
- David L. Sills
Associate Director, Demographic Division
- Sheldon J. Segal
Director, Bio-Medical Division
- Harry W. Rudel, M.D.
Associate Director, Bio-Medical Division
- Howard J. Tatum, M.D.
Associate Director, Bio-Medical Division
- Christopher Tietze, M.D.
Associate Director, Bio-Medical Division
- Richmond K. Anderson, M.D.
Director, Technical Assistance Division
- Clifford A. Pease, M.D.
Associate Director, Technical Assistance Division
- Clarkson Hill
Director of Administration

"Incentives in Family Planning: Time for a New Look"

J. Timothy Sprehe, mimeographed,

October 1971

(Editor's note: Only three years after publication of the Berelson paper it has become evident that many international agencies, governments, and social scientists are (1) discouraged over progress with family planning as a means of reducing fertility, and (2) increasingly aware of the need for supplemental measures to solve the population problem. The search for such measures has returned to incentives as a possibility that deserves testing.)

This review of literature and issues surrounding the use of incentives in family planning programs leads to the general conclusion that a "new look" is needed. The author suggests that incentives can be divided into the following dichotomous categories:

Acceptor versus administrative
Immediate versus delayed
Individual versus group
Positive versus negative
Monetary versus non-monetary
Graduated versus non-graduated
Contraceptive versus births-prevented

The author also offers five generalizations about immediate incentives :

1. Acceptor incentives do increase the rate of adoption of family planning;
2. Acceptor incentives lead to acceptance of family planning by different individuals than would otherwise accept such an innovation;
3. While acceptor incentives increase the quantity of adoptions of family planning, the quality of such acceptor-decisions may be relatively low, leading to limitation in the intended consequences of adoption;
4. Administrative incentives increase the rate of adoption of family planning by encouraging interpersonal communication about family planning;
5. While administrative incentives increase the rate of adoption of family planning, the quality of such acceptor-decisions may be relatively low, leading to undesired consequences.

This paper contends that the incentive principle is well grounded in behavioral research and offers some guidelines for experimental incentive programs:

1. The program should be in a setting which has an adequate delivery system for family planning services;
2. The program should be structured as regards economics and financing so that the host country could realistically expect to adopt the program itself;
3. The program must be politically feasible;

Annotation 5a

4. The program should have provision for surveillance, measurement, etc. of administrative pathologies (fraud, cheating, graft) and other un-anticipated, undesired consequences;
5. The program should be administratively simple and/or utilize existing administrative structures;
6. The program should have a multidisciplinary research design for evaluation;
7. The program should perform multiple functions;
8. The program should be associated with a competent indigenous research institution and involve host country professionals in the design and conduct of the experiment.

In conclusion the author calls for evaluation of ongoing incentive projects, and research and development of new incentive programs.

INCENTIVES IN FAMILY PLANNING PROGRAMS:

TIME FOR A NEW LOOK

J. Timothy Sprehe
Office of Population
Technical Assistance Bureau
Agency for International Development

For the past decade, proposals for utilizing monetary and non-monetary incentive payments to increase the practice of family planning and thereby halt soaring population growth rates have been debated in the scientific literature, in various forums within population donor agencies, and in general among a broad segment of the population community.* A bewildering variety of schemes has been proposed. Some would offer payment directly to women who accept family planning; others involve piecework compensation to family planning workers for recruiting acceptors or to physicians for rendering medical services. Timeframes vary widely. Some schemes depend on on-the-spot payments; others postpone payment as much as fifteen or twenty years. Proponents of incentives schemes have sometimes promised nearly miraculous results in utopian rhetoric; opponents have predicted dire failure in the darkest terms.

The purpose of this paper is to examine critically some of the literature surrounding incentives in family planning, to search out what empirical generalizations the literature may yield, and to propose a set of guidelines applicable to the implementation of incentives programs.

DEFINITIONS AND CONCEPTS

For the purposes of this paper, an incentive is an object of financial value given by an organization to an individual, couple, or group in order to encourage some overt behavioral change.* An incentive, whether monetary or non-monetary, could be paid to a woman for adopting contraceptives; it could be paid to a physician or family planning worker for administering services; it could be paid to a canvasser for "motivating" women to come into the clinic. Attitudes, values, and various forms of social relationships are not considered incentives in the present context, for they are not matters of direct financial value.**

* Most recently, the Carolina Population Center at the University of North Carolina held a two-day working conference concerning incentives in family planning programs on June 24-25, 1971. This paper is an outgrowth of the author's participation in the CPC conference, his own review of the literature, and conversations with persons knowledgeable in this field.

** This definition is adapted from Edward Pohlman, Incentives and Compensations in Birth Planning, Carolina Population Center, Monograph 11, 1971, p. 5, and the definition, together with many of the ideas presented here have been stimulated by Everett Rogers, "Incentives in the Diffusion of Family Planning Innovations," Chapter 5 of a book in preparation, mimeo.

** Of course, feelings can result in behavior which has consequences of financial value, but to include feelings within the definition of incentives would be to widen an already broad area beyond manageable proportions.

The above definition is a broad one, too broad in fact to be of great utility in analyzing the large number of proposals with which one is faced. Distinctions among different kinds of incentives are not only useful but necessary, since, paying money to acceptors or paying money to motivators raises quite different kinds of social science and administrative issues. A first basic distinction could be made between acceptor incentives and administrative incentives. Acceptor incentives are those paid to women for adopting contraceptives and/or avoiding pregnancy. Administrative incentives encompass various kinds of payments to physicians, nurses, social workers, and others who play a part in administering family planning programs. This distinction seems worthwhile because it can be argued that there is nothing new about administrative incentives. Paying physicians so much per IUD inserted is essentially no different than paying factory workers on a "piecework" basis.* Administrative incentives are principally an alternative way of paying salaries and wages. As such they are judged on administrative grounds of efficiency and effectiveness, grounds which may be quite different from those on which one judges acceptor incentives.

Another useful distinction is that between immediate incentives and delayed incentives. In many programs, incentive payments are immediate, given to the person at the time of adoption or shortly thereafter. However, in some cases, such as the No Baby Bonus scheme on the India tea estates, payment is delayed. Rupees are deposited in a blocked bank account which the women cannot draw upon until some specified date in a relatively distant future. Again, the two types present different kinds of conceptual and administrative considerations. The rationale behind immediate incentives is generally that of "nudging" an apathetic client into a positive action; and payment is usually small. The rationale of delayed incentives is most often that of old age security; and the payment, a kind of induced savings, is ultimately very large.

Other distinctions have been proposed in the literature and may be summarized as follows:*

Individual vs. group incentives. In some programs, groups are rewarded on the basis of collective individual behavior; that is, if enough individuals in the village were to adopt family planning, then a bonus reward would be given to the whole village. The integrated family planning scheme proposed by Lenni Kangas** is an example. In Haryana, India, one minister is in charge of four public agencies; he is able to reward a community for meeting the goals of the family planning agency by manipulating rewards from other agencies-- e.g., a community which shows high performance in family planning may receive a community well ahead of schedule.

Positive vs. negative incentives. Whether payment is given as a reward for behavior change (positive) or the individual is penalized for failing to change behavior (negative). In the U.S., for example, the tax structure constitutes something of a negative incentive system for getting married and having children.

* And much research exists concerning the use of this kind of incentive in business and industrial settings; cf. R. Marriott, *Incentive Payment Systems*, London, Staples Press, 1968.

* These distinctions are taken from Rogers, *op. cit.*, who also provides somewhat more discussion of each.

** L.W. Kangas, "Integrated Incentives for Fertility Control," *Science*, Vol. 169, 1970, pp. 1278-1283.

Monetary vs. non-monetary incentives. In some cases, a sari has been given to tubectomy adopters. Other non-monetary incentives such as transistor radios or village wells and roads (also group incentives) have been proposed.

Graduated vs. nongraduate incentives. Whether all persons receive the same payment or some are paid more than others; e.g., younger women and women with lower parity receiving higher payment. In the tea estate scheme, repeated failure of a woman to remain non-pregnant results in graduated reduction of her blocked bank account.

Contraceptive vs. births-prevented incentives. Whether payment is made for adopting contraception--administratively more simple, demographically more dubious--or for remaining non-pregnant--administratively more difficult, demographically more effective.

THE NEED FOR A NEW LOOK AT INCENTIVES

In the heat of debate over incentives proposals for family planning programs, a number of developments seem to receive relatively little notice. Taken together, these developments call for a new look at the possibilities and potentialities of incentives in family planning.

The first thing which needs to be realized by those who debate the merits of incentives is that incentives have long since passed the "idea" or proposal stage and have moved well into the implementation stage. In his summary of what is currently known concerning incentives in family planning, Everett Rogers points out the following facts:*

1. Incentives programs are currently in operation in nine less developed countries, most of which are major to the world population problem: Pakistan, India, Korea, Turkey, U.A.R., Taiwan, Ghana, Indonesia and Mauritius.
2. Nearly 22 per cent of the total family planning budget in India's 1969-1974 Five-Year Plan is for incentives. The 1970-1971 annual family planning budget listed 7,470,000 rupees (about \$1 million U.S.) for the line item "Incentives."
3. Large-scale programs using incentives began in India as early as 1956 (in Tamil Nadu, then Madras State).
4. In Pakistan, "Incentives" constitute 25 per cent of the fourth Five-Year Plan (1970-1975) allocation for family planning, amounting to 151 million rupees (\$30 million U.S.).

* Rogers, op.cit. Rogers' figures come from the published budgets of India and Pakistan. In private conversation, Rogers indicates that the trend in expenditures is upwards, but this is a point which could and should be checked in order to see the exact direction and magnitude of the trend. Budgetary figures from other countries, as well as details of programs, would also be useful.

To be sure, it is not always clear what is meant by incentives in these various programs without examining them individually; mostly, they are immediate administrative incentives, although significant portions also go for acceptors. What is clear, however, is that incentives are an established fact of family planning programming in major less developed countries. As such, they must be removed from the context of something which is still in the "talk" stage.

The second thing which needs to be realized is that large investments of resources are being allocated to incentives schemes of many kinds. While the above enumeration should make this clear, it must also be seen that expenditures are going up, not down, and the indications are that this trend is unlikely to be reversed in the near future. Enthusiasm for incentives programs is such that Pakistan reports its family planning program would be "impossible without incentives, payments, since existing health facilities and personnel had to be induced to provide contraceptive services."*

And the thing which needs to be realized concerning incentives is that almost no research exists to evaluate the efficiency and effectiveness of incentive payments for increasing utilization of family planning services. The exceptions to this generalization are Repetto's analysis of the Tamil Nadu data and the Tata experiment in India. Major LDCs are spending millions of dollars on these programs and are likely to go on spending more millions. Yet no one really knows, for example, whether a dollar spent for incentives is more efficient and effective than a dollar spent on other kinds of improvements in family planning delivery systems.* No one really knows whether immediate payment schemes are more effective than delayed payments, how much and what kinds of incentive payments are necessary to induce behavior change, how permanent the behavior change will be under various administrative conditions, the relationship of an incentive system to the method of contraception being offered, the extent and gravity of administrative pathologies (such as fraud, cheating) -- and so on, to a host of other questions.

While family planning aficionados inside and outside of population donor agencies have debated the merits of various incentives schemes, LDCs have simply gone ahead and invested heavily in incentives of some types. It would appear that the time has come for academic debate to cease and for the donor agencies to begin investing immediately and heavily in rigorously designed ^{large} search which would evaluate the efficiency and effectiveness of the number of ongoing incentives programs and to test the new schemes which the LDCs are proposing almost daily it seems. Whether or not support for incentives programs is a good idea has become nugatory. Others are supporting the programs but no one knows the effects. Clearly it is central to the mandate of major population donor agencies to assist LDCs in spending their family planning funds with maximum efficiency and effectiveness. The area of incentives in family planning appears to be an important instance where such assistance is vitally needed.

* "Incentives Payments," IPPF Working Paper No. 4, 1970, p. 20.

* Nor, for that matter, whether this is even a proper or meaningful way to ask the question.

GENERALIZATIONS CONCERNING EXPERIENCE WITH INCENTIVES PROGRAMS

On the basis of his review of available evidence, Everett Rogers offers five generalizations concerning incentives in family planning. These generalizations are paraphrased below.

Generalization 1: Acceptor incentives do increase the rate of adoption of family planning. The principal evidence for this generalization comes from the Tata experience. In four factories, 3,988 married workers were offered an acceptor incentive of 200 rupees (ca. \$27 U.S.) for sterilization. They were compared, for each of five six-month periods with 3,872 workers in "non-incentive" factories (of similar size, located nearby, not offering such large incentives). The rate of adoption of sterilization was consistently higher in the factories offering the 200 rupee incentive. Rogers maintains that acceptor incentives increase adoption by emphasizing the "relative advantage" of family planning; that is, by increasing the extrinsic immediate value of family planning.

Generalization 2: Acceptor incentives lead to acceptance of family planning by different individuals than would otherwise accept such an innovation. This generalization requires some background explanation. Research in the diffusion of innovations shows that innovations--whether new fertilizer or cultivation techniques in agriculture, or for that matter new ideas or technology in any sector--are typically first adopted by the upper classes and then trickle down to the lower classes. Incentives seem to reverse this pattern; adoption is heavier among those who are lower in socio-economic status. Again referring to the Tata experience, the lower a worker's monthly income the more likely he was to accept sterilization. Also, the lower his education and the more children he had, the more likely he was to accept sterilization. From a sociological viewpoint this finding is mildly remarkable, since it means that incentives appear to reverse a well-established pattern with respect to diffusion of innovations. And, inasmuch as the lower classes are more often an important target population for family planning (since their fertility is typically high), incentives appear to be a device which can effectively accomplish program objectives.

Generalization 3: While acceptor incentives increase the quantity of adoptions of family planning, the quality of such acceptor-decisions may be relatively low, leading to limitations in the intended consequences of adoption. In other words, if you pay people to adopt family planning, it is likely they will do so. But (a) they will have little motivation to continue practicing family planning (if it can be discontinued--sterilization generally cannot), or (b) to use family planning for its "officially intended" advantages or consequences.* Acceptor incentives offer a low guarantee that the behavior change will be permanent.

The evidence for this generalization seems fairly solid. In Tamil Nadu, official policy dictated that in order to be vasectomized a man must (a) have his wife's permission, (b) have at least three children, (c) be under 50 years of age, and of course (d) be married. Repetto estimated that in about 50 per cent of the cases, one or more of these conditions was violated. Other research by Srinivasan and Kachirayan showed that the motive given most often for adopting family planning under an incentives program was simply that of receiving the money; seldom did an acceptor give a reason congruent with the official aims of family planning.

* Some administrators argue that programs must be designed so that the target population will practice family planning because they believe in it. Hence, they seek acceptors who are also "converts." Their reasoning is that only those who believe in family planning will continue to practice it and those who are forced to practice but do not believe--such as acceptors from an incentives program--will harm the program eventually through spreading misinformation or some sort of bad example. Thus,

to practice family planning for its "officially intended" consequences or advantages is to practice for the "right" reasons; anything else is a "wrong" reason.

One can counterargue, vis-a-vis a country's pressing population problem, that the important thing is control of fertility, no matter how achieved, and that changing people's beliefs is too long, difficult and expensive a road to travel, particularly when time is a crucial factor. Moreover, the burden of proof is upon the "convert 'em" school to show that low-quality acceptors measurably harm the overall program.

Generalization 4: Administrative incentives increase the rate of adoption of family planning by encouraging interpersonal communication about family planning with "homophilous peers." That is, canvassers are successful in getting people to adopt family planning principally because the canvassers are typically of the same social stratum as those they are trying to persuade (i.e., are homophilous peers--the term is Rogers'). In Tamil Nadu, vasectomy canvassers were much like acceptors: "poor, illiterate, low-caste, employed as agricultural laborers or in urban manual work, least knowledgeable about family planning methods, least accessible through the conventional promotional approaches."* And, although the program had social workers, health educators and physicians on its staff, almost all of the vasectomies were due to the efforts of the canvassers. Rogers explains the canvassers' success by saying that the most persuasive type of interaction is that which occurs with others like oneself, homophilous peers. Physicians may be highly credible authority figures and thus excellent sources of information, but they are far too socially distant to be effective persuaders of the target population.

Generalization 5: While administrative incentives increase the rate of adoption of family planning, the quality of such acceptor-decisions may be relatively low, leading to undesired consequences. That is, while canvassers are effective in bringing the people in to the clinic, they are not effective in instructing and motivating the people in correct use of family planning practices and methods. Moreover, since the canvassers are frequently motivated themselves only by desire for pecuniary gain, they are particularly prone to forms of graft and corruption. Srinivasan and Kachirayan found that "the proportion of malpractices . . . appears to be much less among those informed about vasectomy by the village officials or health staff than among those informed by canvassers or other vasectomized persons."*

Before drawing any overall conclusions from these generalizations, it should be noted that they all refer to immediate incentives, not to be delayed. As yet, even less is known about the effects of delayed incentives, particularly as regards the permanence of behavior change on the part of the acceptor.

* Rogers, op. cit.

* Ibid.

The sum and substance of these generalizations seems to be that the use of immediate incentives in family planning programs is indeed a powerful device for increasing utilization of family planning services. At the same time incentives are a device that easily misfires in the absence of careful planning and controls. Incentives are a poor assurance that women will continue to practice family planning. Moreover, incentives may be administratively difficult because of fraud, cheating and other forms of graft. Those familiar with the Pakistan program, for instance, tell of women who go to a clinic, have an IUD inserted and receive an incentive payment; they then remove the IUD, go to another clinic, and repeat the same performance.

In one sense, these generalizations point to the old dilemma between quantity and quality. Canvassers bring in many people that health officials might never reach. But the people brought in will have little knowledge of family planning and little desire to practice it. One can opt for "quality" by making sure that all acceptors are properly instructed and motivationally "converted." But the pressure for "quantity" remains, due to runaway fertility, and the temptation is strong to tolerate administrative pathologies such as the sterilization of a few 55 year old bachelors in order to reach out and bring in hundreds of 27 year old fathers of three children.

INCENTIVES IN THE CONTEXT OF MOTIVATION

In oversimplified terms, incentives present themselves as a way of nudging people towards doing something they might otherwise not do. As such, they bear centrally on the question of motivation in family planning. The need for more research in motivation has become a recurrent theme, if not an old refrain, among those concerned with the administration of family planning funds and programs. Time and again one finds statements to the effect that we need more research on opinions, attitudes and beliefs relevant to fertility behavior and, in particular, research on how to change these factors.

No one is likely to deny that there is much more to be learned concerning attitudes and beliefs with respect to fertility behavior. The sad and somewhat alarming fact, however, is that many of those who ritually call for such research do not avail themselves of what is already known concerning the relationships of attitudes and beliefs to behavior. Motivation research, after all, has been going on in a systematic fashion for decades now. Whether it be persuading people to buy a new kind of soap, or stop smoking cigarettes, or ration gasoline during a war, or vote for a particular political candidate, or stop littering the countryside, there are libraries full of research findings concerning the relationships of human motivation to human behavior.

Consequently, a first task, and one which seems hardly begun, is the application of existing knowledge concerning motivation and behavior to the field of family planning. At the least, it is inefficient for family planning administrators to set about re-inventing the motivational wheel which will make their programs roll.

Within the context of motivation research, incentives appear to be in principle the kind of device which can be a powerful change agent. Their power lies in the fact that incentives appeal to attitudes and values which are strongly and universally held--the desire for material goods--and known to be acted upon. Appeal to such values will result in behavior change.

The difficulty lies in whether or not the behavior change will be permanent. That is, if people adopt family planning only in order to receive the incentive payment, will they not cease family planning as soon as the incentive payment is received (or, in the case of periodic payments, as soon as payments are discontinued)? Would it not be a sounder strategy to work on attitude change, so that people will adopt family planning because they believe in it and hence will continue its practice?

There is some good evidence to answer these questions in the negative. No, it is not sounder strategy to work first on attitude change. Why?

Opinions, attitudes and beliefs, and particularly beliefs, change more slowly than actual behavior.

Behavior, being visible, is more responsive to extreme pressures and accommodations. Opinions, attitudes and beliefs, being private until expressed, can be maintained without being subject to question or argument. And there is no necessary reason for opinions, attitudes and beliefs (on the one hand) and behavior (on the other) to be in harmony; we are polite to acquaintances we really don't like, we go along with the majority in a committee action rather than make a fuss, we go to the polls even though we really don't care about the outcome.

A considerable body of common sense observation, clinical data, and more recently, experimental findings indicates that in many instances attitude change follows after behavioral change. Such common phrases as "rationalization," "sour grapes," etc. are adequate labels for the process at work . . . (emphasis added)*

Everyday examples of the above are easily come by: "Confirmed smokers are more likely to deny that any relationship has been established between cigarette smoking and lung cancer. Recent car buyers read advertisements that confirm them in the wisdom of their decisions, etc." (Ibid.)

Two things emerge from this: (1) it is easier to change behavior than it is to change attitudes and values; and, (2) change in behavior often causes change in attitudes and values. In passing, let it be noted that some evidence from KAP surveys corroborates this point; involvement with a family planning program often changes knowledge and practices without changing attitudes. The strategic implications would seem to be that one ought to aim first at changing the behavior in question, and then aim at holding the target population in the changed behavior state until such time as attitudes and values swing into line with the behavior. Or, in the present context, incentive payment programs can be used as a powerful mechanism for inducing

Bernard Berelson and Gary Steiner, "Opinions, Attitudes and Beliefs," Chapter 14 of Human Behavior: An Inventory of Scientific Findings (New York: Harcourt, Brace & World, 1964), p. 576. Although somewhat dated now, this entire chapter should be required reading for those who continually decry the lack of knowledge concerning motivation in family planning.

To sum up: in terms of what is currently known concerning the relations of attitudes and values to behavior, incentives are sound. To be sure, there is many an important slip twixt the cup and the lip--poor administration, and particularly the failure to back up the incentives system with strong information and education programs--but the incentive principle itself is well grounded in the context of motivation research. The serious questions surrounding the use of incentives in family planning might profitably be addressed by a deeper look into experiences with incentives in other settings such as industry and commerce. James Fawcett has suggested the following list of questions for comparative study:

What has been the experience of industry with individual vs. group incentives? Have monetary rewards been more effective than other kinds of tokens, or awards endowing social esteem? What incentive systems have been devised to insure continued good performance, analogous to continuation of contraception? Can any useful generalizations be made about the relative effectiveness of positive and negative incentives? Can a connection be made between the nature of motivations for childbearing and the type of incentives that would be effective in reducing fertility?*

VOLUNTARY VS. NON-VOLUNTARY FAMILY PLANNING

It is increasingly maintained that the voluntary approach to family planning will not get the job done. It is necessary, say many, to search out non-voluntary approaches because simply making contraceptives available to the population will not reduce birth rates fast enough. On the other hand, proponents of the voluntary approach urge that the scientific readiness, political viability, administrative feasibility and ethical acceptability of non-voluntary, coercive approaches are rather low (cf. Berelson, Beyond Family Planning).

Incentives schemes for family planning offer a potentially attractive solution to this debate because they appear to stand in the middle between voluntary and non-voluntary. They are a "nudge" in the direction of coercion--at least as most of the schemes are proposed--and yet holds perhaps the potential for utilizing the best in the voluntary approach and the best in the non-voluntary. While Berelson is rather negative concerning the political viability, administrative feasibility, economic capability and ethical acceptability, it seems better to say that we simply do not have the answers on these matters yet. Given the widespread increase in incentives programs, it would appear that Berelson's prognosis has been much too pessimistic.

DISCURSUS ON DISINCENTIVES AND POLICY RESEARCH

Presumably, one needs an incentives program to overcome existing disincentives. Existing attitudes, values and cultural norms might be thought of as disincentives (except that they are not matters of "financial value" and hence fall outside the definition of incentives). However, there are more readily identifiable and measurable disincentives than these. There are matters such as maternity benefits and tax laws which constitute pronatalist incentives or family planning disincentives. In India, for example, the amount of maternity benefits far exceeds the payment for sterilization. Poor, uneducated individuals, those who would be expected to hold a short-run perspective, may consider the maternity benefits a more immediately

* James T. Fawcett, Psychology and Population, New York: Population Council, 1970, p. 102.

desirable payment; i.e., maternity benefits operate as a disincentive to family planning.

As regards the study of existing disincentives arising from the laws of a country, an excellent beginning has been made. The Law and Population Program at Tufts University, directed by Luke T. Lee, is involved in a worldwide survey of laws which affect population and family planning. Dr. Lee's paper "Law and Family Planning" (recently published in Studies in Family Planning) provides a most useful background for understanding what disincentives exist through the legal systems of various countries.

The existence of widespread disincentives through legal systems brings out once again how important it is for population donor agencies to sponsor more applied policy research in population/family planning. Studies are needed as to just how laws and policies which operate as disincentives came into being and how they can be changed or removed. In addition to removing current obstructions, there is need for studies of ways in which laws could be used for family planning instead of against it. What would be the demographic consequences, for example, of effective laws for raising the age of marriage? Or what would be the consequences of monetary incentives programs to postpone marriage to a later age? Raising the age of marriage is only one example; the recent experience of New York state with a changed abortion laws comes also to mind.

In the recently published federal inventory of research in population/family planning, there are less than 10 studies in the area of policy research out of a total of almost 500 research projects in the social sciences. Yet the potential pay-off of such policy research in terms of reduced birth rates as a result of changed laws and policies far outweighs the likely consequences of myriads of other studies currently being supported.

GUIDELINES FOR EXPERIMENTAL INCENTIVES PROGRAMS IN FAMILY PLANNING

Incentives are an established fact of life in the family planning world of the 1970's. They are, in principle, consistent with the tradition of motivation research and may offer a solution to the voluntary-non-voluntary dilemma. Too little is known still about their application to family planning. In designing experimental incentives programs, what principles should be the guiding ones? The following guidelines are proposed as a beginning "new look" at incentives programs. They are not exhaustive. They are meant to assist in removing incentives from the area of ideological debate and getting them into the forum of scientific research and evaluation.

1. An experimental program should be in a setting which has an adequate delivery system for family planning services. No intelligent planner would propose incentives without adequate provision of services, because lack of services would defeat the incentives scheme. Moreover, assuming that an incentives program works to increase practice of family planning, this guideline is predicated on the postulate that one ought not to create a demand which cannot be satisfied. Hence, common sense and sound design would dictate the presence of an adequate delivery system functioning in any locale where an experimental incentives program might be set up.

There is more to be said concerning this guideline, however. Some argue that the need for adequate delivery systems is so great that the population effort cannot afford to divert resources into incentives schemes. There are empirically researchable questions in this argument which, if studied, could perhaps remove the matter from

philosophical debate. First, various countries are in different stages of family planning: some have none, others a little; a few countries have fairly full-blown programs. One would need to look closely at the situation in a given country to see whether the program is at a stage such that incentives could reasonably be expected to make a real difference. Obviously some countries have such a dearth of services that provision of services becomes the overriding priority for resource allocation. In countries where a delivery system is at least well established and quite likely to develop to maturity under its own power, incentives would seem more feasible.

Secondly, it is an empirically testable question as to whether a given amount of dollars spent on improvement of delivery systems would yield greater practice of family planning than the same amount of dollars spent on incentives schemes. Consequently, an experimental program in incentives should test precisely this question: allocate equal amounts of funds to two areas, one to improve services and one to provide incentives; then measure the outcome.* If nothing else, such an experiment would furnish valuable information as to how much resources need to be put into the delivery system when an incentives scheme is set up.

2. The program should be structured as regards economics and financing so that the host country could realistically expect to adopt the program itself. Clearly it is desirable to avoid the course whereby U.S. dollars are used to "buy" family planning from the LDC population forever more. Rather, the program must be within the financial and economic real possibilities of the host country.

Some economists are more emphatic than the language in this guideline. They insist that incentives programs can be, and should be, structured so as to be self-financing. For example, funds to set up the No Baby Bonus Scheme on the tea estates were provided by the tea estate association of India, not by the government of India, not by USAID.** The association is persuaded that the scheme will save them money in terms of maternity benefits, loss of worker time, etc. They may even hope to make money from the scheme. It is true that the tea estates are not the whole of India,* but since this program is actually in operation it should be possible to observe the financial feasibility of self-financing incentives schemes.

The allegation that most, if not all, incentives programs can be self-financing raises an interesting question concerning the controversy over the whole idea of incentives in family planning. Opponents of incentives cite prohibitive cost as a major obstacle to such programs; proponents say there is virtually no cost at all. Perhaps there is a failure here of interdisciplinary dialogue between economists, on

* The matter is obviously not so nicely separated in reality as these statements would indicate. A successful incentives program would quite likely create a demand for an improved delivery system; or success could be limited by a faulty delivery system. Nevertheless, careful design could lead to a qualified answer.

** Some AID funds were provided for administration--space, desks, typewriters, etc.--but the bulk of the financing was provided by the tea estate association.

* While the tea estates are not typical of all of India--a disadvantage--it should be pointed out that this is also an advantage. The estates constitute a "natural laboratory" with highly homogeneous population wherein one can study many things which cannot be well studied in the entire country, since the setting itself controls so many variables. For this reason, they are an extremely valuable research site.

the one hand, and administrators and other technical personnel on the other. It may be that economists will need to break the financial side of proposed programs down into quite simple terms in order to communicate with others whose support is critical.

3. The program must be politically feasible. This guidelines is a statement of the obvious, except that some context is provided to the statement below under Guideline 7, and it should be remembered that political feasibility is a potential problem at all levels, from local hospital administrators up to the cabinet. In passing, it may be noted that Berelson in Beyond Family Planning estimated the political feasibility of incentives programs to be moderately low. Feasibility must be getting higher if nine countries now have ongoing incentives programs.

4. The program should have provision for surveillance, measurement, etc., of administrative pathologies (fraud, cheating, graft) and other unanticipated, undesired consequences. Since these guidelines are meant to be for experimental programs, it need not be insisted that the program be administratively foolproof. Precisely one of the things which should be studied in an experimental program is the ways in which people cheat the system. If and when a large-scale operational program is set up, the lessons of the experiment could be utilized to make administration more foolproof.

Administrative pathologies are a fact of life, and few public officials would realistically expect that they will be done away with completely. Rather, it is a question of how much pathology or (to change the metaphor) system leakage can be tolerated. The Internal Revenue Service, for example, would find it prohibitively expensive to eliminate every last bit of cheating on income tax returns. The issues becomes one of the marginal utility of catching a cheater relative to the cost of catching him and the amount of damage he is doing to the system. Lily-white purity in the system is seldom demanded or expected by practical administrators. An incentives program which was dramatically successful in decreasing the birth rate ought not to be junked because of minor leaks in the system.

An example, although somewhat extreme, may illustrate what is meant by an "unanticipated, undesired consequences." Suppose an incentives program is begun, based on births-prevented incentives, and the program proves quite popular and successful. However, suppose that in order to stay in the incentives program many women who might otherwise not have done so resort to abortion, and for various reasons they do not seek abortion until the second trimester of pregnancy. The success of the incentives program would have led to an unanticipated and undesired health condition within the population. Experimental programs should have surveillance mechanisms for monitoring such developments and adjusting the program to cope with them.

5. The program should be administratively simple and/or utilize existing administrative structures. Ideally, an experimental program could "piggyback" on existing programs. This guideline could be thought of as a corollary to Guideline 2 concerning financial and economic feasibility, and is also related to Guideline 7 below. A program which requires erection of an entirely new administrative structure is not likely to be feasible, particularly on a nationwide scale in an LDC.

Administrative complexity, however, is a cost (and not simply in dollars) which must be weighed against the benefits of the overall program. If an experimental incentives program is dramatically successful in lowering the birth rate, administrative simplicity becomes less important.

6. The program should have a multidisciplinary research design for evaluation.

It appears to be in the nature of incentives schemes that they involve many sectors brought to bear on a single kind of problem. This means, among other things, that incentives schemes are complicated and likely to appear messy. It means too that an interdisciplinary approach is essential to evaluation. One needs to study economic variables, epidemiological variables, demographic variables, and social psychological variables at a minimum, and failure to include any one set of these would result in less than conclusive evaluation.

7. The program should perform multiple functions. This guideline is more in the nature of a maxim. It is by way of saying that the program will never get off the ground unless it performs multiple functions.

What does this mean? An example of a multiple-function incentives program would be one which (1) lowers the birth rate, (2) more equitably distributes income, and (3) improves the public health system. No. (1) achieves the goals of the family planning agency; no. (2) achieves the goals of the finance ministry; no. (3) achieves goals of the health ministry.

Why the multiple functions? In general, the family planning agency in a country will not have the overriding political clout. The incentives program will require cooperation of other agencies which are often more powerful, which are interested in promoting their own goals, and which may not be at all interested in family planning. The scheme will not get off the ground without the cooperation of the other agencies, which means there must be something in the scheme of use to the other agencies; hence, multiple-functions. The process of designing a scheme to achieve your own goals as well as those of other interested parties is of course called cooptation.

In passing, it should be noted that the failure to include provision for cooptation is a difficulty that would be encountered in implementing the otherwise excellently conceived proposal of Lenni Kangas. Kangas' proposal was for community incentives, whereby a community would be rewarded for high levels of individual acceptance of family planning with roads, wells, schools built, etc. The difficulty is that the family planning agency will generally not have control over construction of roads, digging of wells and building of schools. Unless the incentives program is designed to facilitate achievement of the goals of agencies which do control these things, the program is not likely even to be begun.

Cooptation is particularly important if Guideline 5 becomes a necessity. If an incentives program must work through existing administrative structures, then it will have to be of use to those structures. Cooptation is also integrally related to Guideline 3, political feasibility.

To re-state this guideline/maxim in somewhat different form: the program must either have control over other agencies necessary for the success of the scheme or be able to coopt those agencies.

8. The program should be associated with a competent indigenous research institution and involve host country professionals in the design and conduct of the experiment. This guideline is taken to be nothing more than a principle of current development philosophy, although it is also a factor crucial to host country adoption of the program.

CONCLUSION

This review of literature and issues surrounding the use of incentives in family planning programs leads to the general conclusion that a "new look" is needed. It is needed because incentives are a growing but under-researched phenomenon in family planning and a phenomenon which holds promise as a powerful motivational device. Specifically, the following recommendations can be made:

1. That major population donor agencies sponsor rigorous evaluation of ongoing incentives programs in hopes of finding out just how efficient and effective these programs are in achieving family planning objectives. What service statistics or research data can be gathered concerning the incentives schemes already in existence in the nine countries mentioned above? How is program effectiveness currently being evaluated in these countries? How could the existing incentives programs be improved and what can be learned from them for wider applicability?

2. That major population donor agencies enthusiastically support research and development of new incentives schemes when those schemes show reasonable meeting of criteria set forth in the above guidelines. What technical assistance is being offered to programs and administrators who are considering moving toward incentives? Is assistance being offered which would ensure sufficiently comprehensive and rigorous evaluation of pilot programs? Are there places where potentially good programs have not been started for lack of support from the major donor agencies?

These questions deserve a new look.

AD/HPS-MSRD
:4/13/72

"Integrated Incentives for Fertility Control"
Lenni W. Kangas, Science, Vol. 169, September 1970

This article discusses the fact that incentive proposals have been dismissed by program administrators without adequate trials. On the other hand, the author chastizes those who have presented incentives as the " 'one best way' to circumvent the myriad frustrations encountered in attempting to reduce birth rates in traditional societies."

The author recommends not only that various incentive proposals be tested, but that they be integrated with other development activities. He proposes a mix of material and financial rewards to stimulate greater individual motivation toward reducing family size.

He presents several broad categories of inputs or social-economic influences that have an impact on fertility and that are currently or potentially operative in the community.

These include:

- I. Community-wide social and economic inputs and services through government provision or control of - agriculture, non-agricultural economic activity, education, medical and health services, nutrition and food distribution, social services, and anticipated future services.
- II. Financial and material incentives for contraceptive practices including a mix of the following items directed to two principal categories of people, acceptors and providers, in accordance with the level of activity or results achieved:
 - A. Incentive to acceptors:
 1. To individuals for (i) delaying age of marriage, (ii) accepting a contraceptive method or sterilization, (iii) continuing to practice contraception, (iv) non-maternity.
 2. To couples in return for (i) accepting a contraceptive method, (ii) continuing to practice contraception, (iii) postponing first child, (iv) spacing between children, and (v) limiting family size (with rewards inverse to number of children).
 3. To groups (for instance, large, extended families, clans, and organizations such as farmer clubs, cooperative society members, or otherwise identifiable and cohesive social units) for (i) the number of new contraceptors recruited from membership, (ii) the percentage of contraceptors in membership, (iii) other practices adopted such as postponement of age of marriage and limitation of family size, and (iv) lowered group birth rate.

4. To the entire community for clearly stated public purposes and benefit. Rewards would be based on the level of fertility control achieved, as measured by (i) increases in the number of contraceptors among eligible population, (ii) the percentage of contraceptors among reproductive age groups, (iii) increases in average age of marriage, (iv) participation in activities related to family planning (i. e. vital registration), and (v) reduction in community age-specific birth rates.

B. Incentives (fees) to providers:

1. To individual providers (i) for services rendered (for instance, patients recruited, IUDs inserted), (ii) according to the number of acceptors who continue to practice contraception successfully, monitored by a follow-up system, (iii) for support provided to the family planning program by "secondary" personnel resources.
2. To groups of providers (i) for the percentage of various targets achieved, (ii) for the extent of supporting activities carried out.

III. Traditional family planning program inputs could be strengthened by incentives for specific improvements in the quality and efficiency of the following services and activities: (a) delivery of clinical contraceptive services, (b) supply and distribution of contraceptives, (c) informational, education, and motivational programs, (d) related support activities such as vital registration, special surveys, program management, and evaluation.

The author contends that a greater reduction in births at the community level could be achieved by integrating the family planning program with other ongoing social and economic development activities than without such integration. He also feels that this linkage could be effected with little extra cost to the government treasury. Finally he notes that "Recent experience with managed attempts to increase agricultural production in developing societies has demonstrated that peasants do respond to material incentives that are sufficiently large and are also clearly understood. Incentive systems for fertility control, despite their widely discussed imperfections, provide the promise of being practical instruments for constructing similar packages. What seems needed now is bolder experimentation to determine their effectiveness and administrative feasibility, and less speculation about their possible shortcomings."

Integrated Incentives for Fertility Control

Wider use of material incentives should make
family planning programs more effective.

Lenni W. Kangas

Most of the experience and much of the discussion about the role of material incentives in population and family planning programs have regarded the usefulness of such payments in an unnecessarily restrictive way. Financial incentives have been given, for example, to acceptors of contraceptive methods, to personnel who provide family planning services, or to agent-recruiters who bring clients to service centers. Occasionally, a mix of these rewards is offered (as in India, Pakistan, and the United Arab Republic), but these rewards apply exclusively to events leading to and ending with the initial provision of contraceptive methods. Group and community rewards are conspicuously absent from both present action programs and the majority of proposals to date. Also missing is a system of meshing these rewards with incentives to individuals who adopt and continue contraceptive practices.

Despite limited world experience in the use of incentive rewards to make family planning programs more effective, the innovation has engendered a

great deal of speculative discussion and even considerable controversy. Some regard an appropriate incentive system as a near-panacea for circumventing the difficulties and frustrations confronting organized efforts to bring down birthrates in developing countries. Moreover, many of the proposals that have surfaced recently strongly reflect the desire to discover the "one best way" or single kind of payment that will prove to be the determining factor in reducing human fertility.

Critics and skeptics, on the other hand, often view incentive-payment systems as Machiavellian mixtures of bribery and coercion, particularly if they are to be applied with sophisticated popularization techniques to an unsophisticated, tradition-oriented peasant population. Ethical questions have been raised as to whether it is proper to interfere so blatantly (or commercially) in the sacred arena of human reproduction, where, these critics maintain, voluntary and individual freedom of choice should remain paramount. Projected costs, vaguely or explicitly

justified with axioms suggesting that an averted birth is equal to one to two times the per capita income, impress real-life planners and policy makers as exorbitant regardless of the presumed logic of the economic analysis.

In this article, I examine some of the characteristics of current programs and proposals that embody incentive schemes and go on to suggest an enlarged, adaptable framework for a more comprehensive approach to employing material incentives in fertility control in less developed countries.

Incentives, as used in this discussion, will refer to the direct (or indirect) payment of money or material goods and services to members of the target population and to service personnel or larger groups in the community (or both) in return for a desired practice supportive of lowered fertility. The frame of reference is both economic and psychological, and the subsequent discussion deals with mechanisms whereby economic and psychological motivations are linked and reinforce one another.

Present Incentive Programs

Present incentive programs operate almost exclusively on the individual level with regard both to recipients and to providers, although some incentives for group performance are offered to providers. In India, a man presenting himself for a vasectomy receives a nominal monetary reimbursement to compensate for time lost from gainful labor, for personal inconvenience, and (unofficially) as an inducement to undergo the operation. In many countries,

The author is deputy director of the Office of Population, U.S. Agency for International Development, New Delhi, India.

a woman accepting a contraceptive method is financially rewarded and the midwife, nurse-recruiter, or social worker receives a payment for the referral.

Payments to service personnel [for example, to physicians inserting intra-uterine contraceptive devices (IUD's)] are common and are frequently prorated among other clinic staff, as in the United Arab Republic, Taiwan, and elsewhere. Agent-recruiters or "canvassers" employed in the vasectomy programs in parts of India and in East Pakistan receive payments on a per capita basis for successful referrals. These "finder's fees" are sometimes shared with "subcontractors," who represent an extension of the authorized canvasser's activity (1).

Other inducements that fall into a broadly defined category of incentives include free or reduced-price IUD insertions or contraceptive supplies (Taiwan), free transportation or baby-sitting services (U.S.A.), or state-provided or subsidized abortion and contraceptive services (U.S.S.R. and many Eastern bloc countries). Additional examples could be cited, but these are sufficient to illustrate that all of the incentives used thus far in the vast majority of programs are given to individuals—acceptors or providers, or a combination thereof. It is worth noting, furthermore, that the provision of rewards is largely, if not exclusively, limited to events leading to and usually ending with the initial provision of contraceptive methods to clients; few or no material rewards are offered today for nonbirth or for successfully continuing contraceptive practices.

Proposed Incentive Programs

Some characteristics of recently proposed incentive schemes are given below.

1) Annual rewards to married couples of reproductive age who avoid having offspring; the suggested range of payment is \$5 to \$10 per year [suggested by J. J. Spengler (1967); see 2, p. 7].

Economist-demographer Spengler has recently argued eloquently for a broader social security system of deferred payments to couples who limit their reproduction (3).

2) Rewards of up to one-half the per capita income "each year to each fertile woman who does not get pregnant" [suggested by Julian Simon (1968); see 2; p. 7].

3) Blocked savings accounts for women who remain nonpregnant for 3 to 4 years with verifying examinations conducted thrice yearly; the approximate cost would be \$25 to \$35 per year in rewards only [suggested by Stephen Enke (1960); see 2, p. 7].

4) A family planning "bond" offered to couples who accept a specified limit on their family size; the bond would be payable at retirement age or at the end of 20 years, whichever is sooner [suggested by R. G. Ridker (1968) (4, 5)].

5) A range of incentives for vasectomies depending on couples' parity [suggested by E. Pohlman (1967-68)]. Larger rewards would go to those who limit family size to two or three; smaller rewards for those with four or more. Community incentives would be offered if a substantial number of men in the village participated (6).

6) National savings certificates to married women in the reproductive ages who remain nonpregnant for 3, 4, 5, or more years, at the rate of about \$3 to \$4 per year [suggested by Marshall C. Balfour (1962); see 2, p. 8].

7) The Institute of Rural Health and Family Planning, Gandhigram, India, has developed a proposal (1969) for community incentives related to India's vasectomy program. Community rewards will be channeled through village leaders in an attempt to gain their active support for family planning activities (7).

The first proposal by Spengler and the suggestion by Simon appear to take inadequate account of the fact that, in countries where prolonged lactation is common, the period of post-partum amenorrhea, coupled with the normal risk of conception, means that an average fertile woman who has recently had a child might not become pregnant again for a period of up to 3 years or so even if the couple were not using contraceptives (8). In addition to the high cost associated with Enke's proposal, Berelson and others have pointed out the major administrative problems associated with monitoring nonpregnancy among participants three times a year.

With regard to the family planning bond proposed by Ridker, he himself has admitted that "simple mistrust of the government's promise to pay" might be a major obstacle (4, 5). Although the bond proposal may be attractive in terms of cost and possible administrative feasibility, this probable mistrust remains a central weakness. Spengler has also raised the question of whether

peasant classes are sufficiently future-oriented and trustful of government bureaucracy to go along with a system of long-deferred rewards administered by the state (3).

Pohlman's several proposals have evolved to one emphasizing incentives primarily for vasectomies. He has seriously considered additional rewards for group and community participation. As with the concept of community incentives advanced by the Gandhigram proposal, field testing would seem the next logical step. Since both proposals focus on vasectomies, the neglect of other methods is a possible shortcoming, which may, however, be adequately compensated for by fewer administrative complications as a result of dealing with only one method. Finally, Balfour's savings certificate scheme would require a relatively simple verification procedure certifying that there has been no birth (not nonpregnancy). He also ties it to a system of national or "postal" savings in which villagers already have trust.

Conventional Criticisms

Despite the imaginativeness of proposals such as these and the logic of trying to modify and distill from them schemes (the plural "schemes" is emphasized) that would be politically feasible, administratively workable, and not excessively costly, incentive proposals as a genre seem to encounter an undue amount of skepticism and outright opposition. F. W. Notestein has maintained, for example, that "There is also danger that incentives through bonuses will put the whole matter of family planning in a grossly commercial light. It is quite possible that to poor and harassed people financial inducements will amount to coercion and not to an enlargement of their freedom of choice." Notestein goes on to say, "Family planning must be, and must seem to be, an extension of life, not coercion toward its restriction" (9). Sentiments such as these, regardless of the conservatism they reflect, are still widely held today. (Curiously, critics of incentives for acceptors commonly express great concern about corrupting peasant populaces but seldom exhibit the same level of concern about corrupting professional providers, such as physicians, with extra fees.)

There is, of course, nothing unusual or undesirable about the critical debate surrounding the incentive issue. Most

proposals we have seen thus far have serious weaknesses in terms of their cost, administrative feasibility, and political or ethical acceptability. Similarly, it is likely that subsequent refinements or additional proposals (including the one that follows) will also include major shortcomings when carefully examined.

Two issues emerge in this process, however, which warrant our special attention. One is the tendency to dismiss almost offhandedly the entire concept of incentives before adequate trials have been made, simply because our limited experience with some schemes has revealed certain flaws or occasional abuses or because the proposals presented to date are less than completely perfect. As noted earlier, population policy makers and family planning officials have treated these several ideas one at a time with almost no attempt to synthesize, adapt, and modify them into more workable schemes. Secondly, we have dealt with incentives in a narrow and unnecessarily restricted fashion, looking for one basic method to serve as the single moving force required to bring about fertility reduction. In what could be described as a search for the "one best way," we have unintentionally limited the scope of our consideration of incentives to (i) those applicable to fertile couples or contraceptive acceptors; and (ii) reward systems consisting of only one kind of payment rather than systems representing a multidimensional and reinforcing mix of incentives designed for individuals, groups, and larger communities (10).

Integrating Family Planning with Community Development

Organized, government-supported efforts at reducing human fertility have generally adopted the approach of attempting to match the capabilities of an existing bureaucratic apparatus to the task of reducing the nation's birthrate. By concentrating almost exclusively on available resources, family planning programs have become locked into what could be termed an "input orientation." For example, government officials have reasoned, "We have a health ministry that consists of an infrastructure of clinics and hospitals, a hierarchy providing administrative control, plus doctors, nurses, health educators, and paramedical personnel; now, how can we utilize these avail-

able resources to promote and facilitate the practice of contraception?" The common result of this kind of policy decision leads to a program that emphasizes a clinical rather than a demographic approach—one in which the individual acceptor becomes the focal point of attention and broader population considerations "recede into the shadowy background" (11).

A different and somewhat opposite approach would begin by focusing on the goal of lowered fertility and then identifying the known or suspected components of population growth that must be changed, restructured, or manipulated to reach that goal. On a macro or nation-state scale, this approach is essentially what Davis proposes when he urges family planners to recognize that "the creation and care of new human beings is socially motivated, like other forms of behavior, by being a part of the system of rewards and punishments that is built into human relationships, and thus is bound up with the individual's economic and personal interests. . . ." He goes on to recommend that "the social structure and economy must be changed before a deliberate reduction in the birth rate can be achieved" (12). Although he specifically advocates changes in the role of women, family structure, and other behavior patterns affecting fertility, Davis leaves unsaid how these changes should be wrought, what their cost might be, and what administrative and management mechanisms must be employed to implement them.

The following conceptual model for a family planning program, designed for implementation at the community (13) level, relies on a mix of material and financial rewards to stimulate societal control and greater individual motivation toward reducing family size. Although it may represent only a modest step toward the kind of social and economic restructuring called for by Davis and others (14), it does, by using the vehicle of incentives, seek to set in motion some of the social and economic forces supportive of that end. Furthermore, it engages the assistance of other important "change agents" and socioeconomic influences in the community in fields such as agriculture, education, and social services to support family planning goals and activities.

By assuming that there exists a favorable national policy regarding birth control and that a family planning program is at least moderately operational,

we can identify several broad categories of inputs or social-economic influences that have an impact on fertility and that are currently or potentially operative in the community. The variables listed do not represent a definitive list and are not necessarily the most important variables affecting fertility; they were selected because they potentially lend themselves to administrative control or manipulation in a way that supports lowered fertility. These variables are listed below in three categories: community-wide social and economic inputs and services; financial and material incentives for contraceptive practice, and the inputs of traditional family planning programs.

Community-Wide Social and Economic Inputs and Services

The activities in this category tend to be provided or controlled largely by the state. Typical inputs and services can be found under some or all of the following headings.

Agriculture. Price subsidies, production controls, extension services, fertilizer and seed allocations, and credit facilities.

Economy (nonagricultural). State support of present or designation of future manufacturing or other industrial activity, employment and manpower training activities, and state-supported cooperatives of various kinds.

Education. Primary and secondary systems, new school construction, facilities, equipment, and teachers.

Medical and health services. Maternal and child health programs, special efforts to combat infant mortality, communicable disease control, sanitation activities directed at provision of potable water, and construction of drainage systems.

Nutrition and food distribution. Nutrition education, supplementary food distribution programs, and personnel engaged in nutrition activities.

Social service activities, facilities, and institutions. Community organizations such as state-supported cooperatives, credit institutions, organizations for such special groups as youth, farmers, women, and other occupational classifications; also welfare and charity services.

Anticipated future services. Social security measures, welfare assistance, unemployment insurance, and additional land reform and redistribution measures.

These incentives for the practice of contraception would include a mix of the following items directed to two principal categories of people, acceptors and providers, in accordance with the level of activity or results achieved. An operating program would not attempt to cope with all these possibilities or combinations but would select an appropriate mix from the several major groups and subgroups described.

Incentives to acceptors:

1) To individuals for (i) delaying age of marriage, (ii) accepting a contraceptive method or sterilization, (iii) continuing to practice contraception, and (iv) nonmaternity.

2) To couples in return for (i) accepting a contraceptive method, (ii) continuing to practice contraception, (iii) postponing first child, (iv) spacing between children, and (v) limiting family size (with rewards inverse to number of children).

3) To groups (for instance, large, extended families, clans, and organizations such as farmer clubs, cooperative society members, or otherwise identifiable and cohesive social units) for (i) the number of new contraceptors recruited from membership, (ii) the percentage of contraceptors in membership, (iii) other practices adopted such as postponement of age of marriage and limitation of family size, and (iv) lowered group birthrate.

4) To the entire community (with rewards channeled via elected or appointed officials and public institutions, or both, as appropriate) for clearly stated public purposes and benefit. Rewards would be based on the level of fertility control achieved, as measured by (i) increases in the number of contraceptors among eligible population (could be limited to vasectomies only or to a combination of methods adopted), (ii) the percentage of contraceptors (or sterilized) among reproductive age groups, (iii) increases in average age of marriage, (iv) participation in activities related to family planning (for instance, support of the vital registration system, participation in special surveys and studies or educational projects related to fertility control), and (v) reduction in community age-specific birthrates.

Incentives (fees) to providers (15):

1) To individual providers (including physicians, nurses, midwives, field workers, and agent recruiters). (i) For

services rendered (for instance, patients recruited, IUD's inserted, or vasectomies performed). (ii) According to the number of acceptors who continue to practice contraception successfully, monitored by a follow-up system. (More emphasis to ensure greater continuation seems especially important. Too often, family planning programs concentrate on events leading to and ending with initial acceptance and give insufficient attention to what happens to the acceptor after leaving the clinic. Although follow-up work is often criticized as being too costly and administratively cumbersome, such criticism overlooks the importance of providing psychological and, possibly, medical support to the many who are not totally convinced of the wisdom or safety of practicing a new method of birth control.) (iii) For support provided to the family planning program by "secondary" personnel resources, such as referrals made by the agricultural extension agent, the local school teacher, a religious leader, or nutrition worker. Although the precise contributions of such people would be difficult to measure, experimenting with modest retainer fees might produce reasonable results.

2) To groups of providers (such as all clinic and field personnel or distributors of conventional methods). (i) For the percentage of various targets achieved—that is, IUD's inserted, vasectomies performed, or birthrates reduced. (ii) For the extent of supporting activities carried out (for instance, group educational meetings, training sessions held, and so forth).

Traditional Family

Planning Program Inputs

Incentives could be paid for specific improvements in the quality and efficiency of the following services and activities:

1) Delivery of clinical contraceptive services.

2) Supply and distribution of conventional or nonclinical contraceptives.

3) Informational, educational, and motivational programs.

4) Related support activities such as vital statistics and registration, special surveys, program management, and evaluation.

Impartial boards could judge improvements in these activities if baseline data were collected at the beginning of the program.

The Value of Integration

Although my arbitrary breakdown of activities and influences related to fertility could be further enumerated or defined, it is clear that a number of variables exist within a typical community that potentially lend themselves to control or manipulation in a way supportive of lowered fertility. It is recognized, of course, that it would be administratively difficult, if not impossible, to control too large a mix of variables at one time according to several, and often difficult-to-measure, indicators of achievement. Nevertheless, measurement techniques can be refined, and we should no longer be content with stagnation and inefficiency at the working level on this particular front of population program administration.

It would seem worthwhile, therefore, to attempt a systematic linkage of such economic and social influences with various mixes of incentives to determine whether an integrated approach to implementing more effective fertility control measures at the community level is within practical reach. A schematic presentation of such a linkage system is given in Fig. 1 and serves as a frame of reference for the remainder of this discussion.

The basic hypothesis is straightforward: A greater reduction in births at the community level could be achieved by integrating the family planning program with other ongoing economic and social development activities than without such integration. The purpose of integration would be, first, to increase the awareness among villagers and their leaders that their immediate and long-term well-being depends largely on the level of initial acceptance and subsequent successful practice of contraception. Second, once people became sufficiently aware of the value of practicing birth control, it should be possible through the mechanism of the incentive program to enlist their support for more effective family planning efforts and thereby to generate a greater community commitment toward lowered fertility. Such support and commitment are conspicuously lacking in most programs today, and, unless ways are devised that provide concrete payoffs to potential supporters, it seems likely that they will remain apathetic bystanders outside the mainstream of the fertility control effort.

Two illustrations of change-agent or leader participation can serve to elaborate this point. The agricultural agent,

for example, could be expected to make a personal commitment of some part of his energy and time to aspects of family planning education and recruitment once he realizes that the delivery of a new piece of farm equipment for the local agricultural cooperative depends on population program success. His participation could be stimulated further if the future allocation of more fertilizers and new seed varieties depended partly or largely on the level of contraception achieved in his area. Similarly, the local school teacher, who is likely to be a respected person in the village, would be motivated to extol the importance of the small family norm to pupils and their parents if she were paid a modest "consultant fee" and if she further realized that the construction of better facilities or the purchase of new equipment also depended partly or wholly on gains in family planning practices.

This kind of practical—as opposed to purely exhortatory—involvement of citizens and leaders would contribute

significantly to the development of a genuine commitment to fertility control on the part of other development agencies, their officials, public leaders, and the people themselves. The family planning movement needs all the intelligent allies it can attract and should actively seek to enlist other development workers and change agents in the effort.

Use of the Incentive Mechanism

As shown in Fig. 1, the incentive mechanism would relate to selected components in the broad range of social and economic inputs presently flowing into the community. By affecting the level of additional future inputs (the current level of these services would not be reduced) in areas such as agriculture, health services, education, and economic development, it harnesses these essential activities into powerful supporting forces for population program objectives. And what is particu-

larly important in terms of political and financial feasibility, it does this with no additional cost to the government treasury since, over time, these developmental programs would be expected to increase gradually in magnitude.

The other direction in which the incentive scheme would be expected to stimulate behavioral changes would be in the area of providing rewards to individual acceptors, program personnel, and to the community as a whole, depending again on the level of contraceptive practice achieved. This aspect of the program would, of course, require additional funds. Payments to individual acceptors and providers require little further elaboration, but it might be useful to illustrate how community rewards might be determined and implemented.

First of all, it would seem highly desirable that members of the community, with as many from the citizen level as possible, have a major voice in determining both the goals and the rewards for achieving them. Working in collaboration with elected and appointed officials, they could participate in setting goals for vasectomies or IUD insertions or in deciding upon an increase in the average age of marriage. At the end of a successful year, they could elect to receive badly needed water pumps or tube wells or a new tractor for the agricultural cooperative. The following year they may choose a power generator for the school or an increase in their fertilizer allotment. If the program reached its targets ahead of schedule, rewards could be paid sooner, thereby accelerating the entire effort. The psychological impact on the community of this kind of reward system should be apparent. Once the new water pumps had been installed or the agricultural equipment placed in the field, they would serve as daily reminders of the "payoffs" that come from practicing contraception. Thus, visible and tangible benefits would be provided in a program that otherwise seems committed to operating in an unseen or, at best, shadowy and often unappreciated manner.

This aspect of the program would also require additional funding, but the amount could remain relatively modest. Installation of tube wells and the purchase of tractors for a community of 10,000 could probably be accomplished with a budget of, say, \$3000 to \$5000 per year. Larger rewards might stimu-

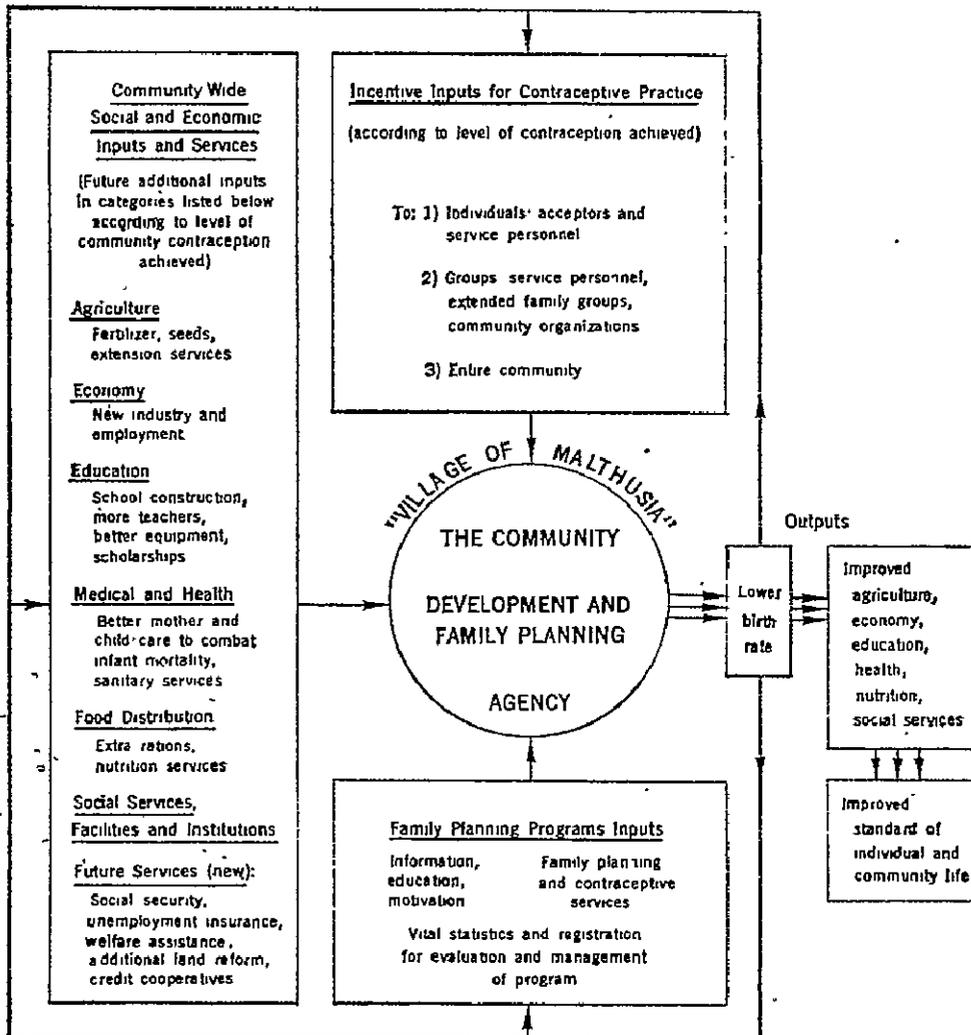


Fig. 1. Schematic linkage of economic and social influences mixed with various incentives for an integrated approach to fertility control.

late higher performance, and it would be important to experiment with various amounts. The extra cost would have to be measured against increased commitment, participation, and performance—perhaps a difficult but certainly not an impossible task.

Administrative Control and Feasibility

Within our hypothetical village of "Malthusia" is an administrative controlling mechanism or "processor" called the "Community Development and Family Planning Agency" (Fig. 1). What is intended here is that a coordinating agency be established, again at the community level, specifically to regulate and administer the incentive program and facets of other developmental activities that are selected to relate to the population program.

Although considerable bureaucratic restructuring of existing functions might ultimately be desirable along these lines, there is no reason why such reorganization could not be slowly phased over a period of time. For instance, it could begin quite modestly as an informal council consisting of representatives from concerned operating agencies, village officials, and participating citizens. Gradually, such a council could be expected to acquire greater legitimization and authority as it demonstrated its usefulness. Further organizational moves could be implemented on an incremental basis associated, for example, with normal personnel attrition or according to a reasonable timetable that would not seriously threaten incumbent officeholders and that would be acceptable to respective parent agencies. Key development agents could, of course, become staff members of the new agency as it expanded its influence over a wider area of community life. In the beginning, they could serve as staff associates or consultants.

The range of administrative problems anticipated in a proposal like this one could be expected to vary according to the ambitiousness of its undertakings. For instance, the accounting effort required to manage a multifaceted incentive program undoubtedly would face formidable obstacles, but these difficulties may have been overestimated. Would they, for example, prove any more complicated than those already being handled, albeit imperfectly, by agricultural agencies, which simultaneously deal with credit, fertilizers,

seeds, storage, and subsidies? Similarly, sheer administrative inefficiency, inter-agency rivalry, and problems of possible corruption would undoubtedly impose constraints on the scheme's effectiveness. Nevertheless, a minimum amount of integration presumably could be achieved without encountering an unmanageable number of difficulties. It is not possible to be more specific without knowing the setting in which this scheme might be tried.

Summary and Conclusions

Incentive proposals for fertility control have stimulated considerable debate and only narrowly conceived trials. As a result, there exists a tendency to dismiss almost offhandedly the entire concept of using material incentives to further contraceptive practice before any have been adequately tried. Moreover, a majority of proposals thus far have been characterized by a search to uncover the "one best way" to circumvent the myriad frustrations encountered in attempting to reduce birthrates in traditional societies.

The principal weaknesses of social security, bond, or other deferred payment schemes derive from the presumed lack of future orientation of peasant classes, coupled with widespread mistrust of a government's ability or willingness to pay at a distant future date. Another disadvantage of locking into a payment system that extends for 10, 20, or more years is that such a decision may take inadequate account of the possible impact of new technology or changes in cultural norms and social practices upon desired family size. The likelihood of radical innovations in contraceptive technology or of social-legal changes permitting greatly liberalized access to safe abortions should make us wary about becoming heavily committed to cumbersome and expensive systems of incentives which, over a short period of time, might outlive much of their usefulness.

The principal advantages of the concept of integrated incentives based on periodic or yearly payments are that long-term commitments are avoided, results could be more quickly measurable, and the scheme lends itself to localized trial and administration. By linking family planning efforts to other development activities—a linkage that could be effected with little extra cost to the government treasury—critically

needed support and a greater sense of commitment on the part of leaders and citizens alike could be mobilized.

Just as development programs in areas such as agriculture have gradually come to understand and employ a "package," or systems, approach, so it seems that population programs should broaden their action horizons. Recent experience with managed attempts to increase agricultural production in developing societies has demonstrated that peasants do respond to material incentives that are sufficiently large and are also clearly understood. Incentive systems for fertility control, despite their widely discussed imperfections, provide the promise of being practical instruments for constructing similar packages. What seems needed now is bolder experimentation to determine their effectiveness and administrative feasibility and less speculation about their possible shortcomings.

References and Notes

1. R. Repetto [thesis, Harvard University, Cambridge (1967)] discusses the role of canvassers in Madras State.
2. As described by B. Berelson, in *Studies in Family Planning*, No. 38 (1969).
3. J. J. Spengler, *Science* 166, 1234 (1969).
4. R. G. Ridker, "A Proposal for a Family Planning Bond" (U.S. Agency for International Development, New Delhi, July 1969).
5. ———, in *Studies in Family Planning*, No. 43 (1969).
6. E. Pohlman, a psychologist, has written several manuscripts dealing with incentives in family planning. His "Cash Prizes for Pregnancy Postponement and Spacing" (1967) includes a critical review of group and individual rewards. Dr. Pohlman is the author of *Incentives and Compensations in Population Control* (Carolina Population Center, Chapel Hill, N.C., in press).
7. "Community Incentives for Population Control in India: Design and Evaluation of a Project" [by K. Pisharoti of the Institute of Rural Health and Family Planning, Gandhigram, in collaboration with the Carolina Population Center, Chapel Hill (1969)].
8. C. Chandrasekaran, lecture [School of Public Health, University of North Carolina, Chapel Hill (28 March 1969)].
9. B. Berelson, Ed., in *Family Planning and Population Programs* (Univ. of Chicago Press, Chicago, 1966), pp. 828-829.
10. Exceptions include some suggestions by Pohlman and the Gandhigram proposal (see 6 and 7).
11. L. Saunders, "Memorandum" (Ford Foundation, New York, 1968).
12. K. Davis, *Science* 158, 730 (1967).
13. "Community," as used here, applies to a traditional, largely agricultural society—for example, a village of 5,000 to 10,000 people. With some adaptation, the scheme might be applicable to urban "communities" as well.
14. See, for example, "Approaches to the Human Fertility Problem" [a report prepared for the U.N. Advisory Committee on the Application of Science and Technology to Development by the Carolina Population Center, Chapel Hill, N.C. (October 1968)], p. 67.
15. The reader may wish to classify payments to physicians and paramedical personnel as "fees" for services while regarding "incentives" as being more appropriately applicable to clients and acceptors. Rewards given to groups of providers—for instance, all clinic or program personnel—would seem properly to remain, however, within the category of incentive payments.

"What May Be Offered as Incentives?"
Edward Pohlman, Incentives and
Compensations in Birth Planning,
Carolina Population Center monograph No. 11, 1971

The author points out the advantages and drawbacks from offering the following incentives:

1. Cash and material goods;
2. Bonds and savings accounts;
3. Social benefits, such as education, health care, old age security, employment;
4. Other positive incentives such as food, wedding costs, lucky chances, competition and games, government favors;
5. Negative incentives.

He presents several methods of calculating the proper magnitude of incentives:

1. The amount required to produce the proper behavior;
 2. Worth of preventing births to national economy;
 3. Worth of child to parents for old age security;
 4. Amount the program can afford;
 5. Worth to humanity collectively of avoiding population growth.
- He points out that "each equal increment in incentive amounts would not necessarily make an equal unitary change in birth rates; psychological perceptions may not follow arithmetic."

Pohlman discusses also: the advantages of "starting big" versus "starting small" with regard to size of payments, the pros and cons of tying incentives to family size, and the possible complications and effect of community incentives.

(Editor's note - This chapter comes from the most extensive book on incentives yet published. Readers are encouraged to regard Pohlman's monograph as a companion piece to this compendium. It is available at \$1.50 from Publications Office, Carolina Population Center, 214 W. Cameron Avenue, Chapel Hill, N. C. 27514.)

WHAT MAY BE OFFERED AS INCENTIVES?

Criteria for evaluating various possible incentives include cost; whether they indeed induce the desired behavior; and whether they further other social goals (radios or educational benefits may foster social change; agricultural supplies, improved farm practices; and medical care, health). For public relations and general acceptance, incentives should have a "virtuous image." Enke (1961b) concluded that men would feel less guilty if they got something other than cash. Economic advantages lie with incentives that would tend to be saved or invested. Mueller (1967) felt that these desirable ends would be maximized by larger incentives and by bonds, savings deposits, or down payments on houses or productive assets. She also argued that deferred payments would be less inflationary and would be appropriate because economic benefits of avoided births accrue gradually. Since the raising of existing children is spread over many years, child-rearing bonuses deferred until age 10 or school entry would be appropriate. Old-age pensions are deferred longest of all.

CASH AND MATERIAL GOODS

Deferred payments require an organizational machine to stay "in business" for years. Some small-scale pilot studies and field trials must therefore resort to cash or merchandise. Mueller (1967) refers to "some experimentation" done by India's family planning administration, suggesting that with small incentives immediate payment seems imperative.

Cash has the image of being dirty and mercenary. The image of

selling one's potential unborn children or one's manhood for "filthy lucre" upsets many. Some fear that cash will be spent on gambling, liquor, and prostitutes. Cash does, however, have a firm, clear, tangible, and immediate impact on the "seller." Where much business is done by barter, scarce cash may have special value. Cash is administratively easier than many other incentives. Even giving cash but labeling it as being for some noble purpose—without checking on whether it is spent in this way—has public relations value above cold cash.

Obvious incentive possibilities are housing or clothing, and agricultural supplies (implements, improved seeds, fertilizers). The *Hindustan Times* (March 10, 1967) reported a new "technique of building prefab houses at the cost of Rs. 560 for a one-room, Rs. 1,250 for a two-room and Rs. 1,750 for a three-room house." In some trials in India, each woman was given a sari when she accepted an IUD. A wide variety of material goods might be considered; the individual might be given a choice, perhaps from a mobile van displaying the options. Unscrupulous businessmen might pay cash for any material incentive, giving less than full value.

Television and radio sets might help change attitudes, including attitudes toward family planning, and promote social change. Small fixed-channel transistorized television sets might be given to a village as a group incentive and watched communally, or even given individually. However, one must consider what to do when batteries run out, in the case of battery-operated equipment.

BONDS AND SAVINGS ACCOUNTS

Bonds seem less mercenary than cash and may permit a program to get going for a few years before the struggling developing country has to worry about paying the bill. There are many varieties: encashable only after many years; exchangeable only for specified things; interest-bearing, etc. Ridker (1968) suggested bonds with dated "coupons" that could be clipped periodically for small cash amounts, though the major payoff was deferred. Coupons would remind holders that "birth planning pays" and would facilitate follow-up. Thumbprints on bonds could help in identification. Policies would be needed about death, divorce, and loss or theft of bonds.

At each successive non-pregnancy inspection, Enke (1960a) would give a credit in a savings account blocked "until the value of a prevented birth" was accumulated. Ridker's tea plantation scheme would have accounts blocked until medical verification of menopause. Whereas Balfour (1962) figured on 4% interest,

Ridker got a Madras bank to promise 10% compound interest on deposits.

To many villagers, bonds are of less interest than cash (our Chap. 9). They may doubt that payment will be made, because of naive suspicion of fancy schemes, or sophisticated mistrust of the government and its political viability. Fears of inflation could be countered with a cost of living allowance. Bonds might commit a program inflexibly for many years ahead, to a time of radically different circumstances (Kangas, 1970).

SOCIAL BENEFITS

Education

Education for existing children would have a "good image" and might tend to advance national development. The program might try to provide educational programs directly, or pay existing schools directly, or pay parents and then check whether the money was spent in educational programs, or make payments designated for this purpose but without checking.

Health care

Dr. J. Pueschel wrote the author in 1969 about his Ambur, South India program: if women who deliver at the hospital agree to tubectomy, they are given a year of free treatment for themselves and their babies. "Contrary to our expectations, the offer has found a surprising response." Pueschel plans to extend free care of the child if the mother motivates another patient to tubectomy. A woman desiring abortion can get it at reduced rates if she agrees to simultaneous tubectomy. General feeding and care of children might be attractive.

Old age security

In India a major reason for wanting larger families is for financial security in old age; incentives might replace sons. Large bonds or blocked accounts payable after 20 or 30 years, or at menopause, might fill the need. Spengler (1969) recommends that those who keep families small be given social security benefits without having to make the usual periodic payments. Some have suggested that old age security programs in developing nations would reduce births. But here the tie-in between payments and births avoided is vague and haphazard and might take decades to take effect; in an incentive program, those specific individuals who limited families would get the old age benefits, motivating action.

Employment

Employment in a village industry might be an attractive incentive, since chances to earn cash are often limited. Possibly subsidy of a "cottage industry" would permit the dignity of *earning* incentives. Employment or educational opportunities would provide an alternative to the mother role and generally promote social change, and schools or work places could be a place where advantages of small families were extolled and knowledge about contraception informally shared.

OTHER POSITIVE INCENTIVES

Food

Food is of special interest because the U.S. and other countries are shipping wheat into India. If the food is being channeled to the people anyway, it might be used as an incentive. Family planning would be tied into a total health package. But giving food for small families seems inhumane—families with most mouths to fill would get less food. Food might instead be used as incentive for attendance at a family planning center, for listening to promotional material or participating in a discussion, or perhaps for accepting contraceptive pills at the same time the food was accepted. In Accra powdered milk was used as the "non monetary commodity incentive" because it had known monetary value and could dramatize that birth control helps mothers and babies (Perkin, 1970).

Wedding costs

A daughter's wedding represents a huge expense for Indian families. Dinesh Dubey of the CFPI suggests that young couples be told this expense would be paid, provided parents (1) limit children to a specified number and (2) have the wedding only after the daughter reaches a prescribed age. Registration at birth would be required as proof of age; this would encourage more accurate birth registration. Daughters often marry when parents are in their forties while retirement comes perhaps in the sixties, so incentives paid at wedding time might be more appealing because not so far off.

Lucky chances

An individual might be given a chance to spin a wheel or draw a sealed envelope with the possibility of getting a huge amount. This might be used instead of a fixed cash payment, or as an additional

feature. In gambling one spends out some money and may lose it; in this system the individual would not be spending (gambling) anything. State lotteries are common in India. Personnel might find ways to alter probabilities so that most recipients got nothing and workers pocketed the difference.

Competition and games

Competition between villages or other units might be fostered. In schemes where the woman is paid an escalating sum the longer she continues non-pregnant, the simple mathematics of "keeping score" could provide a basis for village gossip and status, and for interest and novelty.

Government favors

There are many privileges, priorities, and favors controlled by local, state, or national governments; for example, in India, priority in waiting lists in court decisions; settlement of land disputes; admission to select military or other schools; treatment in hospitals; consideration of requests to the Block Development Officer or Deputy Commissioner; government housing; and whether taxes must be paid on time. At the community level, Kangas (1970) lists many government benefits that could be used to put pressure on entire communities. Lady Rama Rao suggested in a 1968 meeting at Chandigarh that Indian politicians should not be allowed to compete for office unless they had been sterilized.

After August 15, 1968, some Maharashtrians who did not limit families to three children lost free medical treatment and maternity leave with full pay, allotment in certain living quarters, and fellowships and free books for children. Other states later followed the general lines of Maharashtra (GOI, 1968a).

"NEGATIVE INCENTIVES"

If some benefit is customary and is then withdrawn, this may evoke a different reaction from giving something new and extra. Whether one heavily taxes big families or rewards small families has many similar results in terms of long-range economics, but the latter sounds better. It is not necessary, logically, to choose only one or the other.

One limitation of tax schemes is that many poor people in developing countries pay no taxes anyway, and the poor have the largest families. It may appear conspicuously cruel to put special taxes on those with the most mouths to feed. In developed coun-

tries taxes on extra children might be the only way to make the relatively rich respond. U.S. Senator Packwood (1970) introduced a bill which would remove the tax "deduction" for all children except the first two.

HOW LARGE SHOULD INCENTIVES BE?

There are several ways of calculating the proper magnitude for incentives: (1) amount required to produce desired behavior, (2) worth of prevented births to national economy, (3) worth of child to parents for old age security, (4) amount the program can afford, and (5) worth to humanity collectively of avoiding population growth. The answer to (2) is a fairly large sum (our Chap. 10) but even this need not be the limit of incentive payments, because (1) incentives are primarily "transfer" payments, and (2) need for space and other resources for survival might cause their economic value to skyrocket in the long run. Perhaps budgeted costs of incentive programs should not be limited primarily to incentives; added personnel and complex administrative machinery may be necessary.

Research should check the hypothesis that as size of incentives increases, people become motivated proportionately more by incentives and proportionately less by intrinsic desire to avoid pregnancy; and that this produces more fraud and corruption, and (in the case of sterilization) more regrets. Each equal unitary increment in incentive amounts would not necessarily make an equal unitary change in birth rates; psychological perceptions may not follow arithmetic.

Giving out too much money may make for suspicion. If one offers a new car valued at \$3,000 to a man for \$1,000 he may suspect that something is wrong. Too-large incentives for vasectomy may increase suspicion of vasectomy. This was mentioned by some villagers in the Rampur experiment (our Chap. 9).

"START BIG" OR "START SMALL?"

In trials, would it be better to start with bigger incentives and then if necessary shift to smaller ones, or vice versa? Enke (1960b) argued that increases might embitter those previously cooperating for smaller amounts; decreases might be interpreted as a future trend and prod the hesitant. Reluctance over vasectomy would be high to start with and might decrease over time; this too would argue for starting large. Pohlman (1967c) reasoned that an experiment that started small would leave one uncertain as to possible

effects of larger sums and that to rerun the trial would take years and additional expense. Hence he urged starting large. Later (Pohlman, 1967d) he advocated two experimental groups with large and small payments.

Gillespie (1968) argued cogently that since a new program can count on a backlog of people eager to stop families, one should first emphasize incentives to finders rather than those to acceptors. The same reasoning would support "starting small." Starting with seemingly enormous amounts might shock the public on a topic where public relations are sensitive. If Village A is offered Rs. 1000 per vasectomy and this news spreads to Village B, the latter may be dissatisfied if later offered only Rs. 500.

TIE INCENTIVES TO FAMILY SIZE?

To give uniform incentive payments is administratively simpler than to give larger amounts to men who have vasectomies when younger or with fewer children. The Godrej firm (1968) and some other Bombay-area companies follow the latter procedure. But Rustomji (1968), writing that his branch of the Tata firm at Jamshedpur gave Rs. 200 per sterilization, opined that checking on family size would be too complicated, even in an industrial organization. Extra work and extra chances for fraud and corruption are involved.

Ridker (1968) planned larger incentives for those vasectomized after only two instead of three children. Pisharoti (1968) had a similar plan. Mueller (1967) indicated that the incentive scheme "would have to be structured" so the program would reach into the younger age groups. She also implies that the sex of children should be considered. To stop families after two girls and a boy is more of a sacrifice in India than to stop after two boys and a girl. Incentives for IUD's should be higher for younger women, suggests Simon (1967). Low or zero incentives are recommended for high parity women (Simon, 1968a) because they have higher probability of accepting contraception without incentives and, physiologically, are less likely to conceive. Ridker (1968) planned to give those with one child or no child the same large vasectomy incentive as those with two; this might arouse opposition.

COMMUNITY INCENTIVES

An incentive scheme may aim to get the community to work together toward a well, a school, or other desired building, a staff of teachers, a cottage industry, or one or more tractors for joint

use. An official publication announced that in Hotipur, all 33 eligible couples accepted family planning, 26 via vasectomy and 7 via loop; as a reward, the Deputy Commissioner granted Rs. 2,000 for a road and another Rs. 2,000 for the village school.

Shortly after, Kulkarni (1969) announced that all eligible men with three or more children in Kuwar Khede had had vasectomies in order to earn an announced Rs. 3,000 for any village meeting this criterion. This was used for a much-needed drinking water well. Previously, women had had to bring water half a mile. The newsletter announced that, in part, "pressure from wives spurred the husbands on to the vasectomy camp." The village had 90 families, 493 citizens, and 40 men who had the operation. This was an extremely poor village; probably any given amount would mean more to a poor and to a small village.

An experiment with community incentives is reported in our Chapter 9. Pisharoti (1968) has designed research with group incentives, planning to try this experiment near Gandhigram. Cash would be given to the village leaders to spend for community projects as they saw fit, if specified numbers were sterilized.

Not all villagers would share equally from a community incentive. The village shopkeeper may find a tractor or irrigation well of little attraction. A well may be located near some families and far from others, with water disputes resulting. A well used by some caste groups may be unusable to others. Possibly instead of the whole village as the community for community incentives, caste groups might be used in India. But this may aggravate fears of one group that they will lose their proportionate strength if they limit families.

Meeting group quotas for sterilization or other behavior may be rewarded with either community incentives or individual incentives. Either way, the group quota approach has theoretical advantages. It may build group support. For example, a plan may specify that unless a specified percent join together in vasectomy (or other specified behavior), no incentives will be paid. If many are doing the same thing, they support each other. Thus an individual would be less likely to feel guilty, or be jeered at, concerning actions in which many join.

Receiving incentives may produce guilt. Even for Rs. 30, some feel they have "sold" some sacred right or shirked sacred obligations to have large families, for thirty pieces of silver. If vasectomy produces occasional emotional disturbance it is not because of physiological effects, but because of psychological reaction, which in turn is heavily influenced by group reactions. For these reasons

it is less desirable to pick off two or three men from one village and a few more from another and give them vasectomies and incentives.

Some villages would reject the scheme as a whole, but then no individual would be left isolated to the mercy of his peers. A scheme need not be acceptable everywhere to be effective, as Simon (1968a) emphasizes. With group plans as with individual plans, the most motivated may respond immediately, creating an initial impression of success. But with villages as the unit of decision, research could more easily establish the proportions who were responding.

Group quota systems might bring group pressure to bear rather strongly on individuals (Pohlman, 1966a). An individual who had decided on vasectomy, realizing he could profit if many others joined in, might work toward this end. Work toward such a goal may increase confidence in what one is doing. With group quotas, a few powerful individuals or the majority might force individuals to actions they would later regret. The line between desirable and undesirable pressure is hard to draw. Pressure might be reduced by having an "outsider" take the "vote" secretly.

If the norm in a hypothetical village were five-child families and group quota incentives induced a majority of men to vasectomy after three, possibly a norm favoring smaller families and even a norm favoring vasectomy might be established as a precedent to influence younger men. Also, with group quota vasectomy schemes, young men with few children or none might be told that the team planned to return in a few years with larger incentives for those with small families than for those with larger families. To avoid having too large a family and thus losing out, youth could be advised, conventional methods should be used until the vasectomy team returned.

A solemn public ceremony might be arranged to recognize and honor those who helped the group meet its quota. Vasectomy might even become the occasion for a rite of passage, from child-producer to other roles. Ceremony and ritual and mystique and even religious leadership as appropriate could be utilized.

The immediate or extended family might be the "group" which group incentives reach. Any combination of incentives to individuals, couples, key relatives, the caste group, and the larger community is theoretically possible.

PART III INCENTIVE PROGRAMS TO DATE (APRIL 1972)

As explained by Sprehe and Rogers, incentives can be offered for contraceptive acceptance or for birth prevention. The first category has been fairly widely explored, the second is just now being investigated, and only in two cases are quasi-experiments on incentives for birth prevention underway. Incentives for contraceptive acceptance have served as a basis upon which incentives for birth prevention have been based. The former are typically smaller, and reward a single step. They are thus easier to administer and to budget for, but their effectiveness is more open to question since there is no guarantee that extensive and long-lasting behavior change will result. Also, incentives for acceptance do not generally involve any fundamental changes in the environment in which the family finds itself. They are thus unable to offset the financial and societal pressures which push couples to have many children.

Because of the extreme differences between these two categories of rewards, some social scientists and program administrators would prefer to call incentives for birth prevention "compensation". This highlights their key feature - they should be sufficiently large to offset the perceived or actual value to a family of having additional children. Accordingly we will look at incentives in two steps. First will be those which could be classified as

A. INCENTIVES FOR CONTRACEPTIVE ACCEPTANCE

In the following articles we will see that there is a varied and extensive basis for testing and using incentives in order to enhance acceptance of contraception. These rewards, whether paid to the acceptor or the provider, whether paid in cash or in commodities, whether provided immediately or after some delay, share one thing in common - they act as an incentive to acceptance only. These payments can be seen as facilitating instruments which help advance recipients through the decision making process more quickly (when paid to adoptors), or which help provide impetus to aggressive service or motivational work (when paid to field staff). Generally speaking, however, these payments are not sufficiently large to advance family decision making to the point where a couple would actually have less children than they had previously desired, just to receive the incentive. This is logical in that the incentives described in this section are not sufficiently large to offset the perceived value of an additional child.

"Population and Family Planning Programs: A Factbook"
Dorothy Nortman, reprinted from Reports on Pop-
ulation/Family Planning, June 1971, Table 8.

In most countries with strong family planning efforts, payments are made to medical and paramedical personnel for recruitment and servicing clients on a "fee for referral" or "fee for services" basis. If salaries are paid they are not generally part of the family planning budget (for doctors, nurses, midwives), or else they are small (for field workers and motivators). The table which follows illustrates the extent of incentive programs for 12 countries as of early 1971.

"Some Views on Incentive Payments" Working Paper No. 4
IPPF pp 20-24, 1969

This paper synthesizes the views of national family planning program administrators in six countries (India, Korea, Pakistan, Taiwan, Ceylon, and Egypt) on the contributions and disadvantages of the incentive programs then in use or contemplated for their countries.

Summary of Advantages

Medical, paramedical and field personnel are encouraged to work diligently especially in rural areas where conditions are difficult. Doctors are compensated for any loss of other practice, and are drawn more fully into the programme.

Clients who cannot afford expensive family planning services, or who would incur travel expenses and loss of earnings, are afforded the opportunity to accept contraception.

Patients can rest after vasectomy without loss of earnings.

Even the mild incentive element provided by a congenial clinic atmosphere and pain-relieving drugs are an inducement to patients.

"Satisfied users" who would not otherwise think of bringing their friends to the clinic are motivated to do so.

A graded bonus system which rewards the better workers provides a suitable method of augmenting a low basic salary structure.

Midwives are compensated for loss of practice arising from a reduction in births. Referral or finder's fees are a means of recruiting patients in rural areas which have no family planning workers.

Summary of Disadvantages

In their anxiety to increase acceptances, some workers fail to give patients adequate preparation and reassurance. The side effects of the loop are not explained properly.

Patients have had IUDs removed and reinserted in order to obtain a further incentive payment.

Annotation 9a

Incentives are ineffective in reaching resistant women, and too small to provide a counter-attraction to high maternity benefits.

A contraceptive method which carries an incentive payment may be chosen by the patient or recommended by medical staff instead of another that would be more suitable for medical reasons.

Some views on incentive payments

The information in this chapter was provided by administrators in a national programme (India, Korea, Pakistan, Taiwan) or officials who were immediately concerned with the possibility of using incentives (Ceylon, Egypt). The fact that the former could reasonably be expected to take a favourable view of the system which they themselves were administering enhances the contribution they made by discussing possible disadvantages and flaws in the system.

The replies were given in response to a letter containing questions on these points:

Amounts and nature of payments

Advantages and disadvantages of incentives

Whether incentive payments were regarded as a decisive factor in the programme

Suggested alterations to methods of payment

Estimates of reasonable monthly totals of IUD insertions and vasectomies for a doctor working full-time in the programme.

They are reported in detail here, with a summary of the advantages and disadvantages and a table of payments.

Advantages of incentive payments

The most favourable attitude towards incentive payments was taken by Pakistan. There, the family planning programme was deemed "impossible without incentive payments" since existing health facilities and personnel had to be induced to provide contraceptive services. Incentives were regarded as decisive in making medical, para-medical and field personnel work hard to motivate women, accepting the physical hardship and inconvenience of rural areas. They were a way of compensating doctors for loss of practice in their headquarters. The failure of family planning in the second plan (1960-65) had been attributed to the fact that doctors "did not or could not find time to motivate patients or do family planning work"; no incentives had been provided for this additional duty. The present insertion fees covered pre- and post-insertion advice.

Referral fees were regarded as an incentive to family planning organizers to augment their fixed salary, and to satisfied users or others who without payment would not bother to "convince" their friends. The payments to vasectomy patients compensated them for not working during the period of recovery.

In Korea incentive payments were decisive because the majority of clients could not pay for expensive family planning services. The fees to doctors also had the advantage of increasing their participation in the education of clients and, indirectly the public, while their employment on this basis assured "service and responsibility". Incentives for family planning workers were thought to keep up their morale and

1632
encourage them to get more acceptors, while the "discretionary nature" of the money gave them leeway in carrying out their work.

Finally, the patients' payments enabled them to have the necessary rest after the operation.

The chief advantage for India was the fact that those who could not afford travelling expenses and self-employed patients who lost their livelihood for a day (IUD) or 4 or 5 days (vasectomy) received some compensation. Not all well-to-do people claimed the payment. It was considered that motivation was more important than compensation.

The advantages in Taiwan were based on a slightly different programme structure. Payments to midwives who thought they would lose by a decrease in births had the effect of involving them in the programme, and the "finder's fee" was a means of recruiting acceptors in areas where there were no family planning workers. Workers were motivated to achieve their targets and the better ones were rewarded accordingly, on the graded bonus system. The incentive payments were not regarded as decisive but were helpful to the programme.

Ceylon's only comment on the advantage of incentive payments was that they would produce quick results. Without actual experience of incentives it was thought that the "satisfied client" was the most important factor.

Egypt favoured a mild incentive element—the pleasant and friendly atmosphere of a clinic, pain-relieving pills, prizes awarded to patients who brought the largest number of cases to the clinic—not enough in themselves to motivate the patient:

"Perhaps a little gift may not have such a corruptive influence as to tempt people to undergo (vasectomy), which in most cases is said to be irreversible, just for the sake of the radio".

Summary of advantages

Medical, para-medical and field personnel are encouraged to work hard especially in rural areas where conditions are difficult. Doctors are compensated for loss of practice and are drawn more fully into the programme.

Clients who cannot afford expensive family planning services, or who would incur travel expenses and loss of earnings, are enabled to accept contraception.

Patients can rest after vasectomy without loss of earnings.

Even the mild incentive element provided by a congenial clinic atmosphere and pain-relieving drugs are an inducement to patients.

"Satisfied users" who would not otherwise think of bringing their friends to the clinic are motivated to do so.

A graded bonus system which rewards the better workers provides a suitable method of augmenting a low basic salary structure.

Midwives are compensated for loss of practice arising from a reduction in births. Referral or finder's fees are a means of recruiting patients in rural areas which have no family planning workers.

Disadvantages of incentive payments

The question was not answered for Pakistan or India. The disadvantages of incentive payments were, for Korea, Taiwan, the Assam tea estates and Ceylon, mainly derived from possible abuses of the system. They all feared that the financial inducement to reach as many cases as possible would reduce the quality of service, as illustrated by the Taiwan answer.

“Too much stress on getting loops in; not enough on providing reassurances.

Untrained workers avoid warning of side-effects and do not answer questions”.

Other difficulties in the use of financial inducements were that they were open to criticisms of bribery, led to more complaints about side-effects and could cause jealousy and distrust among health centre workers (Korea).

Egypt mentioned quarrels about “who should get the money and who was responsible for bringing the patients”; it was sometimes simpler to give the money to the patient instead; it was felt that “the system constituted a form of corruption which would attract profiteers and possibly drive decent people away”.

Patients themselves were not blameless; Korea mentioned them among “possible ways of abusing the system” and in Egypt women were reported to have gone from one centre to another asking for removal and then for another insertion.

On the administrative side, too much delay in payments dampened the volunteers’ enthusiasm and there were problems in determining the source of referral (Taiwan). Dr. Gilroy (Assam) did not consider that incentive payments altered the attitude of disinterested or reluctant women and pointed out that the R250 maternity benefit was a much greater inducement to increasing family size. He thought payments worked against the right attitude to planned parenthood and a similar comment was made by Celon.

“In the haste to snatch the money benefit, the real benefit may be lost sight of.”

The Egyptian Family Planning Association had also objected to the introduction of incentives into work which had been based on “moral conviction”. “We felt that family planning should be accepted as a service to the recipient . . . rather than a service to the state for which she should be compensated.” There had been arguments among people claiming referral fees.

The discrepancy in Egypt between IUD payments and the 10 piastres charge for a month’s orals weighted the balance in favour of the IUD, whatever the medical considerations. The point was therefore raised that incentives should not unduly influence the choice of medical prescription.

Summary of disadvantages

In their anxiety to increase acceptances, some workers fail to give patients adequate preparation and reassurance. The side-effects of the loop are not explained properly.

Patients have had IUDs removed and re-inserted in order to obtain a further incentive payment.

Incentives are ineffective in reaching resistant women, and too small to provide a counter-attraction to high maternity benefits.

642
A contraceptive method which carries an incentive payment may be chosen by the patient or recommended by medical staff instead of another which would be more suitable for medical reasons.

There are disputes about who should receive referral fees.

Workers are discouraged by delays in payment and it is therefore essential for an incentive payments scheme to have an efficient administrative structure.

Incentive payments as a decisive factor

Opinions varied as to whether incentive payments were a decisive factor in family planning programmes.

According to the Pakistan reply, the failure of the second Family Planning Plan (1960-65) had been attributed to the fact that doctors "did not or could not" find time to motivate patients or do family planning work: no incentives had been provided for these additional duties.

In Korea also, incentive payments were regarded as decisive, in the sense that the majority of clients in rural areas could not afford expensive services.

In Taiwan the payments were not decisive but were helpful to the programme. In India the government considered that motivation was more important than compensation, though payments had some effect in the lower economic and educational groups; the reply from the tea estates included a report that some IUD non-acceptors had actually denied that payments would induce them to accept the device. Ceylon, without actual experience of incentives, considered that the satisfied client was the most important factor.

Suggested alterations to methods of payment

None of the changes suggested for the method of payment were of a radical nature, though a field trial in Korea had indicated that clients who paid for an IUD insertion had a higher retention rate than those with free insertions. It was too late to change the system of free service in the national programme. The payment to doctors in Korea was thought to be too low.

In Pakistan the scale of payments had already decreased since 1965 and no future changes were suggested.

The increased administrative difficulties involved in a flexible system of payments were mentioned in the answer from Taiwan, where a more selective method of paying bonuses was suggested. The Ceylon reply disagreed with the proposal to give bonuses only to medical personnel but acknowledged the difficulty of organizing a system in which anyone could earn a bonus.

Other suggestions from Ceylon were a greater sum for tubal ligation of mothers with more than five children, and also for male sterilizations, which at the moment are less popular than female. A deadline was suggested for IUD insertions, after which the patient would have to pay.

As the situation in India differs from state to state, no overall changes were suggested. The Rs5.0 generally allocated to the patient were paid by some States in a lump sum, by others in instalments at insertion and at checking; vasectomy payments were similarly made in part after operation and the remainder after a negative semen test.

Dr. Gilroy of Assam, pointing out that family planning work is part of the estate doctors' duty and that no extra payment should be made for doing it, was in favour of giving IUD acceptors the whole sum. Even then the amount a woman received would be far less than the Rs250.0 payable as maternity benefit.

The same point was made by the FPA of India; it would be much cheaper for the State to provide compensation, and give a little financial help even if no expenses had been incurred by the patient, than to provide for more children. Some industrial concerns offered compensation well above the amounts allowed for by the State.

The FPA had suggested the idea of a "no birth bonus" to the Central Family Planning Board and a Small Family Norm Committee had been appointed to study the question of incentives and disincentives.

"Reasonable monthly totals" of IUD insertions and vasectomies

Informants were asked to give their estimate of a "reasonable monthly total" for insertions and vasectomies that could be carried out by a doctor working full time in the programme.

The IUD estimates for India and Korea were virtually the same, though calculated in different ways.

India: 20 cases per day for 20 days—400 cases per month.

Korea: 300-400 cases per month.

The Pakistan figure was 200 per month, with approximately 200 follow-up or re-visit cases, giving a total of 300 patients dealt with.

Ceylon reported that 10 new or 15 old patients could be dealt with during a two hour session.

In Taiwan, IUDs are inserted by private physicians and so the question did not apply.

A greater variation was shown in the estimates of the monthly totals of vasectomies that could be carried out:

Pakistan: 200 per month.

India: 100 (the figure depending on the availability of patients).

Korea: 60-80.

Table 8. Payments to Personnel for Family Planning Services, by Type of Service and Category of Worker, for 12 Countries with National Family Planning Programs¹ (Continued)

Country and type of service performed	Exchange rate in U. S. cents	Actual payments in local currency				Equivalent in U. S. cents			
		Medical doctors	Mid-wives	Other specified personnel categories	Unspecified personnel categories	Medical doctors	Mid-wives	Other specified personnel categories	Unspecified personnel categories
Turkey IUD insertion Orals ⁷ Case recruitment ⁵ Field work	1 lira = 11 cents			10 ³				110 ³	
					5				55
					5				55
United Arab Republic ²⁰ IUD insertion Orals (in urban areas) Orals (in rural areas) Case recruitment Case recruitment, paid at follow-up ²²	1 pound = 230 cents	0.5 0.05 0.06	0.25 0.025 0.020	0.25 0.025 0.020		115 12 14	58 6 5	58 6 5	
					0.5 ²¹				115 ²¹
		0.25	0.25		0.25	58	58		58

¹ Cash payments and allowances paid specifically for activities connected with family planning program. Does not include the usual salary of staff regularly employed in health services or similar activity. In Indonesia, Iran, Kenya, Morocco, Nepal, Thailand, and Tunisia salaries or fees are, in most instances, not specific for family planning services, since the program is integrated into the health network of the country and the service is included with the other responsibilities of the staff. A different situation prevails in Malaysia and Hong Kong, where the private Family Planning Association receives a sizeable government subsidy and plays a large role in the execution of the program. This was also the case in Singapore until recently when the government took over a large part of the operation of the private association.

² Payment schedule yet to be implemented.

³ Medical or paramedical.

⁴ Figure represents Central Government recommendations to the States. The Central Government contributes 11, 30, and 70 rupees to the States per IUD, vasectomy, and salpingectomy, respectively. These Central Government contributions include payments to clients and other personnel as well as payments to physicians.

⁵ Finder's fees are paid to persons within or outside the program who bring cases into the program.

⁶ Fees vary by States; figure shown here is the normal payment.

⁷ Payments (other than those shown) are not specifically given here because the personnel involved are part of the health program.

⁸ Monthly payment.

⁹ In addition, the National Family Planning Board pays annual incentives of £250 (\$600) to parish medical officers and £60 (\$144) to public health nurses.

¹⁰ Paid on a time, not case, basis since January 1971, but the rate of payment is currently unavailable.

¹¹ Payment to *da:* (village midwife). In addition, each *da:* receives 15 rupees a month as a retainer fee.

¹² Reduced to 10 in December 1969 because doctors no longer supply the medications and dressings. However, doctors are reported to be "on strike" against the reduction.

¹³ Monthly salary given to FPO (family planning officer).

¹⁴ Payment to contracted doctor. Half is paid by client except during special periods of free insertion.

¹⁵ Finder's fees are paid to private midwives and Farmers' Association workers.

¹⁶ Includes monthly salary of 1,200 New Taiwan dollars paid to PPHW (pre-pregnancy health worker) and monthly salary of 2,000 New Taiwan dollars paid to VHEN (village health education nurse).

¹⁷ Payment to PPHW or other health personnel for sale of one cycle of orals.

¹⁸ Payment of PPHW or other health personnel for sale of one dozen condoms.

¹⁹ Payments are not specifically given because the family planning services are integrated into the health program. Travel expenses and "salary toppings" are paid ranging from 10 dinars (\$20) per month for some nurses' aides to 50 dinars (\$100) for some gynecologists. Payments for home visits are under consideration.

²⁰ In addition to personnel categories specified, top administrative family planning personnel receive 30 per cent additional salary above their regular health service salary for program supervision.

²¹ Paid to any *daya*, or person who recruits an acceptor.

²² Finder's fees are paid to persons within or outside the program who bring cases into the program. For IUD insertions, payment is made after one month if the IUD is still in place.

Source: Published reports of the family planning administration of the individual countries, supplemented by reports from Population Council field staff and others.

"Incentives in the Diffusion of Family Planning Innovations,"
Everett M. Rogers, Studies in Family Planning, Vol. 2,
No. 12, December 1971

This paper is an attempt to synthesize what is known about the effects of family planning incentives. At the time the paper appeared, incentives were paid in nine countries, and in some accounted for more than 20% of the total family planning budget. These payments are variously known as "compensation for lost work time," "finders fees," "fee for services;" and have been broadly divided into two categories: adopter incentives, paid to the adopter, and diffuser incentives paid to the motivator or canvasser. (This same breakdown is made by Sprehe who uses the terms acceptor incentives and administrative incentives).

Incentive programs in India and Pakistan have been successful as reflected in the fact that many people crossed state lines and travelled considerable distance to avail themselves of incentive supported services. In fact, many Pakistanis illegally crossed the Indian border to obtain contraception. This factor was critical in causing Pakistan to introduce incentives. Additional evidence of the impact of incentives is presented from several studies and programs in India.

In this paper Rogers cites many of the problems of incentive programs and calls for controlled studies on the effectiveness and efficiency of incentives. His conclusion is that "higher quantity and quality effects of incentives are possible, although they are far from being reached by present incentive programs. If improved incentive schemes can be designed, based on behavioral science, we may be able to solve society's population problem without recourse to more coercive measures that might violate or destroy individual values of independence and freedom."

Studies in Family Planning

A PUBLICATION OF
THE
POPULATION
COUNCIL

Volume 2, Number 12

December 1971

Incentives in the Diffusion of Family Planning Innovations

THIS ARTICLE by Everett M. Rogers, professor of communications at Michigan State University, presents a typology of incentives and sets forth the general effects of incentives, insofar as is known. The article is a shortened version of a chapter in the author's forthcoming book, Family Planning Communication. The article was written by Professor Rogers while he was investigating family planning communication behavior in India, Pakistan, and Indonesia on a Ford Foundation travel-study grant in 1970-1971.

synthesize what is known about the effects of incentives on the diffusion of family planning innovations. Thus we are limited to those incentives that have actually been studied.

Background

Incentives in family planning programs have occasioned much controversy in recent years. There is argument about the ethical implications of pecuniary persuasion and about the effects of incentives on the rate of diffusion of family planning methods. We do not judge the ethical correctness of incentives in this article; rather, our purpose is to synthesize what is known about the effects of family planning incentives. To this end, we will present a brief review of the history of incentives and their present status in the field, develop a classification of different types of incentives, as illustrated by different programs, and propose five generalizations about the effects of incentives. These generalizations are propositions that are supported by findings in the field, but that need further evidence before they can be considered as definitive.

The incentives we will discuss in this article are those objects of financial value that are given by an organization to an individual, couple, or group, in order to encourage some overt behavioral change (based on Pohlman 1971, p. 5). This definition is purposefully narrow: it does not include the wide range of perceived advantages and disadvantages of a family planning innovation that affect an individual's adoption decision or the subjectively defined rewards and punishments that affect parents' birth decisions. (The latter might include the prestige of having another child, the cost of raising an additional child, and the potential returns from the labor he might contribute.) These forms of incentives are very important in decisions about family planning methods and deserve investigation; however, in this article we follow the narrower meaning, because we intend to

Although family planning incentives are currently paid in at least nine countries (Pakistan, India, South Korea, Turkey, the United Arab Republic, Taiwan, Ghana, Indonesia, and Mauritius), there has been relatively little behavioral science research on the role of incentives in the diffusion of family planning. Even such crucial policy decisions as how large the incentive payments should be, when, how, and to whom they should be paid, and the form they should take, seem to have been made on the basis of intuition and conjecture (and, occasionally, experience), rather than on an empirical basis. Since Enke (1960a, 1960b, and 1960c) proposed that incentive payments for birth prevention would lead to considerable economic returns in less-developed countries, a variety of types of incentive schemes have been set forth and debated (for example, Krueger and Sjaastad 1962; Chandrasekhar 1960;

67a

Demeny 1961; Simon 1969; Spengler 1969; Ridker 1969; and Kangas 1970). However, most of these proposals have consisted of hypothetical analysis without supporting data.

In the field, there has been a tendency to underplay the role of incentives. Thus in several areas in which incentives have been introduced, they have not attained the status of an openly recognized program policy. India has had the most intensive experience with incentives and has been the site of the most research on their effects. About 22 percent of the total family planning budget in India's 1969-1974 Five-Year Plan is designated for incentives. Yet many family planning officials in India act as if incentives did not exist. Thus incentives are officially referred to as "compensation for loss of earnings" due to adoption of the IUD or sterilization. Freedman (1969) noted:

Promoters [who are paid a "finder's fee" or diffuser incentive] have an important role in the program for vasectomies. They do not have any official status in most states. No records are kept on them, no significant checkup is done on their work. Can India afford to leave such a huge void in the information and control of personnel who are getting credit and payment for most of the cases in many areas? The opportunities for corruption, abuse, waste, and eventual serious repercussions on the public image of, and respect for, the program are too obvious to require elaboration.

Perhaps one reason for the low official status of incentives can be found in the motivation for introducing them. In many instances, incentives are initiated in order for a program better to compete for clients with a nearby program that offers incentives. This reason for introducing incentives is demonstrated in the case of the earliest incentive programs.

The first large-scale family planning incentive scheme was begun in 1956 by the government of Madras State (now called Tamil Nadu) in South India. Thirty rupees (about US\$6.67 at the then existing rate of exchange, and \$4.00 since a currency devaluation in 1966) were paid to a man or woman who adopted sterilization. Starting in 1959, 10 rupees were paid to a "canvasser" (known variously as "motivator," "field worker," or "promoter") who motivated an individual to come to the clinic for the operation. Thus, even at the early stages of the incentive program in India, two types of incentives were recognized: (1) *adopter incentives*,

paid to the adopter to motivate his adoption, and (2) *diffuser incentives*, paid to the canvasser to speed the rate of diffusion of the innovation.

Vacillations in incentive policies in Tamil Nadu State occurred from 1956 to 1971 as the state government modified its incentive scheme because of criticism, the availability of funds, and evidence of the incentives' results. (These alterations in diffuser incentive policies provide us with data on the effects of incentives that could hardly be improved upon if the purpose had been experimental [Repetto 1969]). The diffuser incentive (10 rupees in 1971) was discontinued (April 1963), partially reinstated (September 1964), fully reinstated (1964), paid only to government-registered canvassers (1966), paid only to government employees (1969-1970), and paid to anyone who motivated an adopter (1970-1971). Finally, an additional diffuser incentive of 10 rupees has been paid, since 1960 as a "group incentive" to the village *panchayat* (council) in which the adopter lives in order to encourage local leaders to recruit adopters.

The Tamil Nadu vasectomy program spurred ahead of other Indian state programs in rates of adoption. In 1965-1966, Tamil Nadu paid the highest sterilization diffuser incentive (only 5 of 15 other states paid 2 or 3 rupees, and the rest had no canvasser fee) and adopter incentive (5 states had none). Tamil Nadu had 3.42 sterilizations per thousand population, while the other 15 states averaged about 1.00. Some states were forced to start paying incentives because otherwise some of their residents traveled to a neighboring state to adopt a family planning method, and to obtain the accompanying incentive that was paid. Evidence of considerable movement into Tamil Nadu from adjoining states is provided by Repetto (1969). The central government in New Delhi began to reimburse states for partial costs of incentives and by 1969-1970 agreed to provide the entire cost of adopter incentives for IUD (11 rupees), vasectomy (30 rupees), and tubectomy (40 rupees), plus diffuser incentives.

Concurrently, a country-to-country diffusion of incentive policies occurred. In 1966-1967 a family planning official in a Pakistan district bordering India realized that many of his potential clients were illegally traveling across the frontier to obtain vasectomies (and the accompanying adopter incentives). Some of them were recruited by Indian canvassers, Bengalis who were ethnically similar to the

East Pakistanis. The Pakistan district official was forced to begin an incentive scheme, which had encouraging results, and consequently spread to other districts in East Pakistan, and then to West Pakistan. Today seven other nations in Asia and Africa have either adopter or diffuser incentives, or both.

For over a decade there was no empirical investigation of the effects of incentives. Recently, however, two useful studies have been completed in Tamil Nadu State. Fortunately for our present purposes, the results of these studies, viewed in concert, provide insights about the diffusion effects of family planning incentives. In one investigation, Repetto (1969) compiled data from a sample of about 30 vasectomy canvassers to describe how such canvassers encourage adoption. Repetto also used aggregate data over time to provide an economic analysis of the effects of incentives.

The second main study from which we shall draw was carried out by Srinivasan and Kachirayan (1968), who interviewed 297 vasectomy adopters in rural areas of Tamil Nadu State. These respondents had vasectomies between 1965 and 1967, a period during which the adopter incentive of 30 rupees and the diffuser incentive of 10 rupees to canvassers and 10 rupees to *panchayats* were paid. Before considering these studies, we will present a review of types of incentives.

Types of Incentives

A variety of types of incentives are paid by family planning programs, and many other possibilities have been proposed. We list below seven different criteria by which incentives can be classified. Effects of different types of incentives are discussed in the next section.

1. *Adopter versus diffuser incentives.* As previously pointed out, incentives can be paid either directly to an adopter or to a canvasser to encourage him to persuade an adopter.

2. *Individual versus group incentives.* Payments can be made to individual adopters or canvassers, or to groups to which they belong (as in the case of the *panchayat* incentives in India). Kangas (1970) points out that, "All of the incentives used thus far in the vast majority of programs are given to individuals—acceptors or providers." However, a number of programs have policies that provide group incentives, although they are not

defined as such. For instance, the allocation of the national family planning budget in India to states can be considered a group incentive. This allocation was on the basis of total population until 1970 (for example, the salary of a nurse-midwife was paid to each state per 10,000 population); in 1970 the allocation formula was changed also to reward the past relative success of the state's family planning program.

3. *Positive versus negative incentives.* Although all these incentives are positive (in that they reward a desired behavior change), it is also possible to penalize an individual—by imposing an unwanted penalty or by withdrawing some desiderata—for not adopting an innovation. For instance, the Uttar Pradesh state government in India uses a family planning disincentive: any government employee who gives birth to a fourth (or further) child is not eligible to receive maternity leave and must pay all hospital and delivery costs—100 to 200 rupees (US\$13.33 to \$26.67). Similarly, the government of Ghana decided in 1969 to grant maternity leaves and to pay child allowances and traveling expenses only for an employee's first three children. Similar policies are followed in Indonesia's state-owned textile factories.

4. *Monetary versus nonmonetary incentives.* Although we have described only financial incentives, incentives may also take the form of some commodity or object desired by the recipient. For example, in Andhra Pradesh State a *sari* with red triangles (the symbol of family planning in India) was awarded to each tubectomy adopter in 1969, and each vasectomy adopter received a similarly decorated *lungi* (male garment).

5. *Immediate versus delayed incentives.* Most of these incentives are immediate, in that payment is made at the time of adoption, but delayed incentives may have advantages under certain conditions. In the United Arab Republic, the government pays an adopter incentive for an IUD insertion at the time of the clinic follow-up, when it can be ascertained that the device is still in place; hence, discontinuance is less likely. Certain incentives can be awarded only on a delayed basis; examples are a guarantee of priority in government employment or educational enrollment for the children of a couple who adopt a contraceptive. Simi-

larly, a family planning bond is offered to the workers on tea estates in South India for nonpregnancy, in order partially to compensate them for the loss of old-age security provided by children (Ridker 1969 and 1971).

6. *Graduated versus nongraduated incentives.* It might be argued that an incentive of 30 rupees is not equal in value to all adopters; a landless agricultural laborer with a monthly income of 50 rupees will perceive the incentive quite differently from someone with an income of 400 rupees. Further, if the purpose of family planning incentives is to motivate adoption, there is no reason why the payments need be identical for each adopter—or for each canvasser. To illustrate a graduated incentive for diffusers: in Taiwan, family planning field workers receive a higher incentive payment for motivating adoption among women under 30 years of age than for those over 30, and they receive ten times as much credit for an IUD adoption as for a pill adoption. An illustration of a graduated incentive for adopters is provided by one Indian factory that offers acceptors 75 rupees for sterilization after three children, 45 rupees after four children, and 25 rupees after five or more children (International Planned Parenthood Federation n.d., p. 11). This sliding system of payments is designed to reward births prevented rather than simply the adoption of a contraceptive.

7. *Contraception versus births-prevented incentives.* The purpose of securing the adoption of contraceptives is to prevent births. Incentives can be classified as to whether they encourage the prevention of births directly or only indirectly by rewarding adoption. The Indian family planning bond, mentioned previously, is a births-prevented incentive in that the bond is withheld if the tea estates worker gives birth to an additional child. Almost all the incentives currently used in less-developed countries are contraception incentives.

Further classification of incentives could, of course, be postulated, such as whether the payment is made by a government or a private source, whether the incentive is large or small, and so on. However, the main purpose of this taxonomy is to illustrate some important criteria by which incentives can be classified so that these attributes can be combined to

form an incentive policy that maximizes certain desired aspects.

To illustrate our classifications, consider the field-worker incentive program that was begun on an experimental basis in Sialkot District, West Pakistan, in 1970 (Wajihuddin 1971). This program, since broadened to other districts in Pakistan, provides a bonus for canvassers, or field workers, on the basis of their success in preventing births. Each team, consisting of a male and a female field worker, is assigned to recruit acceptors from about 1,200 fertile client couples. At the end of each year, the field workers are paid an incentive bonus based on the number of eligible couples who did not become pregnant during the year. The Pakistan field-worker incentive system, classified by our criteria, is: (1) diffuser not adopter; (2) individual not group; (3) positive rather than negative; (4) monetary; (5) delayed (until the end of the year); (6) graduated (in that some field workers are paid larger bonuses than others); and (7) on a births-prevented basis.

Generalizations about Diffusion

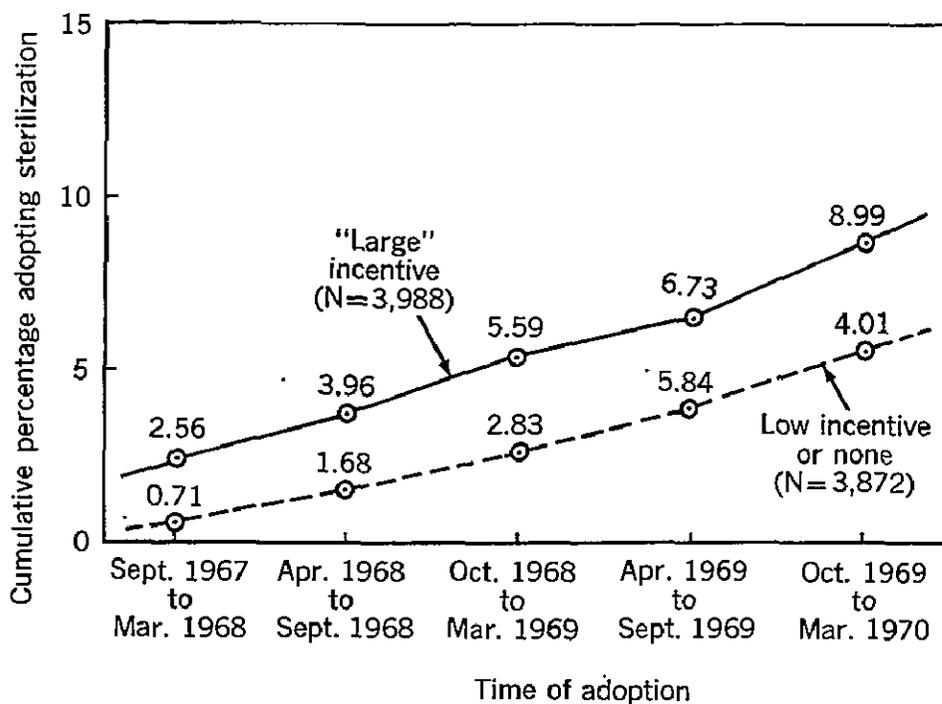
On the basis of experience with incentive schemes and the research completed on them, we have made five generalizations about the role of incentives in diffusing family planning innovations.

ADOPTER INCENTIVES AND ADOPTION

Generalization I: *Adopter incentives increase the rate of adoption of an innovation.* This assumption is made implicitly by family planning policymakers who offer adopter incentives, and the limited evidence available indicates that it is probably justified. We have cited Repetto's 1968 and 1969 studies of the Tamil Nadu vasectomy program.

Additional evidence for generalization I comes from a comparison of adoption rates of sterilization between: (1) 3,988 married workers in four factories in the Tata industrial group in India, which has offered an adopter incentive of 200 rupees (about US\$27) since September 1967; and (2) 3,872 married workers in five factories, of similar size and located nearby, three of which offer no incentive and two of which offer less than 25 rupees (Research and Marketing Services 1970). All workers are also eligible to receive the government incentive—10–20 rupees in the states in which the factories are located.

FIGURE 1. *Vasectomy Adoption Levels among Factory Workers, by Level of Incentives, India, 1967-1970*



Source: Research and Marketing Services 1970: 27.

Figure 1 shows that the high adopter incentives were associated with higher rates of adoption of sterilization in each of five six-month periods, although the differences due to the large incentive were not spectacular, averaging about 3 percent (while adoption ranged from almost zero to about 9 percent over 2.5 years). This difference in adoption rates appears to be due solely to an adopter incentive.

Further evidence for generalization I comes from analysis of the Ernakulam District vasectomy campaigns. When a "large" adopter incentive (in cash and in kind) of 86 rupees (US\$11.70) was paid in the first Ernakulam vasectomy campaign in India in 1970, 15,000 vasectomies were obtained in one month and, in 1971, 63,000 more vasectomies were obtained in one month with a 100 rupee incentive. However, this effect was due in part to such factors as the sound management of the campaign (Krishnakumar 1971).

ADOPTER INCENTIVES AND WHO ADOPTS

Generalization II: *Adopter incentives lead to adoption of an innovation by different individuals than would otherwise adopt.* Usually, adopters of an innovation have higher socioeconomic status than non-adopters. (For extensive evidence on this point, see Rogers and Shoemaker [1972], a review of the results of several hundred research studies.) However, analysis of the

Research and Marketing Services (1970, pp. 30-31) data shows that the adopter incentive described above was most effective in leading to higher adoption rates among those factory workers with lower incomes, for whom an incentive of 200 rupees corresponded to several months' pay. At the higher levels of monthly income (above 500 rupees), the incentive had little effect. Similarly, the incentive had greater effects (there were more adoptions) on workers with less education; with three or more children; with at least one son; and with a husband who was over 35 years of age. The workers who adopted because of the incentive tended to have lower socioeconomic status and larger families. Perhaps adopter incentives encourage lower-status clients to adopt. For instance, about 75 percent of the 30,000 incentive-motivated adopters of vasectomy in Bombay in 1967-1968 earned 100 rupees (US\$13.33) or less per month (Pohlman 1971, p. 4).

Perhaps one very important effect of incentives is a reversal of who adopts first in an "audience"; incentives seem to encourage the poorest, rather than the richest, to be most innovative. If this reversal of the point at which the diffusion process starts in a social system is found in further investigations of incentives, the implications for the ethics and strategies of diffusion are profound. Studies of non-

incentive-motivated diffusion have found that the relatively most elite clients in a system have the highest degree of contact with agents of change, and as a result these elite clients adopt first. So most change programs make the elites more elite, and the nonelites more relatively disadvantaged. But this vicious circle of eliteness → change agent contact → innovativeness → greater eliteness seems to be broken when incentives are paid. We do not yet know—and should determine—whether this reversal of where diffusion starts in a system is due more to adopter incentives or to diffuser incentives, and whether the reversal is more likely with relatively smaller incentives. The reversal may be characteristic only of family planning—as compared to other types of innovations, or it may even be limited to vasectomy, as a family planning method that may appeal particularly to low-status individuals.

ADOPTER INCENTIVES AND THE QUALITY OF ADOPTION

Generalization III: *Although adopter incentives increase the quantity of adoptions of an innovation, the quality of such decisions to adopt may be relatively low, leading to limitations in the intended consequences of adoption.* If individuals adopt an innovation partly in order to obtain an incentive, there is relatively little motivation to continue using the innovation (if it can be discontinued). The incentive may also attract adopters of the innovation who cannot obtain its officially intended advantages or consequences (for example, adoption by a couple beyond their fertile years will not prevent births). For these reasons, a births-prevented incentive is more likely to guarantee continued adoption and intended consequences than is a contraception incentive.

Srinivasan and Kachirayan (1968) found that of their 297 vasectomized respondents 43 percent stated that money was their "sole motivating factor" for adoption. Forty-one percent said they adopted to limit family size or for health reasons, and 7 percent reported a combination of monetary and family size limitation reasons. Four percent of the respondents reported being "compelled to adopt" by the canvasser, and 5 percent adopted to obtain promised medical and monetary help without really possessing information about the vasectomy that they had. By contrast, 86 percent of vasectomy adopters in East Pakistan (where an adopter incentive of 20 rupees, or

US\$4.00, was paid) said they wanted permanent protection from an unwanted child but had been precipitated to adoption by the incentive (Family Planning Division, Government of Pakistan 1969, p. 15). At least in this instance, the adopter incentive seems to have acted as a "cue-to-action" (Hochbaum 1958; Rosenstock 1966).

According to Srinivasan and Kachirayan, only 63.3 percent of the adoptions among their respondents could result in preventing births; age and marital status of the other adopters made contraception unnecessary. "A good proportion who underwent vasectomy were either sterile or subfertile at the time" (1968). Further, only 38 percent of the adopters met the legal requirements for sterilization.

In a 1957 follow-up survey of 265 vasectomized men in Delhi, 10 percent were not married and 50 percent did not have their wives' consent, which was officially required (Kapoor and Chandhoke 1968).

On the basis of such evidence, Repetto (1969) estimated that in Tamil Nadu State about 25 percent of all the wives' signatures were forgeries, and that in about 50 percent of all vasectomy cases, some aspect of official policy was violated (either relating to number of children, age, or the wife's permission).

Thus the picture that emerges of the incentive-motivated vasectomy adopter is of an individual who is likely to adopt for the "wrong" (in the eyes of family planning policy makers) reasons, and, in many cases, whose adoption may not lead to the desired consequences of births prevented. This relatively low quality of vasectomy adoptions seems mostly caused by the payment of adopter (and diffuser) incentives.

Many researchers and program officials have largely ignored the "quality" dimension of adoption in the past. It is sometimes assumed that all adoptions are equal in reaching the goal of most family planning programs, preventing births. Recently, we have recognized two dimensions of quality: (1) continuation rates (quality-over-time), and (2) whether desired consequences are attained (indicated by whether those adopting a family planning method could actually prevent births).

DIFFUSER INCENTIVES AND ADOPTION

Generalization IV: *Diffuser incentives increase the rate of adoption of an innovation by encouraging interpersonal communication about the innovation with peers.*

A promoter of an innovation who has adopted an innovation, who is similar to the potential adopter in socioeconomic status, life style, and attitudes, and who is a trusted friend is the greatest motivating force for adoption of family planning ideas. Thus, diffuser incentives increase the degree to which the results of an innovation are visible to others (Rogers and Shoemaker 1971).

Repetto (1969) found that the vasectomy canvassers in India shared many characteristics with the adopters, who were poor, illiterate, low-caste, employed as agricultural laborers or urban manual workers, least knowledgeable about family planning methods, and least accessible through the conventional promotional approaches. The canvassers' identification, as evidenced by dress and life style, is "not with the lower civil service but with the common man" (1969, p. 9). (Interestingly, there are pressures from canvassers in India for guaranteed wages, uniforms, badges, and other marks of status, perhaps suggesting a desire to shift their identification to being more like government family planning employees. Such a shift would of course widen the perceived gap between canvassers and potential acceptors and probably decrease the effectiveness of the canvassers.) All the canvassers that Repetto studied had been vasectomized themselves. A crucial point in the adopter's decision process occurred when the canvasser showed his operation scar, as evidence that the sterilization was physically insignificant and that the canvasser knew what he was advocating to the potential adopter. The canvassers ranged over a 100-mile radius in searching for adopters and worked a six- or seven-day week, at a task publicly viewed as having very low prestige.

Repetto stated that, "Despite a structure of social workers and health educators, virtually all operations . . . are promoted by canvassers" (1969, p. 9). (Although several important changes in diffuser incentive payments have occurred in Tamil Nadu State since Repetto's data were gathered in 1966, I observed in 1970-1971 that Repetto's conclusions about the overwhelming importance of canvassers in motivating adoptions were still correct for that state and probably for most other Indian states.) In short, professional government family planning field workers could not accomplish the results obtained by canvassers.

Empirical evidence to support the relative importance of vasectomy canvassers

in speeding diffusion can be found in the experiences of the Tamil Nadu sterilization campaign, as reported by Srinivasan and Kachirayan (1968). This campaign incorporated the use of nonprofessional aides, who are on the same status level as their poorer clients, and the use of both diffuser and adopter incentives.

1. Forty-eight percent of the Tamil Nadu vasectomy adopters reported that canvassers were their most important source of information about vasectomy.

2. Four percent of the respondents reported being "compelled to adopt" by a canvasser. Although this figure is comparatively low, it is still noteworthy because alternative reasons for adoption are more socially acceptable.

3. Respondents contacted by canvassers passed through the decision process more quickly than vasectomy adopters contacted by family planning staff. (In a somewhat parallel case, Perkin [1970] found that an adopter incentive in Ghana shortened the time-lag between knowledge and decision to adopt an innovation.)

4. In April 1963, after four years' experience with a diffuser incentive for vasectomy (and seven years' experience with an adopter incentive), the Tamil Nadu government discontinued the diffuser incentive on the assumption that by then a sufficient number of people were informed of the innovation and therefore its diffusion would continue without the incentive payments. However, the rate of vasectomy adoption dropped so alarmingly that within six months the state government reinstated the diffuser incentive. (Repetto [1969] and Srinivasan and Kachirayan [1969] give details on this government vacillation in incentive payment policies.)

Repetto's (1969) statistical analysis of the Tamil Nadu state vasectomy campaign concludes that "the canvasser program has had a substantial impact," which he estimates conservatively to be about 75,000 additional adoptions per year, or more than 25 percent of the total in 1966. The value of the 900,000 expected births prevented over the following five years, in terms of labor and consumption, is US\$70,000,000. Repetto's analysis of the campaign indicates that the diffuser incentive was more important in effecting the rate of adoption than was the adopter incentive, but this conclusion may be a function of the relative size of the two types of incentives, or of other idiosyncratic factors.

In greater Bombay, incentives were first

paid to adopters and canvassers in July 1967. The number of vasectomy adoptions per month jumped from 200 to 7,000 within six months.

All this evidence has dealt with diffuser incentives for vasectomy, and hence the conclusions drawn may be limited to that method. However, a recent study of the effects of diffuser incentives for the IUD and pills in Indonesia (Rogers 1971), shows that rates of adoption approximately doubled in 1970-1971 when incentive payments of 100 to 300 *rupiah* (US\$0.25 to \$0.75) were paid. No adopter incentives are paid in Indonesia (the only country with incentives where this is true); so this effect is due solely to diffuser incentives.

Perkin (1970) found that the highest rate of family planning clinic visits (to adopt the IUD or pills) by Ghanian women occurred during weeks when an adopter and a diffuser incentive (of free powdered milk) were offered. Further, the lowest cost per adopter was secured when both types of incentives were available, although a reanalysis of his data shows that the adopter incentive was more important than the diffuser incentive in reducing cost. The cost per adopter (of clinic services for family planning) averaged \$9.85 without either adopter or diffuser incentives, \$5.74 with an adopter incentive only, and \$4.47 with an adopter and a diffuser incentive.

DIFFUSER INCENTIVES AND THE QUALITY OF ADOPTION

Generalization V: *Although diffuser incentives increase the rate of adoption of an innovation, the quality of the decision to adopt may be relatively low, leading to undesired consequences.* There is an obvious parallel here to generalization III, about adopter incentives and the quality of adopter decisions, and much of the evidence cited in that discussion is applicable here. The most clear-cut support of generalization V is provided by Srinivasan and Kachirayan (1968), who found that "the proportion of malpractices . . . appears to be much less among those informed [about vasectomy] by the village officials or health staff than among those informed by canvassers or other vasectomized persons." Respondents contacted by canvassers, when compared to those motivated by official family planning staff, were more likely (1) to have undergone sterilization without their wife's consent; (2) to be motivated primarily by the in-

centive, rather than by a desire to limit family size; and (3) to hold an unfavorable attitude toward vasectomy even after adoption. These points suggest a high degree of coercion by the canvassers. On all three counts, sterilizations motivated by canvassers were of lower "quality." (Although this quality difference might be due to the health staff's clients being more favorable to vasectomy before the operation than were the canvassers' clients [Pohlman 1971, p. 73].)

Such adopters are likely to spread unfavorable rumors about vasectomy. The result is an eventual plateau effect in the rate of adoption. Such a leveling out in adoption has occurred for the IUD in many countries, and for vasectomy in India and Pakistan. Unfortunately, most research on the effects of incentives deals only with vasectomy, and we cannot be certain that the results will also hold for other family planning methods; however, I feel that the lower quality of adoption caused by diffuser incentives also occurs for IUDs, at least in India and Pakistan. A dissatisfied customer who adopted because of pressure from a canvasser is the worst kind of interpersonal advertisement for an innovation.

Abuse of diffuser incentives is common in India. Repetto (1969) estimates that abuse occurs in 50 percent of the vasectomy cases, most of it due to the diffuser, rather than the adopter, incentives. Kapoor and Chandhoke (1968) found that 15 percent of the vasectomy adopters received considerably less than the full adopter incentive of 30 rupees; 2 percent got less than half of it. The canvassers were cheating the adopter out of part of the adopter incentive.

Possible solutions to the quality problem associated with diffuser incentives may lie in: (1) a thorough control system, which provides better enforcement of incentive policies; (2) a communication campaign to convey accurate information about the family planning innovation to the intended audience (so as to decrease reliance on canvassers for educating clients); and (3) alteration of incentive policies so they will be more easily enforceable (for instance, allowing a man with one or two children to adopt vasectomy). Incentive systems designed to increase rates of adoption are also incentives to cheat the incentive system; prevention of malpractice involves a re-design of the incentive system or the creation of a control system to prevent cheating.

Needed Research

A review of what is known about the effects of incentives in diffusing family planning innovations and what needs to be known leads to several important conclusions:

The main question is: *What is the ideal combination of incentive policies (for example, immediate versus delayed, positive versus negative) to maximize the rate of adoption of a family planning innovation?* The answer can only be found through a series of well-designed and well-conducted field experiments in which various types of incentives are tried. When almost one-fourth of a national family planning budget is allocated to incentive payments, as in India and Pakistan, investigations on how to maximize incentive effectiveness are badly needed.

EFFECTIVENESS

Kangas (1970) calls for research on an integrated combination of the various types of incentives, pointing out that family planning officials in the past have considered (or tried) types of rewards "one at a time," without synthesizing, adapting, and modifying them into more workable schemes. The multivariable relationships between different incentive policies and their effects need investigation.

None of the data about incentive effects reviewed here come from field experiments, with the possible exception of the factory workers study in India (Research and Marketing Services 1970), and even this study is more correctly described as a "quasi-experiment" (Campbell 1968). The researchers could not manipulate the treatments (incentives), and there were no true control groups because the workers and the factories were not randomly assigned to treatment and control groups. Hence, the degree to which the research design removes the effect of extraneous variables is low.

Another quasi-experiment mentioned in this article is the Tea Estates Bond Scheme, now underway in South India on four tea estates with about 4,000 workers (Ridker 1969 and 1971). Although this investigation advances the understanding of incentive effects, it was impossible to select randomly the four companies involved, and so one cannot be certain that all extraneous variables were removed. A comparison of the fertility rates of the tea-pickers receiving the incentives with the fertility rates of employees of other companies will not tell us the

effects of the incentives alone. The experimental companies may employ workers who are older, more educated, or different in other ways from the "control" workers, and these variables will affect their birth rates.

The main limitation of quasi-experiments, in comparison with "true" experiments, is the difficulty in drawing solid conclusions about the treatment effects. Further, the quasi-experiment usually cannot break outside of the bounds of current practice. The treatments are often only a minor modification of existing policy. "True" experiments, however, offer a way to test new approaches to incentive policies.

But radically different treatments are almost impossible to "sell" to government officials. Almost none of the 15 or 20 delayed, births-prevented incentive schemes (which probably have the greatest promise of demographic effectiveness) proposed since Enke's (1961a) have been approved by any government. For example, the tea estates experiment, when it was originally proposed by Ridker to the government of India, was rejected (although it was later accepted by the tea companies). However, one field experiment with a births-prevented incentive in the form of an educational bond scheme has the support of the provincial government and has been initiated in Taiwan, sponsored by the Population Council (Finnigan, forthcoming). This project may usher in a new era of testing incentive policies.

EFFICIENCY

We need to know the efficiency, as well as the effectiveness, of incentives. What is an optimum budget level for incentive costs in order to maximize the benefit of births prevented? Repetto's (1969) economic analysis of the vasectomy incentive program in Tamil Nadu State suggests that far greater expenditures could be justified in terms of benefits earned. The whole field of the economics of family planning needs much attention, which it is only beginning to receive. Included in economic analyses of incentive programs should be attention to the cost-effectiveness of incentive control systems (designed to ensure higher "quality" adoption decisions).

Fundamental to the five generalizations presented in this article, and to the proper operation of any incentive program, is an understanding of the sociopsychological process of persuasion and innovation decision making through which incentives

have an effect. How individuals perceive incentives and how such perceptions structure their motivations and affect their decisions are not yet known.

An adopter incentive should be awarded to the individual or group who makes the innovation decision, if the incentive is to have maximum effect. An analysis by Pillai (1970) in Tamil Nadu State indicates that only 40 percent of vasectomy adoption decisions are made by the acceptor alone; the remainder are made jointly with wives, kin, and others. Only 10 percent of the tubectomy adoption decisions and 22 percent of the IUD decisions are made by the acceptor alone. Even though the IUD is a female method of family planning, Dubey and Choldin (1967) found that in only 7 percent of 192 Indian families adopting the IUD was the decision made by the wife alone. Most of the remaining 93 percent of the cases were joint decisions by husband and wife. About 75 percent of the women coming to a clinic in Hong Kong for the first time had consulted their husbands about family planning (Lam 1968, p. 82). This shared decision-making pattern is probably common in most countries. Yet, many adopter incentives go to the individual who is not solely involved in the decision, and hence they have a less-than-maximum effect on rates of adoption. Further work needs to be done on who actually makes innovation decisions, so that incentives are offered to the "right" people.

We cited some indirect evidence that incentives may reverse the way in which the diffusion process starts in an audience. When incentives are paid, instead of beginning among the elites, diffusion seems to start among those with the lowest socioeconomic status. Future studies need to determine whether this reversal generally happens, or whether it only occurs for vasectomy in India; whether it is due mostly to adopter incentives or to diffuser incentives; and whether it depends on the size of the incentive (a relatively smaller incentive should lead to greater reversal).

One of the most exciting ideas suggested by the present analysis of vasectomy canvassers in India is that the canvassers offer an alternative to the government civil service (professional) field worker. The canvassers seemed able to motivate more clients, and different clients, than could the professional field workers. We need to understand the reasons for this difference. Is it mainly

due to the piece-rate reward system? To the personal characteristics of the non-professional canvassers? To their previous adoption of the innovation, and their resulting credibility in the clients' eyes?

Finally, future studies should design incentive programs that maximize the "quantity" aspects of their effects, and minimize the low "quality" consequences of incentives. Our conclusion, based on the present synthesis, is that higher quantity and quality effects of incentives are possible, although they are far from being reached by present incentive programs. If improved incentive schemes can be designed, based on behavioral science, we may be able to solve society's population problem without recourse to more coercive measures that might violate or destroy individual values of independence and freedom.

References

Campbell, Donald T. 1968. Quasi-Experimental Design. In *International Encyclopedia of the Social Sciences* 5, David Sills, ed. pp. 259-262. New York. Macmillan and The Free Press.

Chandrasekhar, S. 1960. A Comment on Dr Enke's Article. *Population Review* 4:52-54.

Demeny, Paul 1961. The Economics of Government Payments to Limit Population: A Comment. *Economic Development and Cultural Change* 9:641-644.

Dubey, Dinesh Chandra and Harvey M. Choldin. 1967. Communication and Diffusion of the IUCD: A Case Study in Urban India *Demography* 4:601-614.

Enke, Stephen. 1960a. The Gains to India from Population Control. Some Money Measures and Incentive Schemes. *Review of Economics and Statistics* 42:175-181.

———. 1960b. The Economics of Government Payments to Limit Population. *Economic Development and Cultural Change* 8:339-348.

———. 1960c. Government Bonuses for Smaller Families. *Population Review* 4:47-50.

———. 1961a. Some Reactions to Bonuses for Family Limitation. *Population Review* 5:33-39.

———. 1961b. A Rejoinder to Comments on the Superior Effectiveness of Vasectomy-Bonus Schemes. *Economic Development and Cultural Change* 9:645-647.

———. 1962. Some Misconceptions of Krueger and Sjaastad Regarding the Vasectomy-Bonus Plan to Reduce Births in Overpopulated and Poor Countries. *Economic Development and Cultural Change* 10:427-431.

———. 1966. The Economic Aspects of Slowing Population Growth. *Economic Journal* 76: 44-56.

Family Planning Division, Government of Pakistan. 1969. *Family Planning Scheme for Pakistan during the Fourth Five Year Plan Period, 1970-1975* Islamabad, Pakistan, report.

Finnigan, O. D. Forthcoming. Planning, Starting, and Operating an Educational Incentives Project. *Studies in Family Planning*.

- Freedman, Ronald. 1969. *Comments on Evaluation of the West Bengal Family Planning Program*. New Delhi: The Ford Foundation, discussion paper.
- International Planned Parenthood Federation. n.d. *Incentive Payments in Family Planning Programmes*. London: IPPF Working Paper 4.
- Kangas, Lenni W. 1970. Integrated Incentives for Fertility Control. *Science* 169:1278-1283.
- Kapoor, S. D. and A. S. Chandhoke. 1968. *Behavioral Characteristics of Camp and Non-Camp Vasectomized Clients. A Comparative Study*. New Delhi: Central Family Planning Institute, mimeo report.
- Krishnakumar, S. 1971. *Ernakulam District Janapperuppa Prathirodha Yajna (Crusade for Control of Population Growth): A Report on the Massive Vasectomy Camp at Ernakulam*. Cochin, India: Ernakulam District mimeo report.
- Krueger, Anne O. and Larry A. Sjaastad. 1962. Some Limitations of Enke's Economics of Population. *Economic Development and Cultural Change* 10:423-426.
- Lam, Peggy. 1968. Experiences in the Use of Communication Methods in Promoting Family Planning in Hongkong. In *Report of the Working Group on Communications Aspects of Family Planning Programmes and Selected Papers*. Bangkok: ECAFE, Asian Population Studies Series 3.
- Perkin, Gordon W. 1970. Non-Monetary Commodity Incentives in Family Planning Programs. A Preliminary Trial. *Studies in Family Planning* 57:12-15.
- Pillai, K. Mahadevan. 1970. Study of the Decision Process in Adopting Family Planning Methods: An Anthropological Approach. Gandhigram Institute of Rural Health and Family Planning, unpublished paper.
- Pohlman, Edward. 1971. Incentives and Compensations in Birth Planning *Carolina Population Center Monograph II*. Chapel Hill: University of North Carolina.
- Quddus, A. H. G. and others. 1969. The Unofficial Vasectomy Agent of East Pakistan. *Pakistan Journal of Family Planning* 3:17-26.
- Repetto, Robert. 1968. *Temporal Aspects of Indian Development*. Ph.D. thesis, Cambridge, Massachusetts: Harvard University.
- . 1969. India. A Case Study of the Madras Vasectomy Program. *Studies in Family Planning* 31:8-16.
- Research and Marketing Services. 1970. A Study on the Evaluation of the Effectiveness of the Tata Incentive Programme for Sterilization. Bombay, unpublished report.
- Ridker, Ronald G. 1969. Synopsis of a Proposal for a Family Planning Bond. *Studies in Family Planning* 43:11-16.
- . 1971. Savings Accounts for Family Planning: An Illustration from the Tea Estates of India. *Studies in Family Planning* 2 (7):150-152.
- Rogers, Everett M. 1962. *Diffusion of Innovations*. New York: Free Press of Glencoe.
- . 1971. *A Field Study of Family Planning Incentives and Field Staff in Indonesia*. Jakarta: Ford Foundation, mimeo report.
- Rogers, Everett M. and others. 1970. Diffusion of Innovations in Brazil, Nigeria, and India. *Diffusion of Innovations Research Report 24*. Lansing: Michigan State University, Department of Communications.
- Rogers, Everett M. and F. Floyd Shoemaker. 1971. *Communication of Innovations: A Cross-Cultural Approach*. New York: Free Press of Glencoe.
- Simon, Julian L. 1968. The Role of Bonuses and Persuasive Propaganda in the Reduction of Birth Rates. *Economic Development and Cultural Change* 16:404-411.
- . 1969. The Value of Avoided Births to Underdeveloped Countries. *Population Studies* 23:61-68.
- Spengler, Joseph. 1969. Population Problem: In Search of a Solution. *Science* 166:1234-1238.
- Srinivasan, K. and M. Kachirayan. 1968. Vasectomy Follow-Up Study: Findings and Implications. *Bulletin of the Gandhigram Institute of Rural Health and Family Planning* 3:12-32.
- Wajihuddin, Ahmad. 1971. Field Structures in Family Planning. *Studies in Family Planning* 2 (1):6-13.

"A Field Study of Family Planning Incentives and Field Staff In Indonesia"
by Everett M. Rogers and a field study committee, Indonesian Planned
Parenthood Association, September 1971

This field report is an analysis of sixteen existing incentive and field staff programs and projects in Indonesia. These projects cover a range of clinics by sponsorship (government-private), size and coverage, locale (rural-urban), and staffing.

The following recommendations were made regarding incentives to promote adoption:

- 1-1. Continue the national policy of diffuser incentives to field staff in order to promote the adoption of family planning methods.
- 1-2. Study the effects of increasing diffuser incentives to field staff from the current level of Rp. 200 per adopter motivated, to at least Rp. 300, and perhaps more, by field experiments on the effects of these different levels of incentive payments.
- 1-3. Study the effects of changes in the diffuser incentive to field staff so that in addition to motivating adopters, they are encouraged to follow-up on previous adopters, by field experiments on the effects of various incentive policies.
- 1-4. Discontinue all client disincentives for adopting family planning methods, such as clinic charges for contraceptive services.
- 1-5. Pay the consolidated incentive to clinics on a "per adopter" basis so as to more directly encourage higher adoption, and combine the consolidated incentive with the present clinic incentive (of Rp. 300) so as to simplify financial procedures.
- 1-6. Provide incentives to adopters of family planning methods on an experimental basis, in order to test the effect of this policy on the rate of adoption.

Among priority research areas the authors suggest that the main question with regard to incentives is: What is the ideal combination of incentive policies to maximize the rate of adoption of a family planning innovations? They recommend well designed and conducted experiments in randomly selected field locations.

72

RATIONALE FOR THE STUDY
(EXTRACT)

Some countries, like India and Pakistan, have years of experience with both incentives and with a variety of types of field staff, and with the effects of such policies on rates of adoption of family planning ideas. Because the government family planning program was initiated relatively recently in Indonesia, we yet lack a full knowledge base for final decisions about incentive policies and field staff policies. But the groundwork for obtaining such understandings is being presently laid by experimental trials of incentive and field staff schemes that are currently underway in Java and Bali.

The problem is that such field tests can only contribute to helping government decision-makers if the results of these trials are described, analyzed, compared and interpreted in a careful and consistent way. Presently, several novel researches are underway on incentives and on field staff, but it is unlikely that the results will completely "add up" by the time for a government decision about such matters as incentives and field staff. Some of these researchers, and most local family planning officials, are not fully aware of each other's work.

In fact, it is largely accidental that such a variety of incentives and field staff schemes are presently underway in Indonesia. Most occurred as a result of spontaneous factors; the schemes were designed by local officials who followed rather general guidelines from central government about the specifics of how to set up an incentive scheme or a field staff program. Fortunately, the great variety of such designs currently underway in Indonesia offers an unplanned opportunity for (1) systematically arriving at an optimum design or designs for Indonesia, and (2) for contributing toward a fuller understanding of client motivations for family planning decisions.

The importance of both field staff and incentives in the family planning program of Indonesia is obvious. Both are methods of stimulating interpersonal communication about family planning ideas. And we know that such word-of-mouth channels are most important in the diffusion of new ideas. The incentives are paid to field staff on a piece-rate basis for each woman successfully motivated to adopt IUD or pills. The field staff are employed to contact clients in order to convince them to adopt family planning methods.

These two items (incentives and field staff) probably will represent two of the largest costs in the family planning budget for Indonesia for at least the next five years. In India and Pakistan, two nations with five to seven more years of experience with family planning than Indonesia, salary costs for family planning field staff are the largest budget item, and incentives are probably second (constituting about 21 to 25 percent of the total budget). In Indonesia, the cost of the field worker program is about 10 percent of the 1971-72 DIP (fiscal) year budget, and incentives are 7 per cent. Both items will increase in the 1972-73 budget. It is likely that family planning will represent the largest government employer, after the armed forces, by the time that current plans for the next five years are fully implemented in Indonesia.

BACKGROUND OF INCENTIVES IN INDONESIA

Government incentives for family planning were initiated officially by the BKKBN in the early fall of 1970, and increased from Rp. 300 to Rp. 500 per IUD and pill adopter in April, 1971. A wide variety of types of incentives are offered by local family planning programs in Indonesia. For example:

1. A state-owned textile factory in Bandung pays a rice ration and a 2 percent salary increment for each additional child until after the third child is born. At the birth of the third child, the factory worker is encouraged by the factory medical doctor to bring his wife to the clinic for IUD or pills. This incentive policy was initiated in all state-owned textile mills about two years ago, and it appears the number of fourth (or more) children has since decreased.
2. Projek Keluarga Berentjana, D.C.I. Djakarta: Rp. 300 to the individual motivating each IUD or pill adoption. In the case of oral contraceptives, the motivator is paid in three monthly installments of Rp. 100 each for follow-up contact with the adopter. Most of the recipients of incentives are full-time field workers.
3. Bangil Clinic, East Java: Rp. 100 to any clinic staff member for each IUD or pill adopter motivated, with Rp. 50 paid at the time of adoption and Rp. 50 after 5 cases have been motivated by one individual.
4. Modjosari Clinic, East Java: Rp. 300 to dukuns (indigenous midwives) or other individuals who motivate an IUD or pill adopter, with Rp. 100 paid at the time of adoption and Rp. 100 each month for follow-up contact with the adopter.
5. Provincial IPPA Demonstration Clinic, Bandung: Rp. 100 paid to the individuals motivating each IUD or pill adopter, who are mostly dukuns or field workers.

This great variety of incentive schemes is increased even further if one looks at the reality of incentive policies, rather than just at their official statement. For instance, in Modjosari Clinic, about 40 percent of the 528 adoptions per month are motivated by non-clinic staff; some of these motivators are actually husbands of the women who adopt pills or IUD, so an adopter incentive* is thus paid to the family,

* As distinguished from a "diffuser" incentive, which is paid to the field staff who motivate the client to adopt.

although officially it is considered a diffuser incentive to the motivator. Further, in the case of the 60 percent of the cases motivated by the dukuns, the motivator's fee of Rp. 300 is unofficially split with the adopter (about Rp. 30 is paid by the dukun to the adopter in cash or kind). Hence, we see that adopter incentives are being paid in Indonesia, even though such payments do not officially exist. At many clinics, adopters are paid an incentive of 50 to Rp. 100 as a transportation fee.

The data just cited suggest an approach for determining the best combination of incentive and field staff policies to maximize their effects on adoption, so as to attain a least-cost-per-adoption policy. The analysis described in the present report was designed to investigate the effects of the variety of incentive policies on the adoption of family planning methods. Should the size of diffuser incentives be increased, to achieve more adopters per field staffer? Should it be officially recognized that adopter incentives are being paid? How large should these adopter incentives be to maximize rates of adoption? What family planning disincentives presently exist, and how can they be removed? We seek to provide answers to each of these questions in the present report.

The field study reported in the present publication has four objectives: (1) to describe and analyze 16 hopefully typical local incentive and field staff schemes in Indonesia, in order to determine their relative effects on the adoption of family planning methods, (2) to interpret these data and to recommend possible policies for incentives and field staff, (3) to study the effects of organizational patterns on field staff performance, and (4) to suggest future research on these topics that could lead to a more effective family planning program in Indonesia.

The data were gathered by a field team of several investigators that traveled to 16 family clinics in five of the six provinces of Java and Bali. The clinic programs that were studied represent a range in clinic utilizer (as indicated by the numbers of adopters per month), and a variety of government and private sponsorships, urban and rural locales, and types of field staff. Further detail on our study team, clinic selection, variables investigated, and the nature of the clinic programs studied, are provided in the Appendix.

Incentives to Promote Adoption

Incentives are objects of financial value given by an organization to an individual, couple, or group, in order to encourage some overt behavioral change. Family planning incentives are objects of financial value given by a family planning agency to encourage the adoption of family planning methods. There are basically two types of incentives: (1) adopter incentives, which are paid to individuals or groups for adopting a family planning method, and (2) diffuser incentives, which are paid to one individual for motivating another individual to adopt a family planning method. In Indonesia, a diffuser

incentive of Rp. 300 for each adopter of IUD or pills was initiated in 1970; Rp. 100-150 of this amount was paid to the field staffer who motivate the adopter, and Rp. 100-150 was paid to the clinic. In April, 1971, the total incentive was raised to Rp. 500, and the BKKBN required that Rp. 200 of this should go to the field staffer, and Rp. 300 to the clinic.

Such incentives are particularly appropriate in the Indonesian family planning program because of the novel nature of the program's organizational structure. The BKKBN, as its name (Badan Koordinasi Keluarga Berentjana Nasional) indicates, is a coordinating agency; it has little direct control over government employees at the local community level who actually carry out the program. They are employees of the Ministry of Health, the Ministry of Information, etc. But through the payments of diffuser incentives, the BKKBN can (and does) exert considerable influence on the day-to-day activities of those local employees of various ministries.

In the fall of 1970, and in April, 1971, the BKKBN had to make strategic decisions about diffuser incentives, with only an assumption about what results such policies might cause. Now it is time to ask: What effects have Indonesian incentive policies had on the adoption of family planning methods?

The answer is provided in the following section.

Recommendation I-1: Continue the national policy of diffuser incentives to field staff in order to promote the adoption of family planning methods.

Enough time has now elapsed since the initiation of the diffuser incentive of Rp. 100 to 150 per adopter of IUD or pills in the fall of 1970, and since the increase and standardization of this incentive at Rp. 200 in April, 1971, to determine the effects of this incentive. We conclude that this diffuser incentive has had a very major effect on adoption rates. It has had direct effect in motivating MCH clinic staff (1) to become more interested in family planning activities, and (2) to emphasize client contact in the field in order to motivate the adoption of IUD and pills.

We present evidence for our conclusion about the effect of the diffuser incentives (1) in Figure 6 for Klinik Bangil in East Java, (2) in Figure 7 for the Province of Bali. Both programs showed a sharp jumps in adoption rates when diffuser incentives were begun (and also in the case of Bali, when these incentives were increased in size). We selected these data because they show the effect of incentives fairly independent of the effect of employing field workers; Bangkil Clinic uses clinic bidans almost entirely as field staff, and full-time, salaried field workers were not been employed in Bali until August, 1971.

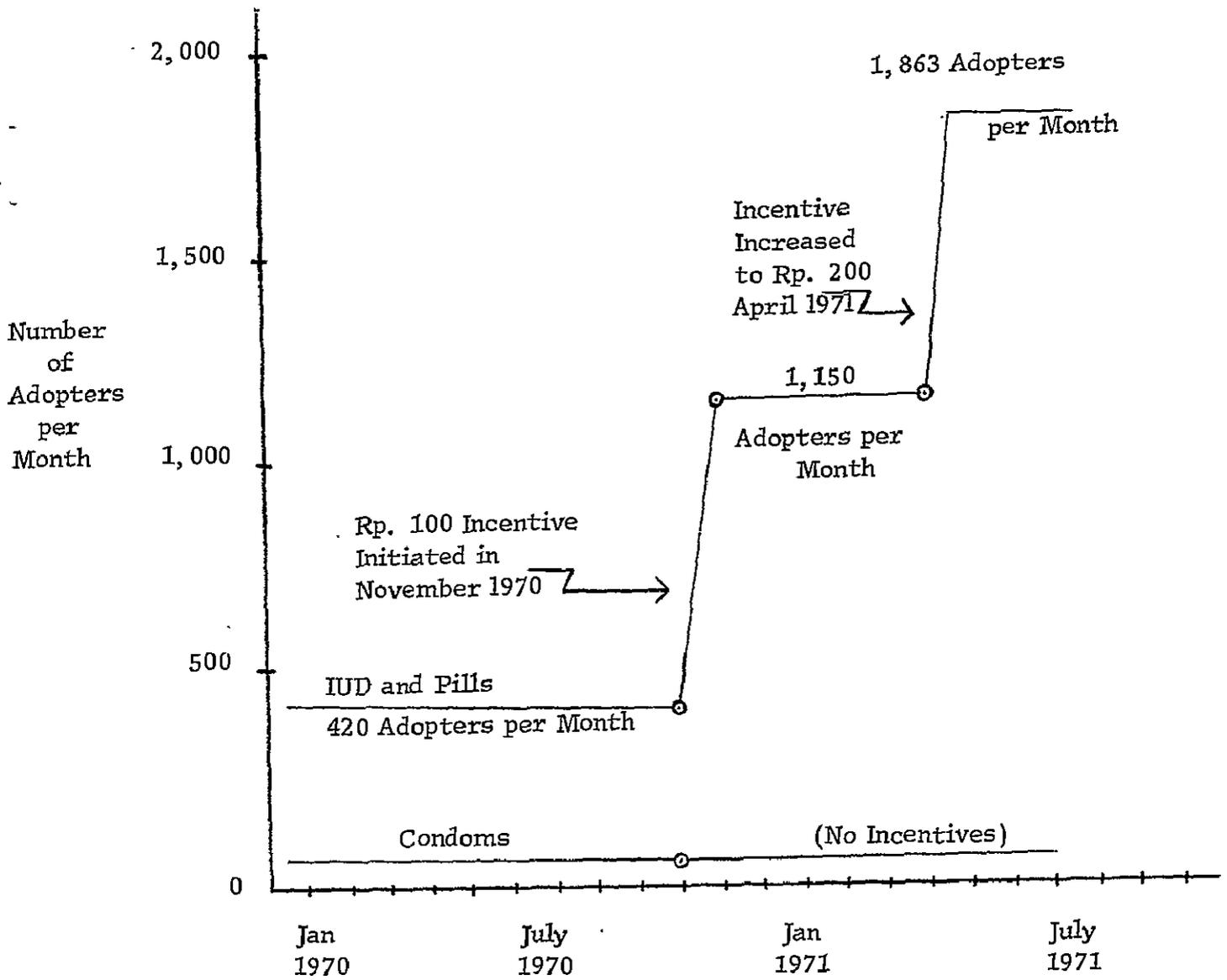


Figure 7. Effect of Paying a Diffuser Incentive on the Adoption of IUD and Pills for the Province of Bali.

The rate of adoption of IUD and Pills approximately tripled after November, 1970, when a Rp. 100 diffuser incentive to individuals (mostly bidans and nurses) motivating clients, was initiated. Then, on April 1, 1971, this incentive was increased to Rp. 200, and the number of adopters per month jumped to an average of 1,863 (a 62 percent increase). Full-time field workers only began to be employed in Bali in July 1971, and on a very limited basis to date, so their effect on the number of adopters cannot yet be determined.

adoption of family planning, and they should be accompanied by an intensive, follow-up campaign of information, education and communication.

Several things more should be said concerning this line of argument. First, it is quite true that this type of reasoning does fly in the face of widely accepted beliefs concerning strategies for family planning. Many administrators believe that campaigns aimed at changes in knowledge, coupled with campaigns aimed at changes in attitudes, will result in change of behavior. One can grant that increased information, education and communication will lead to changes in knowledge. But there is no solid support for the beliefs that (a) changes in knowledge necessarily lead to changes in attitudes, or that (b) changes in attitudes necessarily lead to changes in behavior. Those who put forward such views are projecting onto the target population a cognitive and affective consistency which they themselves do not possess. What often happens is that their logical analysis of the problem leads them to a naive rationalism, a belief that the problem exists in reality the same way the problem exists in an analytical framework; it is a fallacy of reification.

Secondly, the reasoning presented here and the strategy derived from it do not denigrate the role of motivational campaigns (information, education and communication). Incentives appear to succeed by associating the behavior change with something which is highly valued, something of financial worth. Most good motivational campaigns pursue exactly this strategy of associating an innovation with existing values, e.g., if you have fewer children you can provide better for the ones you already have. In fact, the line between incentives and other kinds of persuasive devices can become extremely blurred. Advertising promises benefits of financial value for purchasing such-and-such a product (Volkswagens cost less, run more economically, etc.). Formal use of incentives is even a common occurrence in persuasive advertising campaigns; "green stamps" in grocery stores, filling stations and other establishments is one good example, and another is the "buy one, get one free" campaign.

In fact, the line between incentives payments and "good motivational campaigns" is so blurred as to make distinction often difficult. Opponents of incentives schemes will label as "bribe" the giving of a brightly colored sari to the Indian woman who adopts the IUD; they do not accuse their wives of taking bribes when they accept a free pair of pantyhose for buying a new product in the supermarket. Most incentives schemes proposed in family planning fall within this blurred area. The financial inducement is seldom so large as to be coercive in any genuine sense.

There are some real ethical difficulties surrounding incentives. The situation is conceivable in which incentives may be morally coercive; that is, when the financial inducement is so large, vis-a-vis the social situation of the target population, that no potential client can easily resist giving in. So far, no clear-cut case has appeared in the literature.*

*-The closest to date is probably the Massive Family Welfare Festival in Ernakulum District, Kerala State, India, in July, 1971. Male vasectomy acceptors, 80% of whom had monthly income less than Rs.100, received Rs.45.10 in cash, a week's free ration for his family, a CARE gift kit containing 3 kgs of rice, one sari and one dhoti, a lottery ticket, free food at the campsite, free transportation to and from the camp and free medication and operation.

The response to this program was little short of colossal: where 15,000 had been the target, the final 30-day figure was 63,418. However, it is difficult to say that the incentives were the principal cause for this large number, since the organization and administration of the festival was so thorough and masterful that the primary cause for success is probably the skillful organization.

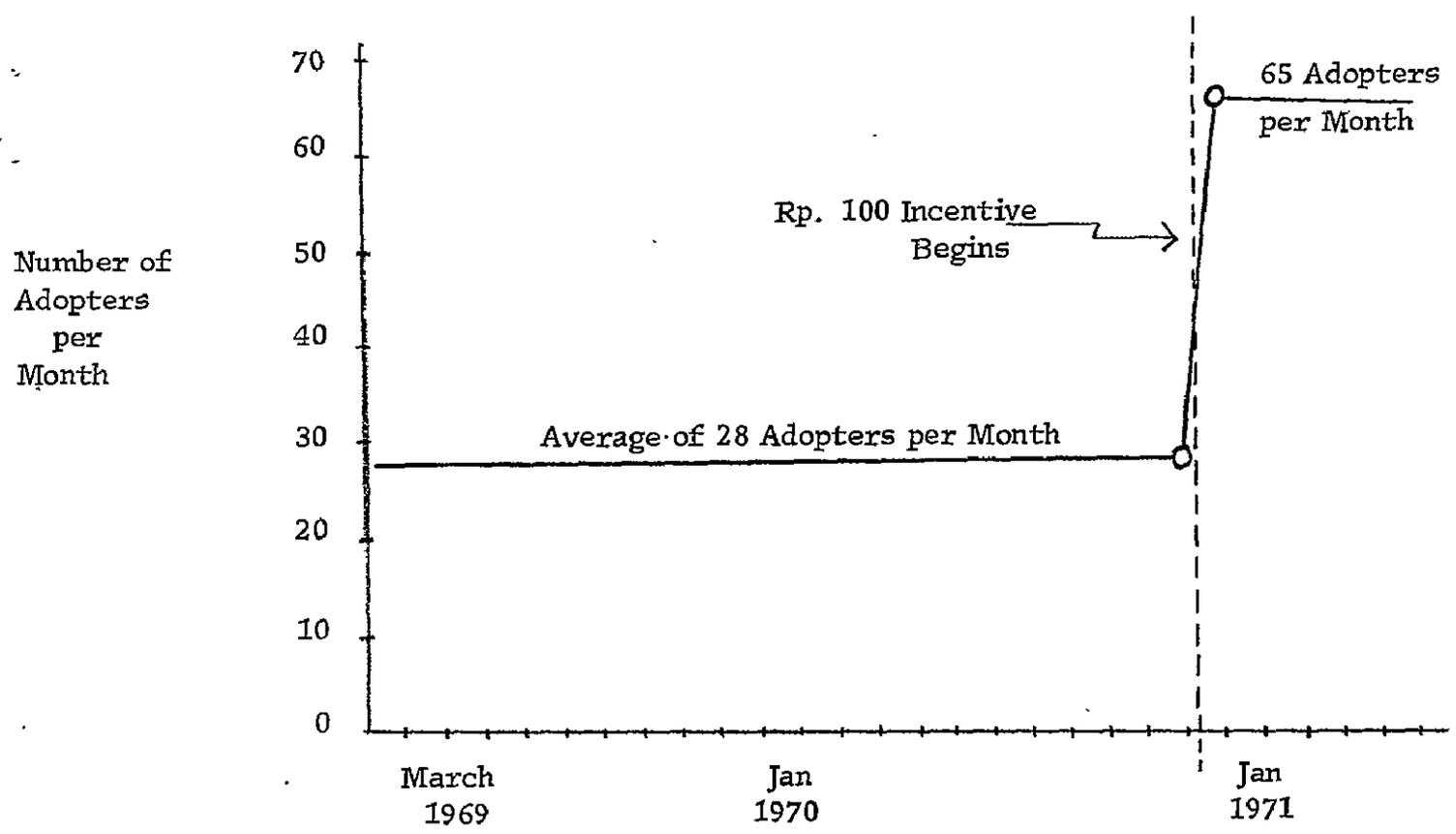


Figure 6. Effect of Paying a Diffuser Incentive on the Adoption of IUD and Pills at Bangil Clinic, East Java.

An incentive of Rp. 100 per adopter of IUD or Pills was initiated by Bangil Clinic in November, 1971. The incentives were paid to regular clinic staff, mostly bidans, for field work in motivating adopters. The result: Approximately a doubling of the number of adoptions per month, from 28 to 65.

Of course there are other (in addition to an increased number of adoptions) possible consequences of the diffuser incentive for IUD and pills, that may not be entirely positive. For example, the emphasis by MCH clinics on family planning activities may have lead to a partial neglect of these clinics' MCH responsibilities. IUD and pills have certainly been emphasized at the neglect of condoms and other non-clinic methods.* Further, the payment of the diffuser incentives acts as a strong reward system to encourage the sole goal of new acceptors, often at the risk of discouraging adequate follow-up of previous adopters. So the present diffuser incentive may increase the quantity of adopters while decreasing their "quality"**. But this problem is not a necessary consequence of the diffuser incentive, which can be redesigned to also encourage quality, as we shall explain in a later section of this report.

Recommendation I-2: Study the effects of increasing diffuser incentives to field staff from the current level of Rp. 200 per adopter motivated, to at least Rp. 300, and perhaps more, by field experiments on the effects of these different levels of incentive payments.

If one of the main purposes of field staff is to motivate increased numbers of adopters, the reward system for field staff should be structured so as to maximize this goal. Specifically, we urge an increase in the present size of diffuser incentives, at least on a provisional basis until field experiments on larger incentives are completed.

Presently, an incentive of Rp. 500 per adopter from the BKKBN is divided in two parts:

1. Rp. 200 are paid to the field worker, dukun, bidan, volunteer, or motivator who influences the adopter to come to the clinic.

2. Rp. 300 are paid to the clinic for its operating costs, such as medicines, special equipment, IUD complications costs, etc., and perhaps including a salary supplement for the bidans and other clinic staff.

* For the period from April to June, 1971, only 2.7 per cent of the 68,780 family planning adopters in Java and Bali adopted condoms.

** "Quality" in the sense that adopters are not followed up, that the best possible job of insertion is not always performed, etc.

Unfortunately, the Rp.300 do not contribute directly to increasing the degree of client contact. Instead, it encourages clinic under-utilization. Perhaps the Rp.500 fee from BKKBN should be divided differently, so that Rp.300 goes to the individual motivating each adopter and Rp.200 for clinic operation. Or perhaps all Rp.500 should be paid to the field staff. An additional advantage of this procedure is that it could be effected immediately without affecting the national BKKBN budget, while an increase in the total diffuser incentive (of Rp.500) to perhaps Rp.600 or more, could not begin until the new DIP year (April, 1972).

The most appropriate level of diffuser incentives should be decided on the basis of experimentation and trial, prior to a final decision on higher diffuser incentives for field staff. The formation of any type of policy consists of five sequential steps:

1. Monitoring and evaluation performance relative to an existing policy.
2. Identify problems with existing policy.
3. Propose new alternatives to present policy.
4. Test the effectiveness of these alternatives.
5. Implement the best alternative, and monitor its performance.

We feel confident that our proposed alternative (Step 3) is advantageous over existing policy, yet the effect of different levels of higher incentives should be tested (Step 4), prior to their adoption. Otherwise, the exact effects of higher diffuser incentives cannot be known. And perhaps unexpected problems may arise from the new alternative. The only way to find out these matters is through field experiments.

At present a field worker in D.C.I. Djakarta receives a base salary of Rp.5,000 per month plus the Rp.200 incentive per adopter (amounting to Rp.1,600 for the field worker who attains his target of 8 adopters). Elsewhere in Java and Bali, a field worker earns Rp.2,500 per month plus Rp.1,600 in incentives (for 8 adopters per month). The national base salary of Rp.2,500 may be raised to Rp.3,500 in the next DIP year.

We argue that the base salary for field workers should be kept as low as possible, and the incentive-based salary increased. This reward system encourages performance. It acts to discourage field worker candidates who are not highly motivated to achieve a large number of adopters. It also discourages field workers from continuing in this position if they are not motivating sufficient numbers of acceptors.*

* When field workers were first employed in West Java and East Java on a demonstration basis by the IPPA, their contract called for them to be terminated if they did not achieve an average of 8 adopters per month for the first 3 months of employment. When the BKKBN took over the field worker approach in April, 1970, this termination clause was not continued. We feel it is a wise procedure, and urge that it be re-instituted as a

When they resign, they can be replaced by more effective field workers.

Presently, the BKKBN has established field worker selection criteria for age, education, residence, and marital status, and these criteria seem quite likely to contribute to high performance in motivating adopters. But we must acknowledge that much of the variance in field worker performance cannot be explained by these variables, or even by other, possibly more important, social-psychological variables that are more difficult to measure (like personal commitment to the concept of family planning, extrovertism, etc.)*.

The beauty of an incentive-reward system is that it encourages potentially successful field workers to "select themselves". Those individuals who seek the position feel they can excel in a system where their income depends mostly on how many adopters per month they can secure. And this, of course, is the simplest and most effective selection procedure that can be devised. It maximizes results.

An increase in diffuser incentives from Rp.200 to 300 (or more) might also be important for the performance of dukuns and volunteers. New parents usually pay dukuns Rp.300 to 500 in cash or in kind (for example, as rice or chickens) for each baby delivered. Why should a dukun motivate a woman to adopt the IUD or pill, for which dukun receives Rp.200, when that dukun would receive a larger payment if the woman had another baby? In the local family planning programs where dukuns now motivate a sizeable number of adopters (like Klinik Temanggung in Central Java, and in Klinik Modjosari in East Java), their motivation stems mostly from an influential clinic bidan who closely supervises their MCH work, and only incidentally from the Rp.200 incentive**. As a result, most untrained dukuns do not motivate any adopters. And the great majority of dukuns in Indonesia are untrained, and have no regular contact with a clinic bidan. Further, only about 10 per cent of the trained dukuns have regular weekly contact with the clinic bidan.

* This statement is not intended to imply that we could not learn more about relative differences in field worker performance through a thorough investigation with an adequate sample. Such an inquiry is planned by the BKKBN Bureau of Research and Evaluation in 1972.

** In fact the diffuser incentive has not been paid on Klinik Temanggung, since March, 1971, because the clinic staff have not sent the necessary financial forms to BKKBN. But even when the Rp.200 incentive was not paid, the trained dukuns continued to motivate adopter. The untrained dukuns, of course, did not.

Clearly, if dukuns are to become an important force in motivating adopters, their diffuser incentive should be raised to at least Rp.300 per adopter, so they do not feel they are "losing money" (in an opportunity sense) by promoting family planning.

Recommendation I-3: Study the effects of changes in the diffuser incentive to field staff so that in addition to motivating adopters, they are encouraged to follow-up on previous adopters, by field experiments on the effects of various incentive policies.

We have grave fears about the immediate future of the Indonesian family planning program which already may be showing some early warning signs of a setback from a mushrooming discontinuance rate, caused in part by rumors about side-effects of IUD and pills. In country after country, throughout Asia, a similar pattern has emerged in recent years. An early and encouraging increase in the number of adopters, followed shortly by a plateau in the rate of adoption, and then a sharp drop*. In a later section of the present report, we discuss more fully the nature of our concern about the disaster that may lie ahead for Indonesia's family planning program, due to side-effects rumors and the resulting discontinuances.

A first step in preventing discontinuances in Indonesia is a thorough understanding of discontinuance behavior by clients. Research is needed to determine the actual rates of discontinuance of IUD and pills in Indonesia. Why do these discontinuances occur? How soon do they occur after adoption? In other Asian countries, researches indicate that most discontinuances occur in the first months of use, and that this period is when follow-up visits by field staff (to prevent discontinuances) should be concentrated. What effects on discontinuance rates in Indonesia occur because clinic staff will only sell a one month's supply of pills to adopters, necessitating a return by the client each month to the clinic? How can the clinic staff provide better patient care (for example, some clinics give iron pills to anemic women to prevent excessive bleeding from the IUD) so as to decrease the side-effects of adoption, and hence contribute to fewer discontinuances. These and other questions about discontinuances need research attention but efforts to prevent discontinuances must be launched at once.

* As was aptly pointed out: "The problem with the IUD in India has not been getting it inserted, but keeping it in place" - (Edward Pohlman (1971), Incentives and Compensations in Birth Planning, Chapel Hill, North Carolina, Carolina Population Center Monograph p. 19).

Effective follow-up of IUD and pill adopters is one of the most important approaches to fighting negative rumors, and to preventing a rise in discontinuance rates*. Until now, not enough emphasis in Indonesia has been placed on follow-up activities by field staff. This is due (1) to a shortage of field staff, as stressed previously, and (2) to an over-concern with securing initial adoptions**. The present incentive reward system encourages adoption at the expense of follow-up. Alternatives are possible. For instance, in Korea today field workers earn incentives for continued adoption, rather than just for initial adoption ***. The field worker incentive scheme in Pakistan now rewards births-prevented (that is, non-pregnancy of the client audience) rather than simply initial adoption. Client incentive schemes (of adopter incentives) that reward non-pregnancy over a number of years for a couple are under experimental test (1) in selected villages in Taiwan, and (2) among tea estates employees in South India. These schemes should be investigated with a view to their possible applicability in Indonesia. However, most rest on the assumption of an accurate system for reporting births. Such does not presently exist in Java and Bali, and years would be required to construct such a system, reaching ultimately to every Indonesian parent.

* One of the studies supporting this assertion was conducted by Dr. Sethu of the Gandhigram Institute for Family Planning and Rural Hygiene, India. He found a one-year discontinuance rate for IUD of 7 per cent in a village in which follow-up was done, and an alarming 88 per cent discontinuance in a village with no follow-up. Although the sample size was very small, Dr. Sethu's findings are suggestive of a serious problem in Indonesia today.

** Instead of using the number of adopters as our main indicant of success, we urge current-use figures for each contraceptive method. It is more important for an individual to know how much money he has in the bank, than just to know how large his deposits are.

*** Each field worker in Korea must recruit and keep 15 new pill adopter per month to build up to 180 users. For every discontinuance, a replacement must be found.

More feasible under Indonesian condition is to extend the present diffusion incentive (for adoption) so that it also rewards follow-up*. For instance, in addition to the diffuser incentive for adoption (of Rp.200, which we previously urged should be raised to at least Rp.300 per adopter), each field worker might be paid Rp.50 for each of four follow-up contacts with an adopter. The first follow-up should be about two weeks after adoption, the second a month after adoption, the third three months after adoption, and the last follow-up six months after adoption. This schedule concentrates the follow-up contact in the early months after initial adoption, when research studies show that most discontinuance occur.

As many as possible of the follow-up contacts should occur in the same clinic where the pills or IUD were adopted; we estimate that perhaps 20 to 30 per cent of all adopters could be encouraged to return to the clinic by the clinic staff. A further 40 to 50 per cent could be motivated to travel to the clinic by field workers, especially if transportation were provided. The remaining 20 to 40 per cent of adopters cannot be motivated to return to the clinic; they should be contacted by field workers via home visits. A screening check-list on IUD or pill side-effects and other complications might be used by the field workers (something like the pre-adoption clinic checklist for pill clients currently in use by bidans in Indonesia) to determine whether a home visit by the clinic bidan or doctor is necessary. Home visit follow-ups by field workers could be checked on a sample basis by their supervisors to insure against false reporting.

Thus the main responsibility for follow-up is placed on the field worker, rather than other field staff who are too occupied otherwise (like bidans**), or not as controllable (like motivators, volunteers, or dukuns.)

At present we estimate that only 5 to 10 per cent of IUD and pill adopters are ever followed-up. Why should field staff follow-up previous adopters, when the present reward system pressures them not to, for the sake of obtaining new adopters? Until the reward system is changed to incorporate a diffuser incentive for follow-up, we can expect little more than a very spotty kind of follow-up. And this situation places the national family planning program in a precarious position, one that invites disaster.

Recommendation I-4: Discontinue all client disincentives for adopting family planning methods, such as clinic charges for contraceptive services.

* Unfortunately, bidans are officially responsible for all follow-up with clients at the present time; this may be one reason why so little follow-up occurs.

** Nor is it received by doctors and bidans with a private practice, where client charges are, of course, made.

Until the past year, most family planning clinics charged their clients for providing contraceptive services. Presently, all government and military clinics receive a monthly "konsolidasi" of at least Rp.5,000 per month from the BKKBN to replace the former income from client charges. Private clinics, however, do not yet receive this kondolidasi* and use a schedule of client charges approximately as follows:

Rp.50 for each clinic visit.

Rp.150 for IUD insertion.

Rp. 50 for each IUD follow-up.

Rp.100 for each cycle of pills.

No charges for condoms.

These charges discourage (1) adoption, and (2) follow-up visits to clinics. The charges should be discontinued as soon as possible, and the clinic income replaced by the konsolidasi. In a later recommendation (II-4), we urge the creation of family planning inspectors in Indonesia; they could check on client charges, and help prevent them.

Both private clinics, and some government clinics, charge for each cycle of pills. These charges should be discontinued, and replaced as a source of clinic income. The effect of a disincentive of Rp.50 for each monthly cycle of oral contraceptives, the usual charges (if any is made) in a government clinic, may be considerable for a low-income woman. Some clinics with financial shortages feel justified in charging Rp.100 or even Rp.150 for a monthly cycle. As we pointed out elsewhere in this report, clinic under-utilization is basic to the relatively low-cost-efficiency facing the family planning program in Indonesia. The solution is to achieve more adopters per clinic. And clinic charges for pills, disincentive, act to discourage potential adopters.

All government employees in Indonesia receive a 2 per cent salary increment, and an additional rice ration, for each child that is born, plus free maternity and hospital service. This birth-incentive policy, created before Indonesia adopted a national family planning stand, is strongly pro-natalistic. It is as if the government of Indonesia were seeking to undo with its left hand, what it is trying to do with its right hand. The President of Indonesia in August, 1971, called for modification in this pro-natalistic policy, so that the present child benefits would only be awarded for the first three children. Thereafter, the cost of raising added children should act as one type of incentive encouraging family planning. In the case of the state-owned spinning factory near Bandung, mentioned previously, the number of fourth (or more) births seemed to decrease when the child benefit policy was limited to three children.

* Nor is it received by doctors and bidans with a private practice, where client charges are, of course, made

At present the unlimited child benefit policy for government employees acts as a disincentive for family planning. It should be changed at once.

Recommendation I-5: Pay the consolidasi incentive to clinics on a "per-adopter" basis so as to more directly encourage higher adoption, and combine the consolidasi with the present clinic incentive (of Rp.300) so as to simplify financial procedures.

Clinics, like field staff, can be motivated to achieve a higher number of adopters by incentives. Unfortunately, the consolidasi incentive does not presently act to motivate higher adoption. For instance, the same consolidasi of Rp. 5,000 per month* was paid to one clinic that had zero acceptors in 1970, as to another that had 50 acceptors per month. The consolidasi of Rp.7,500 per month was paid to clinic that achieved 53 adopters, and to another clinic that gained 263 adopters per month.

We urge that the consolidasi be altered so that the level of clinic incentive payments rests directly on the number of acceptors achieved per month**. If the typical clinic now averages 8 adopters per month, the clinic incentive should be paid as about Rp.600 per adopter***.

Clinics presently also receive Rp.300 per adopter (as part of the diffuser incentive of Rp.500 per adopter). The two clinic incentives should be combined, so that a clinic receives a total of about Rp.900 per adopter.

* Typically, the consolidasi of Rp.5,000 is allocated as follows:

- Rp.3,000 to the doctor.
- Rp.2,000 to the bidan.
- Rp.1,500 to the ANM.
- Rp. 500 to the clinic clerk.

** A policy approaching this one is now underway in D. C. I. Djakarta, where a consolidasi of Rp.5,000 is paid for 0 to 5 adopters per clinic per month, Rp.5,750 for 6 to 15 adopters, Rp.7,750 for 16 to 50 adopters and Rp. 10,250 for more than 51 adopters.

*** Which would not be paid to a clinic unless BKKBN Pusat had received its monthly report on the number of adopters. Only about 85 per cent of the clinics in Java and Bali are presently reporting to BKKBN Pusat.

Recommendation I-6: Provide incentives to adopters of family planning methods on an experimental basis, in order to test the effect of this policy on the rate of adoption.

Of nine countries (India, Pakistan, U.A.R., Taiwan, Korea, Turkey, Mauritius, Ghana and Indonesia) currently offering family planning incentives, Indonesia is one of two countries that does not officially pay an adopter incentives to encourage the acceptance of family planning methods. There is evidence in these other nations that adopter incentives (as well as diffuser incentives, which are paid to family planning field staff to encourage the recruitment of adopters) lead to increased acceptance.

Unofficially, adopter incentives are currently paid in Indonesia. For instance, many clinics use from Rp.50 to 75 (of the Rp.500 diffuser incentive) to pay bus or betja fees to transport potential adopters to their clinic. Klinik Matraman in D.C.I. Djakarta gives 6 towels (worth Rp.200) to each post-partum adopter, which encourages acceptance*.

We urge that an adopter incentive of several hundred rupiah be offered on an experimental basis to test its effects on adoption rates. Such a field experiment has recently been proposed by Dr. Suleiman, former World Bank advisor in Indonesia, to the BKKBN. The study is proposed to be conducted in Madura, said to be one of the areas of greatest fanatical religious resistance to family planning. We think that the experiment might be more valuable if it were also conducted elsewhere in Java, in a more typical locale.



* As does a diffuser incentive of Rp.50 per adopter to bidans and nurses for bedside motivation efforts, paid with funds from the Population Council.

NEEDED RESEARCH

1. Field Experiments on Incentive Effects

Of central importance are questions about the effects of various types of incentives. In a broad sense, the main question needing answer is: What is the ideal combination of incentive policies (for example, larger diffuser incentives, a follow-up diffuser incentive, an adopter incentive) to maximize the rate of adoption of a family planning innovation? We are yet far from an answer, but it certainly can be found through a series of well-designed and conducted field experiments (in which various types of incentives are tried). When a large share of the national family planning budget is allocated to incentive payments, that is scheduled to increase further in future years, investigations on how to maximize incentive effectiveness are badly needed.

A field experiment is an experiment conducted in the field rather than the laboratory. First, a survey is taken of the selected sample; in the case of a field experiment on incentives, this might be 10 to 20 villages in which the prior rate of adoption of contraceptives is determined. Then, the experimental "treatment" (a particular level or type of incentive) is randomly assigned to certain of these villages (the treatment villages) and not to others (the control villages). After some time, perhaps a year, a re-survey is conducted to determine the effects of the incentive; the difference in levels of adoption in the two sets of villages provides an indication of the incentive's effect.

Specifically, the following types of changes in incentive policies have been previously suggested in our recommendations section, and need to be tested in field experiments, or else in one large multivariate experimental design.

1. An increase in the diffuser incentive from Rp.200 to Rp.300 (or more) per adopter (Recommendation I-2).
2. A diffuser incentive for follow-up (Recommendation I-3).
3. An adopter incentive (Recommendation I-6).
4. A community (Recommendation III-2).

"Use of the Agent System in Seoul"
E. Hyock Kwon, Studies in Family
Planning, Vol. 2, No. 11, November 1971

A variety of simple adopter and diffuser incentive approaches have been tried in Korea and elsewhere in Asia. One system which was implemented in Seoul paid referral fees of between 11 and 19 U. S. cents to informal agents in seven different categories: housewife with an IUD, housewife who had never worn an IUD, neighborhood leader, druggist, beautician, midwife, church deaconess. The system was noted for its administrative simplicity, wide coverage, and its ability to penetrate informal networks of communication. Because fees were paid only for referral, the program had no fixed costs and therefore serves as an example of a system that uses only incentives rather than salary plus incentives.

Because the number of agents and incentive amounts were varied over the study period, this experiment provides some indication of the differential effect of higher and lower incentive payments. The average agent, however, referred 14 IUD acceptors per month with amazingly little variation by category of agent.

Most significant in this program is the fact that the agent system uses modest resources: a part time obligation of the project director, supervision, financial management, and statistical analysis. The "payment for results" feature meant that each acceptor cost 70 won, if no acceptors were recruited no money was spent, and the large field "staff" of agents could be "fired" at any time with no continuing obligation on the part of the program.

Studies in Family Planning

A PUBLICATION OF
THE
POPULATION
COUNCIL

Volume 2, Number 11

November 1971

Use of the Agent System in Seoul

THE FOLLOWING paper by E Hyock Kwon, M.D., Director of the Urban Population Studies Center of the College of Medicine at Seoul National University, describes an agent system for recruiting IUD acceptors and evaluates the first nine months of the program. The author conducted the study with the assistance of Dr. Kil Won Kang and Soon Young Park, research fellows at the Center, under the auspices of the Ministry of Health and Social Affairs, Seoul City, and The Population Council.

In Seoul, 28 percent (10,667) of all IUD acceptors from early January to 15 September 1967 were referred by agents receiving 30-50 won (11-19 US cents) per acceptor. This system has been administratively simple, has attained wide coverage of the city, has penetrated informal networks of communication, and has had no fixed costs.¹

How the Program Worked

The program was administered by the College of Medicine and the School of Public Health of Seoul National University. Health educators in seven of the city's nine district (Gu) health centers were instructed to recruit agents. Each health educator was permitted to find three agents of each of the seven types listed below, or up to 21 agents total, and each agent was permitted within the budget to recruit an unlimited number of acceptors per month. For each acceptor, the agent received 50 won (later reduced to 30 won) and the health educator received 20 won. A simple three-part coupon traced each acceptor from contact to insertion.

¹ Bernard Berelson, "National Family Planning Programs: Where We Stand," *Fertility and Family Planning: A World View*, Behrman, Corsa, and Freedman, eds. (University of Michigan, 1969), pp 341-387.

The Agents

It was in the health educator's interest to find agents who would be effective in talking with women about the loop. The health educators met about once a month with their agents to answer questions the agents encountered about such problems as side-effects and to offer constant guidance. The types of agents and the way they worked are as follows:

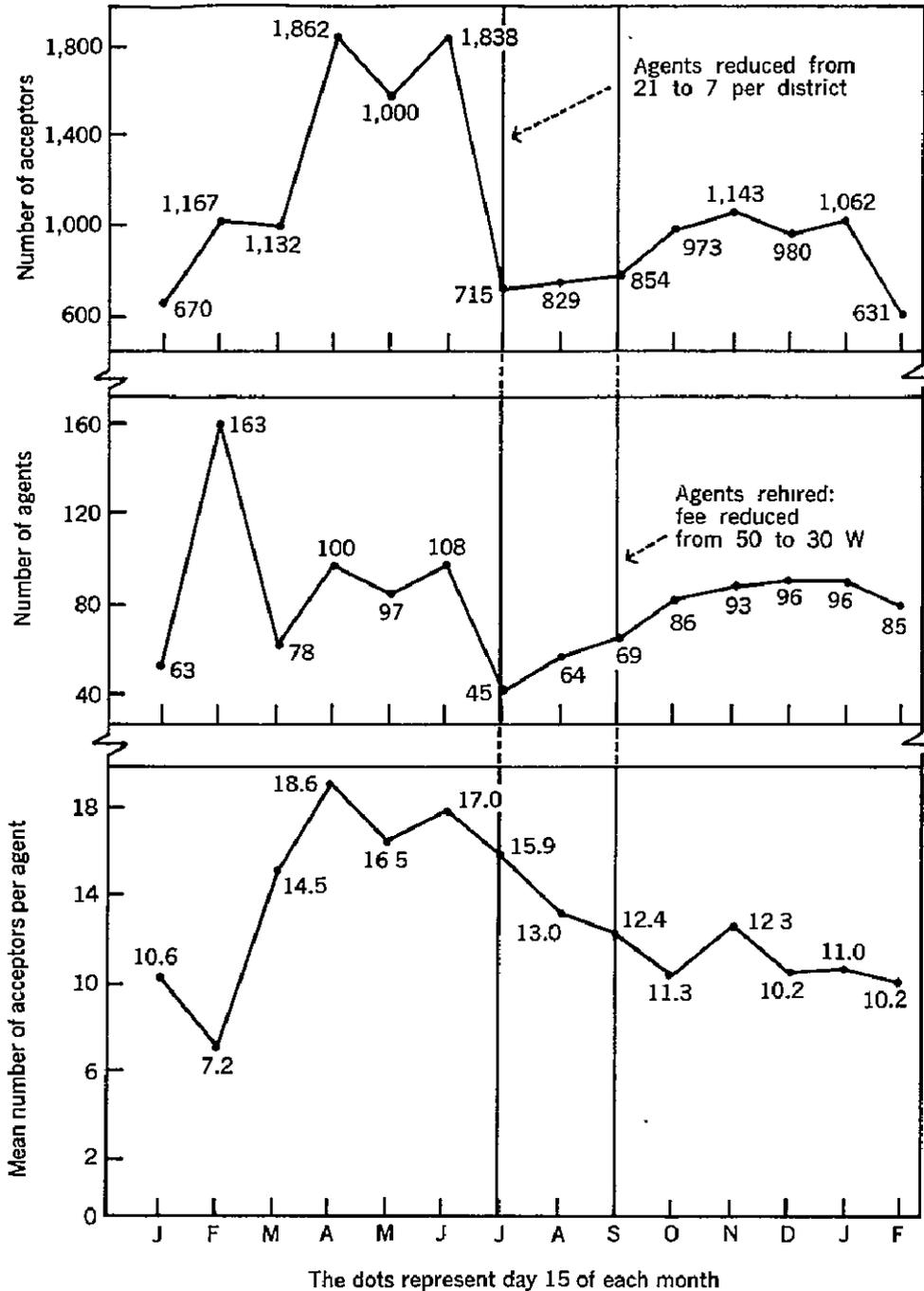
1. Housewife, wearing an IUD.
2. Housewife, never having worn an IUD. Both kinds of housewives are themselves slum residents, needing extra income. Both contacted friends and acquaintances.
3. Chief of the Ban or Tong (a Ban averages 24 households or 15 eligible couples, a Tong averages 217 households or 137 eligible couples). The chief is generally a woman, who acts as a channel for much government business and knows her area quite intimately.
4. Drugstore: usually a very small one-room store, operated by a "pharmacist-owner" and perhaps his wife. Generally the owner acts as the agent, though on occasion his spouse may also recruit. For example, they may post a notice in the store saying

they can give assistance to customers interested in a loop.

5. Beauty salon: These often have three or four employees, and, in some instances, all of these employees may try to recruit customers. The coupon simply shows the name of the shop, and it is up to the owner to decide how to divide the incentive money. Presumably, beauty shops (like drugstores) work off their flow of customers, though employees may do a little recruiting off hours.
6. Midwives: These women are known and trusted and are often called on for advice concerning health and family matters. As they make their rounds, they talk about family planning and the loop.
7. Church: The health educator talked with the minister, asking that he recommend a woman deacon to be an agent. By local custom, a deacon spends a good deal of time visiting members of the congregation in their homes and engaging in general conversation. On these rounds to the membership many subjects are taken up, and recruitment for the loop can be easily introduced.

In summary, the agents differ in their recruitment methods and in the clientele they normally see. Some agents cover a regular circuit which they would follow in their normal course of activity; some are positioned in such manner that a flow of people come to them; and some contact friends and others by their own methods.

FIGURE 1. Agent Referral Plan, Seoul: 15 January 1967—15 February 1968



Results

Recruitment began in early January 1967, with results as shown in Figure 1. On the line for number of agents, the February peak occurred because of superficial enthusiasm by many new agents who dropped out after a little experience on the job. Their ineffectiveness is reflected in the drop in the same month in average number of acceptances per agent. After that, as the more persistent agents learned their jobs, average performance rose rapidly to a level of about 17 acceptances per month, or one every other day, in late

spring and early summer. A constant response is the curve of total acceptances followed.

A helpful influence on the rapid build-up of the program was the geographical dispersion of doctors able to insert the IUD. Spread across the seven districts were 46 points (5-8 per district) where a coupon could be used to obtain an IUD.

The program was so successful in the spring that funds were being rapidly depleted. In order to continue the project, it was necessary to release 14 of the 21 agents in each district as of 30 June. The

reduced staff worked during July and August. Then as of 1 September all of the former agents were rehired, and the fee for all agents was reduced from 50 to 30 won.² No change was made in the 20 won received by the health educators.

All this constituted a valuable experimental variation. As the number of agents dropped (15 June-15 July point on graph) total acceptances also dropped, but note that the average performance of the remaining agents suffered little. (In practice, the line for number of agents fluctuates because of out-of-town trips and other interruptions.)

Over the next few months however average performance declined, until 15 October-15 November. The subsequent months of the project will be important to watch, to gauge whether or not the 30 won is too little to maintain agent interest, especially considering the problem of inflation. (Figure 1 covers the program developments through 15 February 1968, though analysis in this report is only carried through 15 November 1967.)

One surprising result of the project is that the seven agent types, month by month, all performed well, perhaps because the health educators selected the agents quite carefully. Even female church deacons, the least effective, have averaged one acceptor every 3 days, or 10 a month. The supporting table to the graph (Table 1) shows that, over the entire period of the study the range in mean monthly performance is 10.4 to 16.0. Of course, this is still a high percentage difference. Over a year's time and across 21 agents it would mean 1,200 more acceptances in the highest group (housewives with IUD) than in the lowest. The actual difference in only nine months has been over 1,000 but that reflects the larger number of "housewives with IUDs" working in the program (which in turn may reflect greater job satisfaction by housewives than church deacons).

Resources Required

The agent system uses modest resources. It involves a part-time obligation for the Project-Director, modest statistical analysis by his staff, and up to 70 won per acceptor. The other personnel resources, i.e., the health educators, the approximately 100 agents and the thousands of man-hours the agents invested in explain-

² From 19 to 11 US cents. By comparison, a package of cigarettes costs about 40-50 won or 14-19 US cents.

TABLE I. Performance by Agent Type by Month; Seoul: 15 January—15 September 1967

(See accompanying Figure)

	House-wife wearing IUD	House-wife not wearing IUD	Chief Ban and Tong	Drug-store	Beauty salon	Midwife	Female church Deacon	Total
To Jan. 15	A 75 B 11 C 6.8	92 5 18.4	146 13 11.2	109 10 10.9	106 11 9.6	81 5 16.2	61 8 7.6	670 63 10.6
Jan. 16 to Feb. 15	A 254 B 31 C 8.2	187 26 7.2	278 28 9.9	137 21 6.5	122 21 5.8	107 17 6.3	82 19 4.3	1,167 163 7.2
Feb. 16 to Mar. 15	A 260 B 13 C 20.0	151 12 12.6	255 15 17.0	127 9 14.1	104 9 11.6	113 8 14.1	122 12 10.2	1,132 78 14.5
Mar. 16 to Apr. 15	A 386 B 17 C 22.7	320 14 22.9	351 17 20.6	246 14 17.6	223 13 17.2	132 13 10.2	204 12 17.0	1,862 100 18.6
Apr. 16 to May 15	A 375 B 17 C 22.1	272 15 18.1	291 16 18.2	195 13 15.0	165 12 13.8	156 11 14.2	146 13 11.2	1,600 97 16.5
May 16 to June 15	A 364 B 18 C 20.2	305 17 17.9	335 17 19.7	263 14 18.7	221 14 15.8	196 14 14.0	154 14 11.0	1,838 108 17.0
June 16 to July 15	A 125 B 7 C 17.8	119 7 17.0	127 7 18.1	94 6 15.7	92 6 15.8	101 7 14.4	57 5 11.4	715 45 15.9
July 16 to Aug. 15	A 149 B 10 C 14.9	124 11 12.4	177 11 16.1	9 8 11.6	88 7 12.6	104 9 11.5	94 9 10.4	829 64 13.0
Aug. 16 to Sept. 15	A 153 B 11 C 13.9	121 9 13.4	137 11 12.5	90 9 10.0	98 9 10.9	119 10 11.9	136 10 13.6	854 69 12.4
Sum of means ("A" figures)	146.6	139.6	143.3	120.1	112.6	11.7	96.7	125.7
Mean of means	16.3	15.5	15.9	13.3	12.5	12.4	10.7	14.0

A=Number of acceptances.
B=Number of agents.

C=Mean number of acceptances per agent.
Note: See figure for 15 September 1967-15 February 1970 data.

ing the loop method, telling of the free service, and encouraging acceptances, all came at no extra charge.

Of course the project operated in the context of vigorous mass media work by the national program and general familiarity with family planning among the population. To these conditions, the agent system added personalized contacts by the trusted associates of interested women—a field staff of flexible size who would be on constant watch for likely acceptors. Recruitment of trained personnel at fixed, continuing costs was avoided simply by using local functionaries, women of various statuses, and common neighborhood

institutions, all well placed in the natural networks of the culture. The only selectivity was expert judgment as to which individuals were likely to be the best recruiters.

The "payment for results" feature means that recruiting each acceptor will cost 70 won and each 70 won spent will produce one acceptor. Thus 70,000 won for example means 1,000 acceptors. The question remains as to how rapidly the 1,000 will be recruited; in principle they might all be found in the first month. That would achieve the program's objective and by serving the women more quickly would be in everyone's interest.

The Coupon

The three-part coupon is shown in Figure 2 (see p. 240). Each part of the coupon carries the agent's chop (name stamp). On contacting a woman, the agent keeps Part A and gives Parts B and C to the woman, who carries them to the health educator or family planning worker in the district health center. The health educator tabulates Parts B and C, after which Part C is used to certify payment and is then filed in the School of Public Health through the health educator. A tabulation form is also kept by the health educator, to be given to the Project Director each month along with the Part B's. Each

900

month, the Project Director sends payments to the health educators and his agents.

Replacement Effect

A question may be raised regarding the "replacement effect" of the agents—the criticism that the acceptors recruited would have obtained loops anyway, through the regular program. While more extensive analysis of time-trend data may test this hypothesis, a fair preliminary conclusion is that carefully selected agents, ably supervised, and located in the natural pathways of communication, with both agents and supervisors on incentive pay, will certainly hasten many acceptances and will produce some that would not otherwise have occurred. Reinforcing this conclusion is the consistently high and even performance of different agent types. Finally, the agent system is valuable even when some acceptances simply replace those that would have occurred through the regular program. At the recruitment cost of 50–70 won per acceptance, a substantial wastage factor can be tolerated. Even if half are wasted, the effective cost is only 100–140 won.

FIGURE 2. The Coupon

A	B	C
No. _____ Date of issue _____ Application for loop insertion (Original) Address: Seoul Special city, Gu, Dong, Tong, Ban Name: _____ (age _____) <div style="border: 1px solid black; width: 60px; height: 20px; margin: 5px auto; text-align: center;">issuer's chop^b</div>	No. _____ Date of issue _____ Application for loop insertion Address: Seoul Special city, Gu, Dong, Tong, Ban Name: _____ (age _____) I recommend the above person for loop insertion. <div style="border: 1px solid black; width: 60px; height: 20px; margin: 5px auto; text-align: center;">-issuer's chop^b</div> To: Health Center	No. _____ Date of issue _____ Application for loop insertion Address: Seoul Special city, Gu, Dong, Tong, Ban (2) ^a Name: _____ (age _____) I recommend the above person for loop insertion. <div style="border: 1px solid black; width: 60px; height: 20px; margin: 5px auto; text-align: center;">issuer's chop^b</div> To: Director of clinic Date of insertion _____ Doctor's name _____ If no insertion explain why _____

^a A number from 1-7 appears here to identify the type of agent

^b A name stamp.

"Motivational and Incentive Components of the Korean Family
 Planning Program"-
 extract from larger paper, Taek Il Kim and Walter B. Watson,
 July 1971

This paper divides motivational and incentive efforts into those aimed at the public at large, and those aimed at family planning program personnel. It looks at each sector separately starting with the full time, salaried, field workers. These workers receive a salary of about \$40 to \$45 per month plus a travel allowance of \$8 to \$10 and an allowance for medical supplies of \$1 to \$4. They receive 16 U.S. cents per IUD referral and 32 cents for each vasectomy referral. In addition to these incentive payments a strictly enforced target system pushes field workers to reach a specified level each month. Since only sufficient incentive money is set aside by the government to exactly reach targets, this system acts as a ceiling to recruitment because no incentive is available for exceeding the national target (although local adjustments are possible). However, this system does assure the Korean program that annual targets will be met.

The private doctors who perform the vast majority of IUD insertions, pill screenings, and vasectomies constituting the medical service side of the program are paid entirely on a "fee for services" basis. Through 1971 doctors received about \$1.25 per IUD insertion, \$3.50 per vasectomy, and \$.16 for a pill screening. These relatively small payments have been sufficient to permit over 1,700 doctors throughout the Korean peninsula to participate profitably in the program, without the necessity of paying them such items as salaries and travel fees.

Finally, incentives have been given to the target population through the provision of free services, and through compensation of \$3.00 paid to vasectomy acceptors.

In summary, Korean program administrators agree that incentives have played an important role in recruitment of acceptors, although precise data on their role is missing.

(Editor's note: Throughout the Korean program, incentive splitting and informal local arrangements are common. The editor knows of cases where field workers pay the transportation fee for acceptors out of their own incentive funds, or where physicians and field workers share portions of their incentives with informal referral agents such as mothers class leaders.)

Kim, Taek II, Director
National Family Planning Center
Ministry of Health & Social Affairs

and

Walter B. Watson
Research and Evaluation Adviser
Population Council

I. INTRODUCTION

The Republic of Korea's National Family Planning Program was first organized in 1961. Voluntary organizational efforts had suggested that a substantial segment of the population might respond favorably to such a program. The program was dramatically expanded and strengthened in 1964, and launched vigorously as a full scale national program with the recruitment and training of 1473 fieldworkers, one for every township (myun) in the country. Counting existing health center workers, a total of 2214 fieldworkers were trained in 1964. The township level fieldworkers and their replacements have been making home visits since that time, and this activity constitutes the backbone of the program, insofar as recruitment of new family planning acceptors is concerned.¹

Family planning has been integrated into the ROK Government economic development plans, to which high national priority is devoted. The rate of population growth between 1955 and 1960 was 2.9% per year, and between 1960 and 1966, 2.7%, as measured in the 1960 and 1966 censuses. A target growth rate of 2.0% by the end of 1971 was established for the Second Five-Year Economic Plan (1967-1971). An ambitious target of 1.5% by the end of 1976 has been established for the Third Five-Year Economic Plan (1972-1976). It is clear that family planning is being relied upon heavily as one major means of achieving these goals. The probabilities of reaching the 2.0% and 1.5% targets are discussed below.²

II. MOTIVATIONAL FEATURES OF THE PROGRAM

In order to be clear about the role of motivational and incentive components in a family planning program, it is necessary to distinguish between (1) those motivational activities and incentive payments which are addressed to the population at large and (2) those which are intended to spur doctors, health center workers, fieldworkers, and other program personnel to greater activity. Motivation and incentives are usually understood in the former sense, but a large proportion of the motivational effort in Korea, and in some other countries as well, has been directed at the family planning workers themselves. Likewise most of the fees, frequently termed "incentives," have been paid to various types of workers in Korea rather than to the population. Thus, confusion as to the actual nature in the field of motivational activities and incentive payments can occur unless this fundamental distinction is kept in mind. Let us consider each of these in turn, taking first family planning workers.

1. For a fuller discussion of the origins and development of the Korean program, see a forthcoming book on the Korean National Family Planning Program by T.I. Kim, John Ross, et al.

2. For details of the family planning 5 Year Plans, see T.I. Kim *op. cit.* and Taek II Kim, "Basic Steps in Development of the Ten-Year Family Planning Program in Korea" p. i ff. in Population and Family Planning in the Republic of Korea, Vol. 1, Ministry of Health and Social Affairs, Seoul, March, 1970.

1. Motivating the fieldworkers -

As noted above, it is the township (myun) level fieldworkers who carry the program to the population by means of home visits. 1473 such workers were recruited in 1964 and given 4 days classroom training and 2 weeks on the job training and supervised work. A variety of short in-service and pre-service seminars and training courses for old and new workers has been held since. These courses emphasize the nature of the job and work requirements, but they obviously have motivational aspects as well, inherently in the sense that any training course has motivational impact, but also deliberately planned in some instances.

Within the Economic Plan budgets funds are allocated for each IUD insertion or other family planning acceptance in accordance with targets. Fieldworkers are salaried, but they also receive 50 won (\$.16) for each IUD referral and 100 won for each vasectomy referral.

The pay scale for fieldworkers has not been all that one might hope. The 1970 monthly scale for family planning workers is as follows:

	<u>Township (Myun) Fieldworker</u>	<u>Health Center Worker</u>
Salary	12,520 Won	13,440 \$ (1 = 310 Won)
Travel allowance	2,200	3,330
Clerical supply allowance	400	1,300
Total	<u>15,120</u>	<u>18,070 *</u>

* 2,000 additional for the senior health center worker in each center.

This comes to just over \$40 basic monthly salary and just under \$50 total for the fieldworkers. In addition there are the referral incentives just noted. These latter, particularly in the case of vasectomy, may be largely utilized in transporting and accompanying the potential acceptor to the service site. Health center workers are paid about \$10 more per month. A senior health center worker receives approximately an additional \$5. A recent unpublished analysis indicates that salary raises for fieldworkers have just barely kept pace with the increasing cost of living and have frequently lagged behind. Also, for a variety of bureaucratic reasons, salary and travel payments have sometimes been delayed. This delay has tended to create morale problems and to slow the program down. Furthermore, the fieldworkers occupy temporary positions without tenure. Nevertheless, underemployment is common in Korea, and jobs are frequently not easy to obtain. Low pay and hard work are by no means unusual. These conditions are particularly applicable to the rural areas, where many of the fieldworkers are located. Consequently, jobs in family planning and reasonably satisfactory execution of them are not without attractions. On the other hand, vacancies and personnel turnover continue to be very serious problems.

Both gifts and observation tours to Taiwan have also been used to motivate fieldworkers.

The target system deserves special attention. As in Taiwan but in sharp contrast to some other countries, the target system is very strong in Korea. As noted, achievement of economic planning goals, into which family planning targets are integrated,

is taken very seriously. Family planning, health, and other targets are set nationally, then allocated to the provinces and smaller administrative units at all levels. There is strong pressure at all levels to achieve targets, and workers are "target conscious." Promotions for various county (gun) and township (myun) officials administratively responsible for the fieldworkers are based in part upon target achievement. Though effective day-to-day supervision and technical guidance are frequently weak for family planning workers, both they and their superiors are very aware of performance in relation to targets. It seems possible that a variety of ad hoc systems of exchange of favors may have developed around the target system, thereby reinforcing it, but research on this topic is lacking. It is clear, however, that targets are taken seriously by local family planning fieldworkers, and strenuous efforts are made to achieve them. The annual November-December rise in family planning acceptors attests to this fact.

It has been suggested that what would be needed to increase IUD acceptors in Korea by 10% or 20% would be to convince the Economic Planning Board to allocate 10% or 20% more funds for the higher targets. While this statement is obviously an oversimplification, it contains much truth. It appears that lower family planning achievement in 1968 and 1969 than in 1967 and the first half of 1970 can be attributed largely to budget difficulties rather than to the exhaustion of motivated potential contraceptors, to having already "skimmed the cream," or to other factors. Although many social, psychological, cultural, economic, and political differences exist between Korea and other Asian nations, it is our impression that a key one, insofar as family planning programs are concerned, is the administrative strength of the target system. This point ties into our more general theme - our impression that greater achievements in family planning in Korea than in some of the other countries are due more to the strength of the commitment and the extent of effort actually expended than to social, cultural, or motivational advantages. Very substantial achievement in rural Korea (well above that in Seoul), still not very modernized, seems to point in this direction. So, too, does the low level of private sector contraceptive practice in Korea. This is obviously a controversial view, with which some will disagree, especially some of those most interested in motivation. Clearly, research in depth is needed. At the very least, however, more research on how to strengthen programs administratively would seem to hold much promise.

2. Motivating the Private Doctors -

The vast majority of the IUD insertions, vasectomies and oral pill screening examinations that constitute the medical service side of the Korean program are performed by private doctors certified by the government after training. (Pill and condom distribution are handled separately.) Short courses and seminars have been given to IUD and vasectomy doctors. Approximately 2,200 doctors have received some form of IUD training and 1,400 have received vasectomy training. Because of lack of interest, insufficient patients, reluctance to become involved in a program with small fees, and various other reasons, there are only 1,200 IUD and 500 vasectomy doctors active. As with fieldworkers, the training courses for doctors have motivational components.

The target system does not extend to the private doctors, but the incentive fee structure does. Current service fees are:

IUD insertion (and examination)	400 Won
Vasectomy	1000
Pill screening examination	50

All fees are well below current market prices, and attempts are being made to increase them, but the outcome is not yet clear. Ad hoc fee splitting arrangements may have developed between doctors and referring fieldworkers, but systematic research on such practices is lacking.

The overall motivational impact of the training courses, seminars, and incentive fees upon the private medical practitioners is not clear. Again research is lacking. Certainly it has varied among individuals. Informal reports from a few fieldworkers suggest that they have referred clients to a relatively few doctors who have acquired skill, experience, and a reputation relative to particular contraceptives. How many doctors, if any, have become "contraceptive specialists" or even acquired some appreciable portion of their income as a result of program fees is an open question. It is known that continuation with the loop, and especially with the pill, is low and a persistent major problem for the program. The present effort to raise the various fees for doctors is based upon the hope that such an increase might stimulate less hasty and casual treatment at acceptance and might improve the poor quality of follow-up care. At least it is clear that the program is heavily dependent upon cooperation from the medical community, that there has in general been such cooperation in the past, and that research in this area is needed.

3. Motivating the Target Population -

Incentives for family planning acceptors have been free supplies and service for all contraceptives except the pill, for which a small fee of 30 Won per cycle is charged, some door-to-door distribution of pills and condoms and considerable additional distribution of both through the Mother's Clubs, and a vasectomy incentive of 900 Won (\$3). The exact effect of these procedures is not known, but all are thought to be quite important.

"Field Structures in Family Planning,"
Wajihuddin Ahmad, Studies in Family
Planning, Vol. 2, No. 1, January 1971

This paper neatly traces the history of field structure in one family planning program, and makes recommendations for the future based on a decade of experience.

From 1960-1965 Pakistan experimented with a purely clinical approach to family planning, and found it to be inadequate, due primarily to lack of a supporting field structure to attract and retain clients. From 1965 until this article was written, a cadre of 36,500 part-time midwives was used along with some full-time male motivators, and extensive reliance on mass media. The author's appraisal of this system strongly suggests a need for restructuring the field organization. "The basis of the existing structure is seen to be a massive corps of illiterate, poorly trained, low paid female carriers of the family planning message, staying with the program for short intervals, directing their efforts toward recruiting new acceptors rather than maintaining a high level of family planning, operating unsystematically and without adequate yardsticks for what they achieve."

The operational phases of a restructured program are described by the author and include:

1. Better selection and screening of field personnel placing the emphasis on the use of couples as field work teams;
2. Standardization and improvement of training, supervision, and provision for continuous retraining;
3. Restructuring of the forms and recordkeeping system to emphasize registration of couples and monitoring of continuation;
4. Extensive changes in salary and incentive payment systems including a basic small salary plus:
 - a) making a small, uniform charge of about 10 U. S. cents for every service to customers;
 - b) depositing these charges in an incentive account for each couple team;
 - c) recording periods of non-birth for registered couples;
 - d) verifying this record;
 - e) paying incentives based on periods of non-birth to couple teams;
 - f) adding a bonus for superior achievement;
 - g) other measures to emphasize: (1) output over input, (2) continuation over initial acceptance, (3) rewarding the efficient rather than punishing the incompetent.

(Editor's note: This program was tested and incorporated into the third five-year plan for family planning. However, political developments in Pakistan have prevented full scale implementation of this new system.)

Field Structures in Family Planning

THIS PAPER was prepared by Wajihuddin Ahmad, Joint Secretary and Commissioner for Family Planning of the Government of Pakistan. It constitutes a review and appraisal of the field structure of the family planning program in Pakistan. The original field organization was implemented in 1965. Mr. Ahmad discusses its accomplishments and deficiencies and then describes the new program that is evolving.

The new field structure has already been in operation in the Sialkot District, Punjab Province, since July 1969. It is now being extended to Peshawar District, Northwest Frontier Province, and Hyderabad, Sinc Province, in West Pakistan. East Pakistan has begun implementation and experimentation in Tangail District outside of Dacca and will soon extend the scheme to Khulna District. The Family Planning Division is now reviewing the first year of experience in Sialkot.

Family planning involves field activity more than clinical service. The administrative requirements of an officially sponsored family planning program are therefore different from those of a program for dispensing medical aid.

In family planning the primary task is to create and sustain a massive demand for contraceptive knowledge and assistance. A program that provides information and service only to those who ask for it cannot achieve demographic impact. Extensive, energetic, carefully planned, and thorough promotional efforts are required to alter pro-fertility motives deeply rooted in social norms and personal attitudes. Promotion involves approaching

people where they live and work, informing them about contraception, persuading them to adopt it, ensuring continuity and regularity of practice after initial adoption, and keeping a close watch on results measured in terms of births averted or delayed. None of this is possible without a well-designed field organization, of adequate size.

In Pakistan during the period 1960-1965, family planning was introduced as a service of the health clinics. There was no field program; it was hoped that the health clinics would serve as effective diffusion centers for the program. The program failed to achieve mass impact. A major reason for this is that less than 10 percent

of the population in our country ever visit a health establishment, and a major proportion of such visitors are children.

Similar attempts in other countries to operate a family planning program entirely as a clinical service have also been unsuccessful. Puerto Rico provided a full range of contraceptives as a part of the island's maternal health service. Each clinic served an average area of only 22 square miles, and contraceptives were given free of charge. However, after a decade of operation, it was found that the active caseload of clinics was only 5 percent of all fertile women and even this low figure was believed to be greatly exaggerated.¹ The inadequacies of the purely

clinical approach are not confined to preliterate, rural, or less advanced societies. In New York City, the Margret Sanger Research Bureau clinics have reported a dropout of 79 percent in a year out of 5,186 admissions. In 23 British family planning clinics, out of 16,000 admissions made, less than a third continued their contact with the clinics after two years, and among the dropouts not more than 8 percent were found to secure supplies from other sources.² Apparently, even under the best conditions, clinics operating without a supporting field structure fail to attract a substantial proportion of the target population and fail to achieve long-term client participation of the small clientele that they do attract.

Creation of a Field Program in Pakistan

ORGANIZATION

In 1965 we attempted to form a field organization by employing "dais" (midwives) as part-time field workers in the localities where they were deployed. Both IUDs and conventional contraceptive methods were promoted by the program. The dais received a salary of Rs.15 (US\$3) per month, a commission of Rs.2.50 (\$.50) for every IUD case that they referred to a clinic, and 80 percent value of the contraceptives that they sold at heavily subsidized rates. Most of the women were illiterate, and many had had no previous experience as midwives. They were not required to keep any record of their effort or achievement. The training they received never went beyond what an illiterate middle-aged village woman, working part-time for a very small income, could or would acquire. The program executive in a local area (the Family Planning Officer) usually worked with 50 to 70 dais. His involvement in the effort of his field staff often remained limited to pressuring them to achieve prescribed targets in clinical service and contraceptive sales. If a dai failed to refer the required number of clients to a clinic over a period of time, she would be replaced by a new recruit. The replacement rate, at times as high as 40 percent a year, often presented an additional problem in training.

Wide individual differences in quantitative performance have always been displayed by dais, but on the average the dai has recruited 1.3 IUD acceptors per month since the inception of the program.³ A research study showed that a dai's referral performance dwindles rapidly after the first six months of her employment.⁴ Di-

rect contribution of dais to the sterilization case-load is negligible. Their contribution to the use of conventional contraceptives cannot be measured reliably.⁵

Of the original target of 50,000 dais for the two provinces there were almost 36,500 active in the field as of 1 July 1970. The funds earmarked for vacancies have, however, been used for enlisting 4,000 part-time male workers at the rate of Rs.30 (\$6) per month in East Pakistan and 700 full-time male workers at Rs.105 (\$21) per month in urban areas in West Pakistan.

The size of the dai cadre and its wide dispersal over both rural and urban areas are perhaps the strongest points of the field organization that was created. If, in every cluster of four or five villages, or a target area of 500 fertile married women, a dai talks about birth prevention and family planning, the word soon reaches every household. As communicators of the family planning message, the dais have produced highly commendable results.⁶ Exclusive reliance on conventional media could not, in the same period, have created the widespread awareness of the existence of family planning methods, particularly the IUD, that has been observed repeatedly in surveys.⁷

Assessment of the Program

Between the awareness of birth prevention as a possibility and the successful exercise of control over fertility, however, there is a range of problems, each requiring specific action, assistance, and advice. The mere size of a field organization is in no way a full index of its capability to solve those problems and to induce a rapid and large-scale transition from the stage of knowledge to that of successful practice. For assessing the functional effectiveness of the structure the following criteria are of basic importance:

- 1) Is the field worker's understanding and performance of her job consistent with program objectives?
- 2) Does the system provide, for each worker, an action plan specifying the details of the worker's task?
- 3) Does the system permit the exchange of information and experience between field workers and program leaders at various levels?
- 4) Is a reasonable level of efficiency in performance secured through the correct choice of personnel, adequate incentives, sufficient training, and close supervision?

In short, what do we expect from our field workers? Is the role they fulfill related to what we want from them in theory? This is a fundamental question.

Under our present approach, the field worker's achievement has been measured in terms of the number of acceptors of clinical and nonclinical contraceptive devices the worker recruits. The program has focused on initial acceptance of a method by a client rather than on the subsequent continuity and regularity of use or on the ultimate aim of keeping a client nonpregnant by effectively employing any method or any combination of methods. Concentration on "input" targets—such things as insertions, supplies, and personnel activities—curtails the attention that needs to be paid to the fundamental output goal: the limitation of fertility. This would not be a problem if the focus of the program were on sterilization because in sterilization "input" is nearly a full and immediate guarantee of "output"; trial, adoption, and continuation are achieved in a single act.⁸ However, for pills, IUDs, and conventional contraceptives, a client-centered approach rather than a technique-oriented approach is necessary. The client's inclinations, changing preferences, motivational fluctuations, and responses to side effects, experienced or rumored, must be taken into account. The field worker must accept the client as a lasting commitment and not as a one-time customer. We cannot possibly promote this attitude as long as we continue to define targets in terms of, and pay incentives on the basis of, insertions and sales. We must reorient our program to emphasize the goal of fertility reduction, i.e., keeping an increasing number of women nonpregnant, for longer intervals, in an assigned target-group.

We must acquire more knowledge about the potential clients. More information is needed on the extent and nature of clients' resistance to family planning and the efforts made to overcome this resistance; the quality and duration of contraceptive use with reasons for its termination; the impact of the assistance on clients' fertility; the preferences displayed by clients; and the problems discovered in follow-up. Such data can help to identify problem areas as well as to locate factors associated with outstanding accomplishment.

Unfortunately, the potential client simply has not figured in our documentation; nor has the motivated client in the pre-acceptance stage or the problem client in the post-acceptance period. A record of

acceptors served from a clinic is kept. But it is extremely difficult to track down an acceptor from the clinical register, either for follow-up or for verification of performance.⁹ Insufficient address, distance between the clinic and the home, and the inability of the field worker to keep a record of the referred case are some of the limiting factors. There is no way to find out if IUDs have been retained by clients over a period of time, if side effects have been attended to, if involuntary expulsions have been followed by reinsertions, or if clients who have removed IUDs have accepted alternate methods. For nonclinical contraception, there is always an uncertainty about the authenticity of recorded sales. The possibility that a worker or a supervisor may deposit a very small sum of money against reported sales to escape censure for defaulting on targets cannot be altogether ruled out. No attempt is made to measure the impact of clinical and nonclinical contraception on fertility within a program area and this information is seldom available from other sources in the absence of a good system of birth registration.

We have depended largely on sample surveys for program evaluation. Sample surveys are, however, no substitute for a complete record system of field work. Sample surveys can provide information about the appropriateness of a policy for the program as a whole, but they do not serve as indices of the efficiency and effectiveness of the program in a specific community or district. They cannot measure the achievements of program functionaries or identify problems of local importance. A continuous built-in process of evaluation for each "operational unit," or geographical subdivision, is essential for making comparisons from place to place and over a period of time and for taking quick corrective measures at relatively low administrative levels.

In our program, the local executive is the Family Planning Officer, a highly educated and usually well trained young man (or, in some urban areas, young woman). When the job was created it was expected that the Family Planning Officers would participate actively in field work. They were expected to (a) stimulate a local demand for contraception and (b) deliver services and supplies to meet the demand. The first is a leadership task of an entrepreneurial nature, the second is a bureaucratic function. In practice most of the Family Planning Officers fail to fulfill both these tasks. Most of them, while conform-

ing to high standards of efficiency in the routine requirements of the job, have fallen short of expectations as effective leaders of work groups venturing to change traditional attitudes toward family planning. Ideally, the team leader should work closely with the team to determine lines of action, to reshape operations, and to solve problems as they arise. The Family Planning Officer, in spite of his training and competence, makes only a minor contribution to the field effort of the dais; he provides no forum for discussion of problems, and for seeking and giving suggestions. He settles into the role of an agent rather than a leader, applying pressure to the field staff to achieve targets and reporting back response to such pressure. The group of field workers that he works with, often unmanageably large in size, has been aptly described as a collection of "go-betweens," frequently mutilating the message that he attempts to convey through them and providing no feedback on the reception of the message.¹⁰ The inadequacy of such a relationship between the team leader and the task force is obvious.

The quality of assistance that a program leader can expect from his team of field workers depends on such factors in the workers as their training, professional background, education, social status, age, and sex, and such external factors as rewards for work. These elements must be considered in administrative reform. Both qualifications and motivations of workers need to be related to job requirements. At the present time we must reevaluate some of the standards that we have been adopting, deliberately or otherwise, as criteria for selecting the field staff. Some of these criteria may turn out to be only biased preferences, irrelevant or even detrimental to program objectives.

Sex criteria. All primary workers enlisted in the field organization in 1965 were women and the family planning scheme as originally envisaged did not call for recruitment of male workers at "grass roots" levels. Nevertheless, during the last five years the representation of men in the cadre has reached the level of 15 percent in East Pakistan. These male workers are primarily vasectomy promoters and are not expected to influence men to encourage their wives to accept female methods of contraception. In West Pakistan the field organization is still almost entirely female (98 percent).

The predominance of women in the field organization is perhaps based on the

assumption that the husband is less motivated for family planning than the wife. There are no *a priori* reasons for this assumption. It is possible to argue that the male might be equally, if not more, inclined to accept a small family norm.¹¹ The economic advantage of having fewer children may be perceived better by the father, the member of the family responsible for food, clothing, and education. The prospect of fragmenting a small piece of land among a large number of children, which has been observed as a powerful motive for family limitation in countries with a heavy pressure on land, is essentially the man's responsibility.¹² In rural societies men are more educated, more accessible, and more predisposed to innovation than women. Studies in Puerto Rico¹³ and Ceylon¹⁴ reveal that the husbands are more receptive to family planning than the wives. Reports from India,¹⁵ Japan,¹⁶ and Pakistan¹⁷ show a near equality of interest by the two sexes, with a slightly greater male interest during the early stages of the official program.

In terms of broadening the family planning program, there are three distinct advantages to approaching the husband:

1. Male methods of contraception (vasectomy, condom, withdrawal) can become part of the program.
2. There will be higher success in female methods that require continuous male cooperation (foaming liquids, tablets, rhythm).
3. There will be a higher likelihood of acceptance of female methods (IUD, pills) by women who depend on male consent or male initiative.

Several studies have focused attention on the husband's role in decision-making. It was found in an Indian study that in only 7 percent of IUD cases had the wife made the decision, received the insertion, and informed the husband afterwards. Among the remaining 93 percent of the respondents, the final decision was made by the husband in nearly half of the cases.¹⁸ In a Pakistani study, wives from an urban sample attributed to their husbands a more influential role in decision-making than they gave to themselves, and both males and females reported that husbands were the first to learn about family planning and the first to open discussions on the topic.¹⁹ In a rural situation, frequently, the husband's attitude is even more consequential and decisive than in an urban setting.

A woman worker, even an experienced dai, does not find it easy to inform the husband on family planning and often depends on the wife to do this part of her job. A wife can create dissension if she suggests family planning to the husband on the ground that he is not rich enough to afford a large number of children. This type of recommendation coming from a disinterested outsider may be viewed as a sensible suggestion but is likely to be taken as an expression of discontent when it originates with the wife. Failure to acknowledge male authority and to approach the family via the husband increases the possibility of male resistance to family planning; it can be interpreted as a challenge to male authority.²⁰ In some cultures, female initiative in adoption of family planning is even construed as an indication of infidelity.²¹ A recent study of inter-spouse communication among East Pakistan couples confirmed the desirability of adopting the couple as the target unit for motivation rather than just one member.²² The program, therefore, must be oriented toward educating husbands and fathers as much as wives and mothers. Administratively, this implies that at least half of the field workers should be men.

Professional criteria. We have appointed midwives as agents of fertility limitation. In our choice of midwives, the ready availability of an established channel of communication with mothers was an attraction that outweighed our apprehension of conflict between incompatible professional interests. Logically, however, there is every possibility of a midwife's vested interest in births interfering with her role in preventing births, unless her income from births prevented substantially outweighs her dividends from deliveries conducted. Under the present system, there is no certainty that she can gain more by discouraging a birth. Her fixed salary as a field worker is unrelated to nonpregnancy in her clientele.

More significant than the theoretical possibility of a conflict of interest is evidence that such a conflict actually exists. A study made outside the program in 1964 reported that half of the dais who had been trained for family planning but were not employees of the official organization *did feel* that working for family planning would interfere with their profession.²³

The dais appear to have a further limitation in terms of their social status. A study of the West Pakistan Research and Evaluation Centre shows that the sharp decline in output of the dai observed after

her first six to nine months, reported both for East and West Pakistan and with respect to "effective" as well as "ineffective" dais, is presumably explained by the inability of an average midwife to move out of the narrow circle of families with whom she has long-standing professional links.²⁴

A dai's professional background as a midwife places her in what may be described as the "service class" in the village community, the class to which the barber, weaver, tailor, and musician also belong. This social layer ranks below the landowning and sometimes even the landless peasantry. Sociometric implications of this situation need to be studied further. It is reasonable to expect that information and suggestions coming from a social "inferior" not perceived by the recipient as more knowledgeable than herself or himself are less likely to be believed and adopted than the same information and suggestions from a peer or superior.

The issue of whether a background of crude midwifery is helpful for a village level family planning worker, elicited an observation from the Dacca Research Centre to the effect that "... other village women and, of course, men, may be just as effective or more effective."²⁵

Reliance on illiterate personnel. Education or the mere ability to read and write has not been a requirement for field workers. The prevalent literacy rates of dais show a broad range among studies conducted in Pakistan: from a low of 11.5 percent in a small West Pakistan sample²⁶ to a high of 54 percent in an East Pakistan sample.²⁷ The higher rates reflect accidents of choice rather than a deliberate policy to prefer literate dais.

When record-keeping is required of the field worker, the ability to read and the ability to write legibly are undoubtedly indispensable. Literacy is perhaps equally important for assimilating the content of training and retaining it over a period of time. It has been informally reported that literate dais show better capacity to handle the informational aspects of the program.²⁸ In a small "almost all" illiterate group of dais, three-fourths of whom had received training certificates from the health department and additional program training, 50 percent thought the IUD might go into the stomach or some other part of the body from the uterus; only 7 percent mentioned side effects as a part of the information which they thought should be given to a client; 23 percent stated they would tell the client that the IUD does not cause any bleeding; and, in general, a

"significant number" lacked information basic to their job.²⁹

It was possibly presumed that a sufficient number of female workers would not be available, particularly in rural areas, if the ability to read and write was made a condition of recruitment. However, no attempt was made to test this hypothesis or to estimate the ratio between the number of personnel needed and the number of qualified women available in various areas. When we decided to enlist high school graduates to be trained as Lady Family Planning Visitors for IUD insertion, there was a high level of response. In East Pakistan we succeeded in enrolling 685 matriculate women in the cadre when, according to the 1961 census, the total number of female matriculates, rural and urban, of all ages, was only 11,717. A growing accent on female education in the villages and the policy of inducing urban women to work and live in rural areas by offering them additional pay were two factors that helped in our recruitment.

In the Sialkot district of the Lahore Division in West Pakistan, where an attempt has already been made to enlist literate female workers from rural areas, the ratio of personnel required to number of available literate women over 25 is 1:70, with local variations ranging from 1:44 to 1:96. No serious problem has arisen in selecting married female workers in older age groups even with the requirement that most of them have received some formal schooling.³⁰ How we may fare when we go into areas with a still lower level of female literacy will become apparent in the near future when pilot projects similar to the Sialkot experiment are launched in less advanced districts. However, statistically, the problem does not appear to be extensive. The data collected indicate that a problem in finding literate women may possibly arise with respect to only 15 percent of the rural areas, *i.e.*, where the ratio of requirement to availability falls below 1:50. In such areas the male workers can be entrusted with record-keeping until such time as literate female workers become available or illiterate workers acquire literacy under a pay incentive. In urban areas no difficulty is anticipated in recruitment of 892 workers.

Wage-structure. Comparisons have been made in other countries between the output of fixed salary workers and of those paid on the basis of performance, keeping other factors as constant as possible.³¹ The advantage of linking earnings with output has been established in these experiments.

Nevertheless, it is not advisable to make income entirely dependent on measureable units of performance. Such a system can cause a sense of insecurity and can operate unfairly when response to family planning effort varies from area to area or from time to time on account of factors beyond the control of the field worker. An optimal balance between a sense of urgency and a feeling of economic security needs to be achieved by a judicious combination of a minimum fixed salary and a supplementary performance incentive.

The monthly wage of Rs.15.00 (\$3.10) that we pay to a dai is about what a village woman might earn by keeping a few chickens or a goat, and the low wage has been justified on the ground that it is payment for part-time work. It is assumed that a dai's earnings from family planning form an increment over a basic source of livelihood. A large number of dais do not, however, think that their job is part-time, presumably because they have no other source of assured income.³² The more effective or the "high performance" dai is usually one who personally recruits clients instead of seeking the assistance of another woman to do so, the method frequently adopted by "low performance" dais. A successful dai generally accompanies a client to a clinic whereas the less successful dai neglects to do so.³³ Thus, for a successful dai, if six or more IUD cases per month are taken as a criterion of "success," the job does become full-time. For such a dai, the income of Rs.30 per month (Rs.15 from salary and Rs.15 from referral fee) is too small a remuneration for the effort. For a dai who puts in a minimal effort and receives Rs.17 in a month, the amount is a lucky windfall. Nearly three-fourths of the work force fall in the latter category.³⁴ The generally low level of involvement of the dais with the program is obvious from the fact that not more than 37 percent of village women are ever contacted, according to a study that attributed the low level of effort to poor wages.³⁵

The Pakistan Experiment in Field Staff Reorganization

The preceding discussion strongly suggests a need for restructuring the field organization. The basis of the existing structure is a massive corps of illiterate, poorly trained, low-paid female carriers of the family planning message, staying with the program for short intervals, directing their efforts toward recruiting new acceptors rather than maintaining a high

level of family planning, operating unsystematically and without adequate yardsticks for measuring what they achieve. The new proposals are for a somewhat smaller organization of 25,000 field workers, full-time and paid as such, literate enough to keep the records needed for supervision and evaluation, and oriented toward providing family planning care as a regular and continuous service rather than as a single exposure. The restructured pattern has to begin as a pilot project in order to explore all the problems that may arise in affecting a change. Operational phases of such a project are described in succeeding paragraphs.

DIVISION OF THE PROJECT AREA

Divide the project area into operational units roughly corresponding to a population size of 8,000 for rural and 10,000 for urban areas. In view of the national ratio of 16.5 fertile couples per 100 population, the target population in each unit will vary between 1,300-1,500 couples including sterile, currently pregnant, and temporarily separated. Assign six such units to one Family Planning Officer.

SELECTION OF WORKERS

Select a team of two field workers per unit—a man and a woman. The two should, if possible, be married or closely related otherwise to each other, because in some communities it is not considered respectable for a woman to work in conjunction with a total stranger. They should be literate with good handwriting, local residents, 25 years or more in age (or a little less in the case of the woman if she is married). A very high educational level or a social status much higher or much lower than average should be considered a disqualification.³⁶ Ability to speak persuasively, freedom from domestic worries, emotional balance, mature outlook, and an active interest in other people are some of the qualities to look for in an interview of a prospective worker. Selection should be made by no one lower than a district executive officer with the help of a representative from the Provincial Family Planning Board or the Research and Evaluation Organization. It may be possible at some stage to evolve a standard character analysis interview and an intelligence test to assist in selection.

TRAINING

For every group of 36 man-woman teams, appoint a permanent training offi-

cer for continuous training and guidance. Train the workers in (1) record-keeping, (2) basic facts about contraceptives, and (3) motivational techniques. The last is a difficult area and the existing content of training programs on this subject is not very meaningful, consisting largely as it does of vague generalities and sociological jargon. The poverty of training content in fact reflects the insufficiency of our knowledge of the factors that make one person a more persuasive and effective agent of change in behavior than another. Research directed toward an understanding of these factors, through a careful observation of good, bad, and indifferent workers, is certainly called for. We need not, however, wait until research provides the answers. The opinions of good motivators can be more instructive than schematic models of the adoption process or abstract discussions of "leadership patterns," "motives," "needs," "roles," and "innovations." Training in this area must be thoroughly practical, emphasizing not only *what* the worker is expected to tell the client but *how* the client must be talked to. Imaginary dialogues with clients or meetings with small groups can be presented by "role-players," either directly or through tape recordings.³⁷ Simulated approaches and client reactions can be grouped into a number of prototypes. Let me mention a few examples: (1) Discuss folk methods of contraception which are commonly known and stress that a large number of good, respectable, and sensible people have only a few children because they quietly practice one of these methods or a modern substitute; not because they are more lucky or less fecund. Present modern contraceptives as improvements over traditional and popular methods; present them as tactics that others are already employing to their great advantage. (2) Take advantage of a woman's eagerness to talk about pregnancies, abortions, and post-partum problems to explain that she can live a healthier and more relaxed life by spacing births (for the over-worked and not-too-well mothers). (3) Remove the client's fears arising out of false and exaggerated rumors of side effects. Explain how the IUD gets a bad name when women conceal early pregnancy from the doctor who conducts a pelvic examination and accept an IUD to induce abortion. (4) Explain that vasectomy does not reduce virility and sometimes increases it. (5) If mistrust of clinical methods is too strong, settle for a simple conventional method as a beginning (for those who

want to plan but are apprehensive about specific methods).

Such motivational prototypes, carefully adapted to a variety of needs, feelings, and sentiments, and adjusted to diverse situations, must be mastered by trainees. Intensive classroom instruction should be followed by training in the field and testing.

Trainees must not be overwhelmed with physiological and anatomical details of reproduction. The average client in our country is not interested in knowing exactly how a contraceptive device works. The client is primarily interested in knowing if a method works, how well, and with what consequences to health and safety. Training in the facts about contraception should enable the worker to answer such questions convincingly and confidently, without making use of diagrams and charts. Such materials prove more distracting than useful, for both the client and the field worker.

Training for filling in forms and records needs practice more than mere instruction. For every group of 36 man-woman teams, appoint a permanent training officer for continuous training and guidance.

SALARY AND INCENTIVES

Before the field worker is put on his job he should be told about his basic salary and the part of income that is tied to performance. It has been found that a basic salary of Rs.100 (\$21) per month plus an opportunity of augmenting this income through incentives is a sufficient attraction for recruiting both men and women possessing the prescribed level of literacy.

A good incentive system for the field worker should simultaneously serve two purposes: (a) act as an inducement for enlarging the circle of acceptors; and (b) reward the efforts leading to continued "no-birth" in the acceptor's family. It should be tied to the qualitative as well as the quantitative measures of performance.

It is sometimes argued that an incentive system for field workers can operate without risk of abuse if the referral fee paid to a worker exactly equals what the client pays for the service. The assumption behind this proposition is that no incentive payment will be claimed falsely, if for each claim the worker will have to show a deposit of an equal amount recovered from the client as a service charge. At present, it is not possible in Pakistan to balance incentive payments and service charges without either losing the incentive value of the amount paid to the worker or making

contraception too expensive for those who need it most.

The instigation of an incentive system requires supervision, not only to check fraudulent reporting but also to confirm the outcome of genuine performance. A Program Audit Officer, assisted by a woman paramedical worker, will be assigned to check performance in an area covered by 36 field work teams.

The incentive plan proposed below is designed to maximize supervision using available resources and to make it possible to relate the field workers' incentive earnings directly to their contribution to fertility limitation.

(1) Charge a minimum amount of paisa 50 for every supply made and for every service rendered to a client. (This will mean charging paisa 50 for the IUD which is now free of cost and selling a minimum of a dozen lubricated or two dozen non-lubricated condoms at a time. Spermicides are already sold in bottles costing paisa 75 and Rp.1.00.)

(2) Deposit all sale proceeds and clinical fees in the incentive account of the two-member team.

(3) Ask the teams to list every month all acceptors who have not had a birth in the family for one year since the date of initial acceptance or the date the client reported continuance of a method already practiced. (This means that no incentive payment is to be made for the account till the first client in the operational area completes a year of "no-birth.")

(4) Verify the correctness of the team's list (100 percent checking by the Family Planning Officer and 25 percent by the Program Audit Teams is logistically possible even when one-third of all eligible couples are reported to be successful acceptors).

(5) Work out basic incentive payments on the following scale:

- (a) IUD: Rs.1.50 for the first year of "no-birth" in the acceptors' family, Rs.2.00 for the second, Rs.2.50 for the third, followed by a reinsertion and a repetition of the payments at the above scale. (The payments on this time scale will average out to nearly the same as the referral fee of Rs.2.50 now being paid for all insertions.)
- (b) "Conventionals" and "pills": 50 percent of the value of com-

modities sold to "no-birth" acceptors after first year of "no birth," 75 percent after the second, 100 percent after the third, 125 percent after the fourth, 150 percent after the fifth and subsequent years. (Savings in the first two years will balance the difference between sale proceeds and amounts paid to the worker in the fourth and fifth year. The additional 50 percent paid beyond the fifth year will come from sales made to unsuccessful contraceptors.)

(6) Divide the above amount equally between the two members of the team adding a bonus equal to each worker's share, subject to a maximum of Rs.300 per year per worker. With some experience it will be possible to define norms of good, fair, and poor performance in a realistic manner. The ratio of bonus to basic incentive, instead of being 1:1, may then be varied for different levels of earnings, the worker earning a larger amount in basic incentives getting a bonus at a higher rate.

(7) To give the paramedical worker an interest in follow-up of IUD cases during the first year following insertion, which is relatively more critical in terms of retention, a fee of Rs.2.00 may be paid on insertion and another Rs.2.00 after verification of "no birth" for one year.

(8) For sterilization, it is unnecessary to alter the existing system because continuation is not a factor of success. The Family Planning Officer will continue to verify each reported operation, and the inspection teams will give priority to vasectomy and tubal ligation cases in their sample checking of the Family Planning Officer's certificates.

The advantages of the incentive system proposed above are: (1) emphasis on output rather than input; (2) emphasis on continuity of contraception and post-acceptance care rather than on initial acceptance; (3) increase in financial liability; (4) flexibility permitting periodic readjustments; (5) 100 percent verification of the reported success of contraception at the immediate supervisory level and adequate sample audit of the supervisor's performance by the local/regional/provincial/central inspection teams; (6) no possibility of field workers' making deposits against false sales, because they risk losing their money if the reported clients conceive; (7) adequate inducement for pro-

moting conventional contraception without losing stress on more reliable clinical methods; (8) quick measurement of performance, in quality and quantity, through the index of the team's monthly income from incentive, (9) cooperative effort between male and female workers on the one hand and between the team and paramedical workers on the other, all of whom are interdependent for the incentive income; (10) less wastage of contraceptives because sales will not exceed actual requirements; (11) a system oriented toward rewarding the efficient rather than toward punishing the incompetent; (12) progressively increasing rewards reinforcing the field workers' involvement in the program.

We are currently examining the possibility of providing an incentive to inspection teams for detecting fraudulent clinical cases by paying them the amounts falsely claimed by medical, paramedical, and field staff.

The dai will cease to receive the fixed monthly salary of Rs.15.00 per month. She will still be available to assist the field worker in an unofficial capacity for such remuneration as worker and dai mutually agree upon with respect to IUDs and "conventionals," but the field worker will be solely responsible for clients' staying nonpregnant.

RECORD-KEEPING

The team's first assignment in its area of responsibility is to prepare the register of all households mentioned earlier, indicating the full personal particulars of the head of the household (as defined in the census), the particulars of married couples in the household with names of the spouses, name of the husband's father, husband's tribe or caste, husband's profession, ages of the husband and wife (as reported and as estimated in case the reported age is grossly incorrect), total number of children in each family, number of male children, and age of the youngest child. Experience has shown that on the average 25 to 30 households per day can be registered by a team in West Pakistan and the task can be completed in an area with a population of 10,000-12,000 in three months. Constant supervision and 20 percent sample checking by the Family Planning Officers is essential at this stage to ensure that no households are left out. There should be no concentrated effort to enlist clients until registration is complete. Each village in rural areas and each ward in urban areas should have its own house-

hold register, one copy of which should be with the male worker and another with the female.

The register should be kept up to date, reflecting changes in the target group arising out of marriage, death, and migration. This may be done periodically or as a continuing process. For out-migrants a postal arrangement for reviving contact at the new address should be worked out.

After the Family Planning Officer has weeded out ineligible couples by looking up their ages and the age of their youngest child, the team begins its contact program by visiting each household and later by meeting with small groups, possibly at the house of a neighbor in the case of women, or a shop or village assembly place in the case of men. Each of two workers can contact up to 20 persons in a day; thus, it should be possible for them to visit every husband and wife in their area at least once in three months.

Post-registration dated entries for each eligible couple will fall into the following categories:

1. A concise statement of the client's response to the educational effort which should cover: (a) reasons for rejecting family planning or for rejecting specific methods that are presented (barriers); (b) reasons for nonacceptance at a particular time such as desire for more children, current pregnancy, absence of spouse; (c) reasons for indecision, such as uncertainty about the attitude of spouse, of friends and relatives, or conflicting motives. If a client accepts a method, the worker's opinion of the client's motive for acceptance should be recorded. This information will assist the Family Planning Officer in selecting the cases that need his personal attention and those that need to be contacted again by the worker with a modified approach specific to the client's values, beliefs, fears, prejudices, personal problems, and situational factors that influence decision. Information on these points for the group as a whole can help research workers to improve the content of training and to suggest structural changes in the program.

2. Entries recording the type of contraception accepted, particulars of the clinic from which the client is served, quantities of supply sold, and recoveries made against sale/service. This information will help in working out incentive payments and in planning services and supplies in accord with local patterns of preference and demand.

3. Entries of follow-up findings covering reasons for discontinuation; reasons for change from one method to another; side effects reported; and action taken to treat the more serious side effects and to create better tolerance of minor side effects. This information will both ensure better supervision of follow-up and provide an insight into factors that generally affect continuation. The latter may be either "user factors" or "program factors." A study of "user factors" can furnish important clues to the nature of support, encouragement, information, and interpretation needed to reinforce motives for continuation. Investigation of "program factors" can lead to modifications in such elements as policies, procedures, and volume and quality of services and supplies.³⁸

4. A record of additions in the families of registered eligible couples. These entries should be made for couples who have been contacted but have not accepted a method. Entries can be made any time but have to be verified by the Family Planning Officer every month for those *acceptors* who are reported to have completed one year of "no birth." Abortion (which in any case is difficult to verify) will count as "no birth," but still-birth will count as birth. Birth is such a public event in our rural and even urban communities that verification is no problem. This record will provide a measure of the impact of contraception on fertility as well as a comparative index to fertility levels among noncontraceptors.

The field workers should understand the rationale of documentation and perceive the relevance of each recorded fact to their own task. Record-keeping standards deteriorate rapidly when records are not meaningful to the persons who keep them.

The monthly report emerging from the team's register should reflect the size of the target group, current and progressive totals of persons contacted, acceptors (by method), participants completing one year or more of no birth, number of acceptors followed up, and drop-outs.

GROUP COMMUNICATION

The team of field workers should work with local groups as well as with individuals. Experience here and elsewhere has shown that assembling groups exclusively for a discussion on family planning is not an easy undertaking. Such meetings are possible only when there is a pre-existing need to know more about family planning

and when inhibitions on public discussion of reproduction have been largely overcome. However, if a group meets for a purpose other than discussing family planning, it is always possible to introduce the subject and sustain an interest in it. Family planning becomes a meaningful subject for public discussion when presented within the context of individual and communal welfare in general, as a segment of a larger frame of reference, like agricultural productivity, health, education, or nutrition. It is therefore essential to train the teams in initiating group activities like literacy classes, health education campaigns, and extension of better farming practices. The "extra-curricular" functions that a team may undertake will vary with local conditions. The local leadership that will emerge out of such activities will also provide a stimulus to the local family planning movement.

The next five-year plan is based on the type of field structure outlined above. It is designed to approach all eligible couples in the country; to maintain regular and continued contact with them; and to report systematically on the outcome of each such contact. Our new approach by no means guarantees that the effort will succeed or succeed entirely. But if we fail we will know why we have failed, where we have failed, and to what extent we have failed. And we will know this long before it is too late to change our approach.

¹ J. M. Stycos, "A Critique of Traditional Planned Parenthood Approach in Underdeveloped Areas," in *Research in Family Planning*, Kiser, ed. (Princeton: Princeton University Press, 1964), pp. 482-483, and sources cited by author.

² *Ibid.*, pp. 482-483.

³ S. A. Jafarey, J. G. Hardee, and A. P. Satterthwaite, "Use of Medical-Paramedical Personnel and Traditional Midwives in Pakistan Family Planning Programme," *Demography*, 5 (2):676, 1968. Other studies estimate between 0.85 to 1.4 cases per month against a target figure of 2.5.

⁴ P. E. White, "Urban Dai Organizers: Performance and Attitudes," *Pakistan Journal of Family Planning*, 2 (1):8, 1968.

⁵ L. L. Bean and W. Seltzer, "Couple Years of Protection and Births Prevented," *Demography*, 5 (2):947-959, 1968.

⁶ United Nations, *Report on the Evaluation of the Family Planning Programme of the Government of Pakistan* (New York, 7 April 1969). The report, however, recommends replacement of the

dais by better trained and qualified full-time workers.

⁷ Family Planning Division, Government of Pakistan, "First Preliminary Report, Pakistan National Impact Survey" (Islamabad, 1969), unpublished. Seventy-six percent of currently married women in the portion of the sample analyzed knew of family planning as a method to prevent or delay birth. Analysis of the full sample is now nearing completion.

⁸ L. Saunders, "Promotion of Family Planning Practice," in *Population Control, Implications, Trends and Prospects*, N. Sadik et al., eds. (Islamabad: Pakistan Family Planning Council, 1969), p. 411.

⁹ A. H. G. Qudus, J. W. Ratchliffe, and H. T. Croley, "Follow-up Study of Vasectomy Clients in East Pakistan," *Pakistan Journal of Family Planning*, 3 (2):38-48, July 1969.

¹⁰ S. A. Jafarey et al., *op. cit.*, p. 677.

¹¹ J. M. Stycos, *op. cit.*; D. J. Bogue, "Some Tentative Recommendations for a Sociologically Correct Family Planning Programme," in *Mass Communication and Motivation for Birth Control*, D. J. Bogue, ed. (Chicago: Community and Family Study Centre, 1967), pp. 90-130; and G. Cernada and T. Huang, "Taiwan Training for Family Planning," *Studies in Family Planning*, 1 (36):1-6, December 1968.

¹² In Singur, India, flash cards were developed to appeal to this motive.

¹³ J. Hill, J. M. Stycos, and K. W. Back, *The Family and Population Control* (Chapel Hill: University of North Carolina Press, 1951).

¹⁴ J. Asplund, "Technical Assistance for Family Planning Project in Rural Areas in Ceylon," paper presented at the Sixth International Conference on Planned Parenthood, London, 1959.

¹⁵ C. Chandrasekaran, "Fertility Survey in Mysore State, India," in *Current Research in Human Fertility* (New York: Milbank Memorial Fund, 1955).

¹⁶ J. M. Stycos, *op. cit.*, pp. 482-483.

¹⁷ For pertinent research in Pakistan, the reader is referred to the following

(1) Two studies by the NRIFFP, Karachi, "Knowledge, Attitude, and Practice of Wives and Husbands Among PIA Employees," *Pakistan Journal of Family Planning*, 2 (1):28, 1968 and a similar study in *The Second Biannual Seminar*, October 1968. These studies reported interest in family planning by sex of respondent as follows: males 92 percent and females 94 percent, in a sample of 325.

(2) A study by the Central Family Planning Evaluation Unit, Lahore, "Knowledge, Attitude and Practice of Family Planning in West Pakistan," *Pakistan Journal of Family Planning*, 1:1-10, July 1967. In this study, 94 percent of the women and 89 percent of the men responded positively on the attitude question, in a sample of 1,584 men and 1,674 women from 23 districts in West Pakistan.

(3) "Second Current Information Survey on KAP" (mimeo). In this study, near equality in male and female response on knowledge and attitude was found in a sample of 1,339 currently married men and 1,586 women.

(4) In a study by the Family Planning Association of Pakistan, University of the Punjab,

1961, 43 percent of the men and 15 percent of the women knew of family planning in a sample of 989 men and 190 women.

¹⁸ D. C. Dubey and H. M. Choldin, "Communication and Diffusion of the IUCD," *Demography*, 4 (2):613, 1967.

¹⁹ L. W. Green, "Study of Users, Sometime Users and Non-Users of Contraceptives in an Urban Sample," *Statistical Report, Number 2*, mimeo, (California: University of California, Berkeley, School of Public Health).

²⁰ D. J. Bogue, *op. cit.*

²¹ J. M. Stycos, *Family and Fertility in Puerto Rico* (New York: Columbia University Press, 1955), p. 205.

²² R. W. Carlaw, R. Reynolds, L. W. Green, and N. I. Khan, "Underlying Sources of Agreement and Communication Between Husbands and Wives in Dacca, East Pakistan," Doctoral Research Training Project in Health Education, University of California, Berkeley, 1969 (mimeo).

²³ H. N. Gardezi, "Midwife as a Local Functionary and Her Role in Family Planning," a monograph of the Family Planning Association of Pakistan, (typed, 1967).

²⁴ H. T. Croley, S. J. Haider, S. Begum, and H. C. Gustafson, "Characteristics and Utilization of Midwives in a Selected Rural Area of East Pakistan," *Demography*, 3 (2):578-580, 1966.

²⁵ *Ibid.*, p. 580.

²⁶ W. Zaidi, "A Comparison of the Characteristics of Full-time and Part-time Organizers," *Pakistan Journal of Family Planning*, 3 (2), July 1969.

²⁷ J. H. Nelson, S. J. Haider, and S. F. Radelfinger, "Characteristics and Job Practices Associated with Successful Female Village Organizers in Joydehpur," East Pakistan Research and Evaluation Centre, 1968 (mimeo)

²⁸ Personal communication from S. Walliullah, Director, Central Evaluation Unit, Dacca.

²⁹ P. E. White, *op. cit.*

³⁰ Out of 107 literate women hired to date, 35 were matriculates; 52 had completed middle school; 12 had completed primary school; and 8 were literate but had had no formal schooling.

³¹ The Population Council, East Asia Field Office, Tainchung, Taiwan. "Incentives," Working Paper No. 5.

³² J. H. Nelson et al., *op. cit.*

³³ *Ibid.*

³⁴ *Ibid.*

³⁵ University of Karachi, Department of Social Works and Sociology, "The Role of Dais in Family Planning," *Inventory of Family Planning Research in Pakistan*, National Research Institute of Family Planning, June 1969, p. 196.

³⁶ B. J. Roberts and W. Griffiths, "The Need for Educational Innovation and Research in Family Planning Programmes," in *Population Control, Implications, Trends, and Prospects*, N. Sadik et al., eds. (Islamabad: Pakistan Family Planning Council, 1969), p. 399.

³⁷ West Pakistan Research and Evaluation Centre, Lahore, "Tape Playback Machine Project," 1969 (mimeo).

³⁸ L. Saunders, *op. cit.*, pp. 404-411.

"Maximum Acceptance Study"
 excerpted from 1971 Year
End Report, Taiwan Provin-
cial Committee on Family
Planning, Taichung, May 1972

(Editor's note: As noted in the items following annotations 8 and 9, Taiwan has had extensive experience with field application of incentives and bonuses. Whereas incentives in some countries act as a ceiling to recruitment because no payment is received for achievement above targets, Taiwan gives special incentives to field staff for exceeding targets.

The system which operates island-wide scores every field worker on her performance monthly using the following rating system:

<u>Activity</u>	<u>Units</u>
IUD acceptor over 30 years of age	1.0
IUD acceptor less than 30 years old	1.2
One pill cycle distributed	0.1
One condom dozen distributed	0.16

Every worker receives a monthly target in terms of units. This target is based on the eligible population in her geographical area, and on past performance. If she exceeds her target she receives a bonus which gets proportionately larger as she continues to recruit IUD acceptors or pass out conventionals. She is therefore motivated to report all of her clients each month, rather than to save them for future months.)

The article reprinted here is a partial report on an ongoing field experiment. It shows very concretely the impact that an incentive can have on recruitment. Among women who were not sterilized or practicing contraception, who did not want more children and were not pregnant (the "real" eligible population), the overall acceptance rate in the incentive area was 44 percent as compared to 21 percent in the non-incentive area. The loop acceptance rate was over three times as great in the incentive area as in the non-incentive area.

2. a. Maximum Acceptance Study

The second step - home visiting - of the maximum acceptance study was completed in early September. The first step of this study was a mailing to all women in the sample, which consisted of all women interviewed in KAP III who were not sterilized or using an IUD at the time of the interview. All the women who did not accept a contraceptive method in the first step of this study were visited by PPH workers to encourage them to accept a contraceptive method. In half of the 56 sample townships, an incentive was paid to the field workers based on the number of cases recruited NT \$100 (US \$ 2.50) was paid per loop acceptor and NT \$20 (US \$.50) per pill acceptor. In the other half of the 56 sample townships, no incentive was provided for the field workers as a control.

Table 1

Area

Acceptance rate: All method

<u>Eligibility definition a</u>	<u>All</u>	<u>Incentive area</u>	<u>Non-incentive area</u>
1	11	20	7
2	14	26	10
3	18	33	12
4	20	36	14
5	27	44	21

Acceptance rate: LOOP

1	4	9	2
2	5	11	3
3	7	14	3
4	7	15	4
5	10	19	6

Acceptance rate: PILL

1	7	11	5
2	9	15	7
3	11	19	9
4	13	21	10
5	17	35	15

a/ eligibility definitions are as follows:

1. All women in this study (1,214 cases)
2. Excludes women who were sterilized or have had an IUD insertion at time of home visit.
3. Excludes those who wanted more children
4. Excludes those who were pregnant at time of home visit
5. Excludes those who were using satisfactory contraceptive method at time of home visit.

Of course, acceptance rates rise steadily as we narrow the population considered to the more eligible women. The most eligible group (eligibility definition 5) had a total acceptance rate of 27% as compared to 44% in the incentive area and 21% in the non-incentive area. The acceptance rate in the incentive area is twice the rate of the non-incentive area. For loop only the increase is from 4% to 10% overall; from 9% to 19% in the incentive area, and from 2% to 6% in the non-incentive area. Here we can see the largest difference in the acceptance rates between the incentive and non-incentive areas. As Table 1 shows, the loop acceptance rate in the incentive area is over three times as great as the rate in the non-incentive area. For the pill the increase is from 11% to 35% in the incentive area and from 5% to 15% in the nonincentive area. Quite obviously, then, incentive payments have made a difference in the acceptance rates of contraception.

A brief summary of the findings from this study to date are presented below:

- 1) There is a much higher initial intention rate as well as actual acceptance rate for the incentive area than the non-incentive area.
- 2) The loop acceptance rate in the incentive area is over three times the acceptance rate of the non-incentive area in each of the eligibility classifications.
- 3) There is considerable discrepancy between oral intentions and actual behavior.
- 4) Contraceptive use increased from 12% (traditional methods only) at the time of KAP III to 36% at the time of the first field follow-up of this study 9 months later.

Table 2.
Incentive Area

Characteristics	Initial intention Total	Acceptance rate (all method)	IUD Acceptance rate	PILL Acceptance rate
All women	100%			
<u>Age of women</u>				
20-24 b	75%	35%	15%	20%
25-29	43	22	7	15
30-34	69	34	18	16
35-39	72	36	14	22
40+	59	54	17	17
<u>No. of living children</u>				
0 b	0	0	0	0
1 b	30	11	0	11
2	58	33	11	22
3	60	28	15	13
4	82	46	15	31
5+	72	35	23	12
<u>Additional children women want</u>				
No more	81	40	23	17
More	35	19	2	17
<u>Current use status</u>				
Using unsatisfactory				
method	100	66	16	50
Not using	57	28	13	15
<u>Women' s education</u>				
No formal education	55	24	16	3
Primary school	62	32	11	21
Junior high school and above	63	41	18	23

a/ Excluding additionally women who were sterile

b/ Less than 100 cases

Table 3.
Non-Incentive Area

Characteristics	Initial intention Total	Acceptance rate (all method)	IUD Acceptance rate	PILL acceptance rate
All women	100%			
<u>Age of women</u>				
20-24 b	40%	4%	0%	4%
25-29	43	9	3	6
30-34	62	17	3	14
35-39	67	22	5	17
40+ b	60	23	7	16
<u>No. of living children</u>				
0 b	13	0	0	0
1 b	30	3	0	3
2	37	4	1	3
3	56	15	2	13
4	63	19	7	12
5+	80	23		15
<u>Additional children women want</u>				
No more	80	23	6	17
More	28	3	1	2
<u>Current use status</u>				
Using unsatisfactory				
method	100	61	2	59
Not using	49	9	4	5
<u>Women's education</u>				
No formal education	50	13	6	7
Primary school	55	11	2	9
Junior high school and above	50	16	0	13

a/ Excluding additionally women who were sterile

b/ Less than 100 cases

"Non-monetary Commodity Incentives in Family Planning Programs:
A Preliminary Trial"

Gordon W. Perkin, Studies in Family Planning, Vol. 1, No. 57,
September 1970

In commercial sales promotion campaigns merchandise is often offered as a reward to customers who take a specific action within a given time period, or as a prize to promotional or sales staff for excellent service.

These techniques have proven quite effective in many cultural settings. Therefore in Ghana it was decided to give a commodity which was valuable from a health standpoint as well as in terms of cost.

In the first and third weeks of a five-week study, powdered milk was offered to women who would come to the family planning clinic within ten days of receipt of a numbered coupon. During the second and fourth weeks of the program the field workers distributed only the regular numbered referral slips with no mention of the free milk offer. During the fifth week the free milk coupons were distributed, and in addition field workers competed on a point basis for prizes of powdered milk.

The powdered milk incentive was associated with a significant increase in the proportion of referred cases attending the clinic. The percentage of referrals who actually accepted family planning almost doubled when the incentive was offered to the acceptor, and almost tripled when incentives were offered to both acceptor and field worker. Additionally, the free milk offer increased acceptance to a far greater extent than it increased cost, thereby substantially reducing cost per acceptor.

The greatest number of new acceptors and the lowest cost per acceptor were obtained when the incentive was extended to field workers as well as to prospective clients.

Nonmonetary Commodity Incentives in Family Planning Programs: A Preliminary Trial

THIS report by Gordon W. Perkin, M.D., Program Adviser in Population, the Ford Foundation, describes the design and results of a recent study conducted by the Planned Parenthood Association of Ghana to evaluate a nonmonetary commodity incentive for family planning acceptors and field workers. The study was carried out with the assistance of Mrs. Rosina Konuah, Instructor Supervisor; Mrs. Gladys Azu, Co-ordinator; Dr. M. A. Barnor; and Dr. Perkin.

INTRODUCTION

A variety of incentive schemes has been proposed to improve the effectiveness of family planning programs. In general, the few that have been tried have been limited to monetary or cash incentives.¹ Monetary reimbursement to workers has perhaps been the form of incentive payment most widely used. Family planning workers in South Korea, Taiwan, India, and Pakistan have been at least partially reimbursed for patient referrals or for service.² Finder's fees have been offered in Egypt, India, Pakistan, and Taiwan to encourage satisfied patients or other ambitious members of the community who refer clients for family planning. Taiwan has experimented successfully with coupons offering free IUD insertions for a limited time. In the Taiwan experiment, the increase in patient recruitment more than offset the loss of income to the program, and cost per acceptor dropped during the period of free insertion. With the exception of Taiwan's free insertion coupon, patient incentives have usually been limited to small cash payments given to acceptors, ostensibly to cover transportation costs to the clinic (Pakistan), or as compensation for loss of time from work (India). It is generally agreed that a cash incentive offered to worker or patient will increase, at least temporarily, the number of patient acceptances. It is also agreed that incentives can be abused, particularly if they are viewed as a substitute for adequate patient information or care.

This report deals with a type of non-monetary incentive widely used in commercial sales promotion campaigns.³ The

commodity incentive may be defined as the offer of goods or merchandise of a recognized commercial value as a reward for taking a specific action within a given time period, or as a reward for achievement in a given undertaking. In Ghana, it was decided to evaluate the effectiveness of a simple commodity incentive in increasing the proportion of referred women who came to the clinic for service. In the preliminary trial a commodity that would have both a real and a symbolic value was selected. Whole powdered milk was chosen as it met both these requirements.⁴ The product selected was commercially available throughout the country and had a known value. The powdered milk was also selected for the symbolic value, to demonstrate to the mothers that family planning would help themselves and their children to a better life.

RATIONALE

In Ghana, as in most other countries, the number of women who actually come to the clinic for family planning services represents only a fraction of the women who accept a referral slip from the field worker. It was suggested that while many of these women are interested in adopting family planning, they lack motivation for taking immediate action. Most have not used family planning before and therefore find it easy to defer a decision that involves a potentially unpleasant as well as an unknown element. The following hypothesis was therefore suggested: if women could be offered an attractive reason for making an immediate decision to adopt family planning, the proportion of interested women who became acceptors would

increase.⁵ The study was thus designed to show whether the powdered milk offered would provide sufficient economic motivation for women to make a decision to adopt family planning within a specified time period. The incentive was not considered to be large enough to motivate a woman to accept family planning if she were not otherwise interested. The clinic registration fee of US\$1.00 would largely offset the potential economic gain to an otherwise uninterested woman. The study was also designed to demonstrate the possible effectiveness of a nonmonetary commodity incentive in improving the job performance of field workers who were employed on a straight salary basis.

STUDY DESIGN

The study took place over a five-week period in urban areas of Accra with five field workers from the Planned Parenthood Association participating. During the first and third weeks of the study, field workers distributed a numbered gift coupon to all women interested in family planning. The coupon advised the recipient that if she came for family planning within ten days she would receive free, a two-pound tin of powdered milk for her baby and herself. During the second and fourth weeks the field workers distributed only the regular numbered referral slip and did not mention the free milk offer.

During the fifth and final week of the study, the free milk coupons were again distributed and, in addition, the field workers were offered an incentive. They were told they would receive one point for each woman referred and three points for each woman who actually came to the clinic. The worker with the most points would receive six tins of milk, the worker with the second largest number of points would receive four tins, and the worker with the third largest number would receive two tins. The first prize was roughly equivalent to one week's wages for the worker and therefore represented a significant incentive. Evaluation of the results was facilitated by the fact that at the time

⁵ This same concept is expressed in a recent study from Hong Kong: "The problem . . . is not only to encourage [women] to accept the idea of family planning . . . the task is to precipitate a 'decision'" (R. E. Mitchell, "Hong Kong: An Evaluation of Field Workers and Decision Making in Family Planning Programs," *Studies in Family Planning*, 30.12, May 1968).

¹ R. W. Gillespie, "Economic Incentives in Family Planning Programs," mimeographed paper, Center for Population Planning, University of Michigan, Ann Arbor.

² "Incentive Payments in Family Planning Programmes," Working Paper No. 4, International Planned Parenthood Federation.

³ A. Haring and M. L. Morris, "Contests, Prizes, Awards for Sales Motivation," paper presented at Sales and Marketing Executives International, 1968.

⁴ A recent article by G. G. Graham points out that nonwhite races are frequently deficient in the intestinal enzyme needed to split lactose ("Biological Value of Foods Developed for World Nutrition Needs," mimeographed paper, School of Hygiene and Public Health, Johns Hopkins University, Baltimore). This finding explains the intestinal disorders frequently associated with the use of skim milk in which the lactose content is almost doubled. For this reason, whole powdered milk was used in the study.

of this study most of the public family planning services available in the Accra area were offered under the auspices of the Planned Parenthood Association. The field workers were given instructions at the beginning of each week. They did not know in advance either the duration of the study or the overall plan.

RESULTS

The results of this preliminary trial are presented in Table 1 and summarized in Table 2. The proportion of referred patients accepting family planning increased from about 11 per cent during the control weeks to slightly over 20 per cent during the weeks the patient incentive was offered. The addition of the worker incentive during the fifth week of the study was associated with almost a threefold increase in the proportion of referred patients accepting family planning, compared with the control weeks, and a 1.6-fold increase over the weeks in which only the patient incentive was offered. The powdered milk incentive was also associated with an increase in the number of patients referred as well as in the number of referred patients accepting family planning (Table 2). Twice as many patients were referred during the final week of the study as were referred during the control weeks. Most striking is the increase in the number of acceptances, which more than doubled during the patient incentive weeks and increased more than fivefold during the final week when patient and worker incentives were combined. This result suggests that the incentive offered to the field workers stimulated them to talk to more women during the week and that their talks were more convincing when the worker had a personal stake in the outcome. It must, however, be acknowledged that even though the workers did not know the duration of the study, a part of the increase during the final week may have been related to increasing community awareness of the existence of the free milk offer. The degree to which this awareness may have facilitated the field workers' performance during the final week is difficult to estimate. In any event, the increase in acceptances is sufficient to leave little doubt as to the overall effectiveness of the milk incentive.

The variation in the performance of individual field workers should also be noted (Table 1). With the exception of field worker C, who worked only half-time, each of the other workers was presumably working in the community on a full-time basis. A significant number of women

TABLE 1. *Family Planning Referrals and Acceptances, by Field Worker and Trial Week, for Five-Week Period: Accra*

Field worker ¹ and trial response	First week (patient incentive)	Second week (no incentive)	Third week (patient incentive)	Fourth week (no incentive)	Fifth week (patient and worker incentive)
A					
Referrals	16	7	10	20	28
Acceptances	4	0	5	2	12
B					
Referrals	22	13	19	19	30
Acceptances	6	2	3	2	9
C					
Referrals	4	8	15	8	16
Acceptances	2	3	2	2	3
D					
Referrals	10	7	29	24	35
Acceptances	1	0	5	1	9
E					
Referrals	21	22	30	13	30
Acceptances	3	2	5	2	12
All field workers					
Referrals	73	57	103	84	139
Acceptances	16	7	20	9	45
Per cent of referrals accepting	21.9	12.2	19.4	10.7	32.4

¹ Field workers are identified by letters A through E.

TABLE 2. *Trial Response, by Type of Incentive*

Trial response	Type of incentive			Ratio		
	Control ¹ (A)	Patient incentive ² (B)	Patient and worker incentive ³ (C)	B/A	C/A	C/B
Referrals	70	88	139	1.3	2.0	1.6
Acceptances	8	18	45	2.3	5.6	2.5
Per cent of referrals accepting	11.3	20.5	32.4	1.8	2.9	1.6

¹ Average of second and fourth weeks, when no incentive was provided.

² Average of first and third weeks.

³ Fifth week.

have appeared at the clinic without referral slips but have given the name of one of the field workers as the source of referral. The field workers also acknowledge that they have often discussed family planning with a woman but have not given her a referral slip if she has not appeared sufficiently interested. Thus, the performance of the field workers cannot be judged entirely on the basis of the results of this study. It would appear nevertheless from the accomplishments of the field workers during the final week of the experiment that the incentive considerably enhanced their performance. The response to the worker incentive suggests the desirability of relating reward to accomplishment on a regular basis. For example, the workers could be

given an opportunity to earn an additional reward for each patient referred above a monthly quota.

The powdered milk incentive not only increased the proportion of referred women accepting family planning, but also shortened the time between referral and acceptance. Thirty-six per cent of the women accepting family planning during the weeks the milk coupon was offered came to the clinic either the day they received the coupon or on the following day (Table 3). Referral slips issued during the control weeks continued to be presented at the clinic for as long as two months after they had been issued.

A further, very rough control was introduced by comparing the total number of

TABLE 3. *Acceptors, by Interval between Referral and Acceptance When Incentive Was Offered*

Interval (in days)	Acceptors	
	Number	Per cent distribution
Same day	15	19
1	14	17
2	10	12
3	5	6
4	9	11
5	7	9
6	8	10
7	5	6
8	5	6
9	2	3
10	1	1
All intervals	81	100

new patients (direct and indirect acceptors) during the trial period with the number of those who attended the clinic during comparable five-week periods before and after the trial. It should be emphasized that a significant proportion of new patients are referred to the clinic by friends rather than by field workers. The total number of new patients thus reflects not only efforts of the field workers but also recruitment from a variety of other sources. During the five-week period preceding the trial an average of 30 new patients (from all sources) was seen each week. During a comparable five-week period beginning one month after the trial had ended, an average of 31 new patients was seen each week. During the five-week trial period the weekly average of new patients from all sources was 36, representing a 20 per cent increase over the two control periods. This figure does not reflect the full impact of the incentive, since during two of these five weeks no incentive was offered and since a number of the clients who received referral slips during the fifth week came to the clinic the following week and thus are not included in this calculation. Nevertheless, the results suggest that the incentive may have contributed to an increase in overall clinic attendance as well as in the proportion of referred patients coming for service.

COST BENEFIT

The economic aspects of the incentive trial were also considered. In each of the five weeks the basic costs remained the same. These costs included field workers' salaries, transportation allowance, and supervisory costs. Office and clinic ex-

penses were not included in the calculation. The milk represented the only additional cost during the weeks the milk coupons were issued. The powdered milk was purchased in quantity at a cost of US\$1.38 per unit. The cost per new acceptor during each week of the study is shown in Table 4. It will be noted that the lowest cost per acceptor was achieved during the final week when the combined patient and worker incentives were offered. The cost of US\$3.47 per new direct acceptor, or acceptor who had been given a referral slip, is somewhat higher than the US\$2.50 cost per acceptor reported from Taiwan. However, this cost is probably justified in a country where family planning is neither widely known nor widely practiced. The cost per new acceptor during the two weeks the incentive was not offered appears high and is at least partly the result of not including the indirect acceptors, or those who subsequently came to the clinic without having been given a referral slip. Since indirect acceptors were not eligible for the milk incentive, they have been excluded throughout the study. The costs per acceptor, therefore, appear to be somewhat higher than is, in fact, the case. The important observation is that the relative cost per acceptor was most favorable when the patient and worker incentives were combined. Thus, the cost of the commodity incentive was more than offset by the increased number of acceptances. The incentive also contributed to more complete use of the clinic staff and facilities during the period the incentive was available.

DISCUSSION

The preliminary trial of a commodity incentive described in the foregoing sections leaves a number of important questions unanswered. Was the milk incentive more or less effective than other incentives that could have been selected? Would the effectiveness of the incentive decrease if offered on a longer term basis? Would the milk be as acceptable to rural women as to urban women? What are the contraceptive continuation rates for women responding to the incentive as compared with women accepting family planning without the incentive? What would be the effect of the worker incentive alone? Would incentives offered in one program curtail activities of another program that did not offer them? It is hoped that the answers to these and other questions may be obtained during the coming months.

Additional studies are also suggested, including the trial of a commodity incentive program for government field workers in which they would accumulate points for each patient referred and for each continuing user. The points accumulated would be converted to merchandise selected by the worker. The commodities offered in such a program would help the worker do a more effective job as well as offering her a personal reward. Tape players, for example, would meet these requirements. Tape cassettes with a family planning message on one side and popular music on the other, could be offered in exchange for a specific number of referrals. In some areas, bicycles or motor scooters would

TABLE 4. *Cost of Trial per Direct Acceptor,¹ by Item and Week, for Five-Week Period*

Item	First week (patient incentive)	Second week (no incentive)	Third week (patient incentive)	Fourth week (no incentive)	Fifth week (patient and worker incentive)
Basic cost ²	\$77.63	\$77.63	\$77.63	\$77.63	\$77.63
Cost of milk incentive	\$21.88	—	\$27.60	—	\$62.10 (patients) \$16.55 (workers)
Total cost	\$99.51	\$77.63	\$105.23	\$77.63	\$156.29
Number of direct acceptors	16	7	20	9	45
Average cost per direct acceptor	\$6.22	\$11.09	\$5.26	\$8.62	\$3.47

¹ A direct acceptor is an acceptor who was given a referral slip.
² Salaries and transport.

improve job performance and offer a personal reward to ambitious workers.

The results of this preliminary trial suggest that nonmonetary commodity incentives may have considerable potential in family planning programs. Government employees in some countries are unable to accept cash or salary supplements for their work in family planning. These workers may be able to accept commodities in return for work performed, particularly if the merchandise offered will improve their job performance. Also, the commodities used in such a program are likely to involve a foreign exchange expenditure and may be available through one of the international agencies prepared to provide

commodity assistance to family planning programs. Another advantage of the commodity incentive is its flexibility. Special contests can be held at intervals. Incentives can be changed from time to time, or made easier to obtain. Since the workers' salary is unaffected by the incentive, greater administrative flexibility is possible. It is important, however, that each country consider the potential disadvantages, as well as the advantages, of a commodity incentive program before introducing it on a national basis.

SUMMARY

The effectiveness of a nonmonetary commodity incentive in increasing the

proportion of referred patients accepting family planning has been evaluated in a private family planning clinic in Ghana. The powdered milk offered to prospective acceptors as the incentive in this trial was associated with a significant increase in the proportion of referred cases attending the clinic. The greatest number of new patients and the lowest cost per direct acceptor were obtained when the incentive was extended to the field workers as well as to the prospective client. The results of this small-scale preliminary study are encouraging and would appear to justify additional studies of the possible role of nonmonetary commodity incentives in family planning programs.

"The Ernakulam Vasectomy Campaigns"
Everett M. Rogers, Chapter 2
of Field Experiments in Family Planning
Incentives, forthcoming

(Editor's note: Although these campaigns promoted only vasectomy and tubal ligation, they provide lessons for countries where permanent methods are either not used or are not the primary means of conception control. For instance, if an improved intrauterine device (IUD) is developed it could be promoted through such campaigns, as could an injectable contraceptive, an implant, or even the "cafeteria" approach. The primary lessons to be gained from this program concern the mechanisms for promotion and service delivery, not necessarily the contraceptive methods used.)

In one district in India with a population of 2.4 million people, 22 percent of fertile couples with three or more children had been sterilized prior to the implementation of this program. The two special campaigns which were held in November-December 1970 and July 1971 raised this level of acceptance by 16 percentage points, reversing a downward trend in annual achievement, and overcoming a previous plateau in cumulative rates of adoption.

The adopter incentive paid as compensation for work time lost was equal to about 114 rupees*, half in cash, half in material goods, instead of the usual payment of 21 rupees cash to vasectomy acceptors. In addition the diffuser incentive was doubled from 5 to 10 rupees for these campaigns.

The most significant conclusions reached as a result of these campaigns are:

1. Well-organized family planning campaigns can achieve a large number of adopters, and probably a larger number than if equivalent efforts were devoted to non-campaign approaches.
2. The hard-core of non-receptive population that exists in a district after several years of the usual family planning efforts can be "cracked", and a plateau in rate of adoption can be overcome.
3. The lack of adequate informational and motivational activities is a more important constraint in achieving higher numbers of adopters, than the further provision of clinical and medical services.
4. The payment of relatively higher adopter (and diffuser) incentives played a very important part in achieving the impressive number of adopters in the Ernakulam vasectomy campaigns, especially those adopters who traveled from outside of the District.

* 1 rupee = U.S. \$. 13

Annotation 17a

5. Family planning incentives have a greater effect when they are paid "in kind" than when they are paid in cash.
6. The higher adopter (and diffuser) incentives paid in the Ernakulam vasectomy campaigns had a greater effect because they were offered as part of a campaign, and hence were accompanied by intensive promotional efforts which magnified their effects.
7. Relatively higher incentives lead not only to higher rates of adoption of a family planning method, but also to greater efficiency in cost per birth prevented, although not in cost per adopter.
8. The much higher rates of adoption of sterilization during the campaigns lead to lower-than-average rates of adoption during non-campaign periods.
9. The Ernakulam vasectomy campaigns mainly reached adopters who are relatively poor, but they are no poorer than the vasectomy adopters attracted in the non-campaign approach.

FIELD EXPERIMENTS ON FAMILY PLANNING INCENTIVES

By

Everett M. Rogers

Chapter 2

The Ernakulam Vasectomy Campaigns*

In a strict sense the Ernakulam vasectomy** campaigns of 1970-71 are less an experiment than an amazingly successful and novel program. There was no randomization of treatments to subjects, not a control group, nor were any hypotheses internationally tested. But there is no doubt about the success of the campaigns. In the third and largest campaign (in July 1971), 63,418 sterilizations were performed in a one-month period, which is 21 times the maximum number of sterilizations conducted in any one month in any other district in India since the inception of the vasectomy program in 1957. So this Ernakulam campaign was by far the most successful, and largest, in India, and probably in the world.

How was such a mammoth motivational task accomplished? One of the crucial ingredients was an adopter incentive about five times the usual amount (114 rupees instead of the usual 21 rupees for vasectomy). In this chapter of the present report, we discuss the role of these higher incentives in achieving the spectacular success of the Ernakulam campaigns, with a focus on what understandings were gained and on implications for future incentive experiments.

We begin, however, with a short description of the Ernakulam campaigns, and the various factors involved in their success.

In Chapter I of this report, we showed how a one-day pilot campaign in August 1970, in three villages in Ernakulam District,

*In addition to the author's interviews with S. Krishnakumar, the District Collector who organized the Ernakulam campaigns, and with Fred Shaw, the State of Kerala CARE Coordinator who assisted with the incentive payments, the present section is based upon the District Collector's report (Krishnakumar, 1971) and an analysis of the campaigns by Soni (1971).

**While we refer to the Ernakulam campaigns as "vasectomy" campaigns, several hundred tubectomies were also included in the number of adopters achieved.

Kerala State, India; was followed by a month-long campaign in November-December 1970, throughout the District; and by a second month-long campaign in July 1971. The three campaigns reached 746 adopters, 15,005 adopters, and 63,418 adopters, respectively.

The campaign approach to family planning has been tried in most countries, generally with modestly successful results.* In India, campaigns have been widely utilized for over 20 years to promote the adoption of agricultural, health, or family planning ideas. But none of these thousands of local campaigns have been as successful as the Ernakulam vasectomy campaigns. What factors underly its distinctive success? **

Higher Incentives -

1. The relatively higher incentives that were paid to the adopters and diffusers. Although the higher incentives paid in the Ernakulam campaigns were not the only reason for their success, we feel they were the most important single factor. Without the much higher incentive payments, we doubt that the Ernakulam campaigns could

*At least successful enough to suggest the proposition that: When multiple communication channels are used in family planning campaigns, they have greater audience effects than when each of the communication channels is used singly. When a number of different mass media and interpersonal channels are simultaneously carrying complementary messages to the same audience, as in a campaign, the changes in audience behavior by the channels in concert is greater than the sum of the effects of each. After reviewing several family planning campaigns, Schramm (1971, p. 35) concluded: "Discrete campaigns have much to recommend them as variations on a continuous program."

**Two oversimplified and, in our opinion, false reasons for the success of the Ernakulam campaigns given by some critics are 1) the misreporting of results, and 2) the extreme coercion of vasectomy adopters. We are convinced that the spectacular number of adopters actually was achieved, and that very few, if any, of the adopters were forced into a decision for vasectomy. Nevertheless, considerable persuasive influences were brought to bear in the campaigns.

have achieved anywhere near the record total of 79,169 adopters in the three campaigns.* This opinion of the importance of incentives in the campaigns' success is shared by the campaigns' organizer (Krishnakumar, 1971), independent analysts of the Ernakulam experience (Soni, 1971), and by the central government of India, who concluded that higher incentives should be paid in 25 additional district vasectomy campaigns that were patterned after the Ernakulam campaigns.

The incentives paid in the Ernakulam sterilization campaigns were about five times as high as the usual payments.

	<u>Adopters Incentives</u>	<u>Diffuser Incentives</u>
1. Usual incentive payments for vasectomy	21 <u>rupees</u> (\$2.80 U.S.)	2 <u>rupees</u> (\$0.27 U.S.)
2. November-December 1970, vasectomy campaign	86 <u>rupees</u> (\$11.47 U.S.)	5 <u>rupees</u> (\$0.67 U.S.)
3. July 1971, vasectomy campaign	114 <u>rupees</u> (\$15.20 U.S.)	10 <u>rupees</u> (\$1.33 U.S.)

Actually, the size of these adopter incentives in Ernakulam District were magnified in three ways: 1) the July 1971, campaign was timed by its organizers so that it occurred during the rainy season in Kerala State, when farmers are poorest and hungriest, 2) all government employees and most industrial workers in Ernakulam District who had a sterilization during the campaign were granted six days of paid leave (equivalent to about 30 or 40 rupees in wages), in which to recover, and 3) the July 1971 campaign incentive of 114 rupees included 40 rupees of "in kind"

*Some indirect evidence for this point is provided by a series of vasectomy campaigns conducted in 1971-72 in districts in Tamil Nadu, a state bordering Kerala and with approximately similar socio-cultural conditions. The Tamil Nadu district campaigns were patterned after the Ernakulam campaigns in that the district collectors were involved, and in other ways, but higher incentives were not paid. The number of adopters achieved in the Tamil Nadu districts were much less than in Ernakulam District, averaging about 8,000 per district.

incentives which represent a market value of about 55 rupees (as we show later in this section). Thus many of the adopters in the July, 1971, campaign received an adopter incentive equivalent to more than 174 rupees (\$23.20 U.S.), a rather considerable sum to a poor man.

The high incentives, coupled with the record number of adopters secured in the campaigns, meant that the total bill for incentive payments was very, very large. The total amount of incentives paid in the July 1971, campaign was over one million dollars (U.S.), including \$964,000 for adopter incentives and \$84,557 for diffuser incentives. This amount must stand as a world's record for one month of incentive payments; in fact, it is a larger total amount of funds than are paid annually in any national family planning incentive program except India's.

Direct Campaign Responsibility by the District Collector -

2. The District Collector assumed direct responsibility for the vasectomy campaigns. The District Collector (called "District Magistrate" in some parts of India) is the most powerful representative of government at the district level in India. He is a member of the Indian Administrative Service, the elite corps of civil servants, and is responsible for taxation, law and order, economic development, and all other government functions. Although family planning is officially part of the district collector's job, it is one of a great many responsibilities and it is largely delegated to the district family planning officer in most cases.

In Ernakulam District, however, family planning has a very high priority. The district is densely populated with 2.4 million people, unemployment is high, and natural resources are limited. Even though the District includes the seaport city of Cochin, it is highly rural. One indication of the importance of the population problem in Ernakulam District is the fact that it was chosen by the central government to be one of the 51 districts in India for an especially intensive family planning approach.* The importance of the population problem was also recognized by local leaders; at a District Development Seminar in August, 1970, family planning was given the highest priority of any development program in the

*The past performance of Ernakulam District in family planning activities is rather good; in fact, it ranked first or second of the 10 districts in Kerala State, prior to the vasectomy campaigns.

District. It was at this Seminar that the District Collector announced the month-long vasectomy campaign for November-December 1970 (the one-day pilot vasectomy campaign had already been held in three villages in July 1970).

At this time the 31 years old District Collector, Mr. S. Krishnakumar, had served in the District for 16 months; during this time he had directed several local campaigns concerned with land reform and other development issues. Campaigns for family planning had been held previously in the District; for instance, each year an official Family Planning Fortnight is held in every district in India.* So the choice of a campaign approach by the District Collector was not surprising, although he intended his efforts to be much more successful than previous campaigns.

One way to facilitate their success was to throw his personal power behind them. This direct involvement of the District Collector made the campaigns different than any previous family planning campaign in India: The Ernakulam vasectomy campaigns were an all-out effort of all local government officials. They were ordered to drop their regular duties to work on the vasectomy campaigns. So tax officials went door-to-door to motivate vasectomy adopters, government publicity officials devoted full-time efforts to mass media activities for the campaign, etc. As the government is probably the largest single employer in the District, and because these officials are organized to reach every citizen in the District with various services, the vasectomy campaign was well-staffed and soundly structured. And the campaigns were a total government effort, involving every ministry, not just those officials regularly assigned to family planning.

The District Collector's direct leadership of the campaign had other desirable consequences. First, it meant that the campaign was legitimized in the eyes of local citizens because the full authority of government was behind it. Further, the District Collector had the power to appeal successfully to various private bodies in the District for their assistance: Newspapers, to promote the

*The Family Planning Fortnights in Kerala State have had a relatively mild degree of success in that the past 11 Fortnights have averaged 5,800 adopters, about six times the usual rate of adoption per two-week period.

campaign; industrial leaders, to contribute toward the cost of the incentive payments, and to allow their workers who adopted sterilization to have six days' leave for recovery; legislators and other elected officials, to give talks promoting the campaign; etc. Thus the Ernakulam vasectomy campaigns were not strictly a government program, but also involved private institutions.

Lastly, the District Collector's direct involvement in the campaigns meant that considerable administrative and managerial skills were contributed. These were needed; on some days during the July 1971 campaign, as many as 2,800 sterilizations were performed per day. District Collector Krishnakumar has a Bachelor's degree in engineering, some post-graduate training in modern management, and several years of experience in government railways. His use of sound management principles in organizing the campaigns is shown by his insistence on written job descriptions for each official; his use of queing theory and other industrial management techniques to speed the long lines of men through the campaign sterilization center; and his establishment of a control room at this center to coordinate the various campaign activities, including the house-to-house contacts with individuals, transportation of adopters to the center, maintaining an adequate supply of doctors to perform the operations, etc.

Even though the District Collector was highly involved in directing the campaign, it did not demand his full-time efforts. Some 18-hour days were spent in organizing the campaign, but once it was underway, Krishnakumar delegated much of the operational details so that he only spent about one hour per day at the campaign center.

Krishnakumar's personal abilities were certainly a partial explanation for the Ernakulam campaigns' success. Unfortunately, there is only one Krishnakumar, and he cannot run vasectomy campaigns in every district in India. But the strategies and principles underlying Krishnakumar's campaigns can be identified, and used elsewhere.

Local Leadership -

3. Local community leadership was widely involved in motivating adopters of vasectomy. We have already mentioned that the Ernakulam campaigns were more than just a governmental effort; at

the local level, 501 committees were organized by the District Collector to contact potential adopters on a house-to-house basis, to conduct local public meetings to encourage participation in the campaign, and to concentrate campaign attention on selected sub-audiences in the District (like slum residents, industrial employees, low castes, etc.). Some of the local committees were the panchayats (governing councils) of the 101 administrative villages in the District, others were for cities or municipalities, and 300 were for the special sub-audiences.

Rather than contacting each of the 2.4 million residents of Ernakulam District, a hopelessly mammoth task, the persuasive efforts of the local committees were aimed at "eligible couples," parents who had two or more living children. The identification of the eligible couples was done by family planning officials before the campaigns began, and these lists were made available to the local campaign committees in each community. Thus the particular audience for the campaigns was specified and identified in advance.

Each village and municipality in the District was assigned a target number of sterilizations, computed as 6.5 per thousand population. Each of the villages were scheduled for a specific day during the campaign, so as to facilitate promotional activities and transportation of the adopters to Cochin. The campaign activities were concentrated entirely on one village or municipality during the day prior to its scheduled day for transportation of adopters to Cochin. Thus the persuasive efforts of the campaign were concentrated geographically in an intensive manner; further, the scheduling of villages by days at the operating theater helped control, and equalize, the daily load of operations. In the July 1971, campaign, however, about 60 per cent of the adopters came from outside of Ernakulam District, and these adopters could not be regulated, so some peak days in operations occurred. But extra doctors were kept on tap, who could be called on to meet such emergencies. Further, the sterilization center in the Ernakulam Town Hall stayed open at night until all those desiring operations were satisfied; on at least one day this meant staying open all night.

Higher Quality Contraceptive Services -

4. Higher quality contraceptive services were provided in the Ernakulam vasectomy campaigns. The higher quality services were facilitated by the central location of the campaign head-

quarters in the Ernakulam Town Hall building. This centralization also made it easier to maintain a quality control on the operations and attendant activities, which were organized much like an assembly line.

For example, each man who came to the center was first screened to be sure he met the legal requirements as to husband's and wife's ages, number of children, previous sterilization, or local infections or other diseases that would preclude vasectomization. In the November-December, 1970 campaign, 960 of the 15,965 individuals were rejected (6.0 per cent), and in the July 1971 campaign, 2,939 of the 66,357 individuals (4.4 per cent) were turned away. This strict screening is in sharp contrast to usual (non-campaign) practices, where up to 50 per cent of the sterilizations may violate at least one of the official eligibility criteria (Repetto, 1969).

So the campaigns' quality control over eligibility for sterilization helped avoid a usual consequence of paying adopter and diffuser incentives: Lower "quality" of the average adoption (Rogers, 1971a), that seems to often accompany the larger quantity of adopters.

Further evidence of the high quality of contraceptive services during the campaigns is provided by the relatively lower proportion of medical complications from the sterilizations. In the November-December, 1970 campaign, only 3 per cent of the adopters had minor complications requiring medical attention, and only 0.4 per cent of all adopters required hospitalization. In the July 1971 campaign the record was similar, although exact details have not been published.

Follow-up arrangements after the operation were especially detailed. The family planning staff and the local campaign committees were responsible for follow-up of each adopter within three days of the operation, again after ten days, once a week for the next month, and once a month for two years. There is no evidence that all of these follow-up visits were, and are, being made. Further, no follow-up arrangements were made for the approximately 60 per cent of the adopters in the July 1971 campaign who lived outside of Ernakulam District. Nevertheless, the efforts to follow-up adopters in the District are much more ambitious than for the usual vasectomy operation, and may have helped in preventing the usual negative rumors about the side-effects of a family planning method.

Festival Spirit -

5. A festival spirit was created in the Ernakulam vasectomy campaigns. Under ordinary conditions, the decision for vasectomy is a private one in India. The individual adopter may fear the ridicule of his friends and neighbors. He may perceive that he is taking an act not yet fully sanctioned by the norms of his community.

In the Ernakulam campaigns, these usual difficulties were overcome, in part, by creation of a festival spirit surrounding the decisions by thousands of men to undergo sterilization. The mass media were employed to convey the message that "Everybody's doing it" in the District. The concentration of the door-to-door persuasive activities on one community at a time helped create the impression that the vasectomy adoption decision was a popular one. The marshaling of adopters to travel together on one day to the operating theaters at Ernakulam City Hall also helped evince the mass nature of vasectomy adoption. Further, the adopters traveled or marched in parades, singing songs about family planning and displaying signs. After the operation various traditional forms of entertainment were offered to the new adopters to promote family planning.

These tactics helped 1) to convey the notion that sterilization was socially acceptable (thus changing the previous community norms), 2) to maximize the campaign effect of multiple communication channels acting in concert, and 3) to create a gay festival spirit on the part of the public, thus contributing toward the success of the campaigns.

Conclusions from the Ernakulam Vasectomy Campaigns -

What have we learned from the Ernakulam campaigns?

1. Well-organized family planning campaigns can achieve a large number of adopters, and probably a larger number than if equivalent efforts were devoted to non-campaign approaches.

2. The hard-core of non-receptive population that exists in a district after several years of the usual family planning efforts can be "cracked," and a plateau in rate of adoption can be overcome. In India the number of vasectomies peaked in 1967-68, and annual achievements had been decreasing for three years prior to the Ernakulam campaigns. The number of vasectomies performed per year in Ernakulam District had been decreasing

113a

for one and a half years, until the November-December, 1970 campaign. So the achievements of the Ernakulam campaigns are all the more impressive because they reverse a downward trend in annual achievements, and a previous plateau in cumulative rates of adoption (Figure 3).

Expressed in percentages, the achievements of the three campaigns are very impressive. Prior to the campaigns, 22 per cent of Ernakulam District's fertile couples with three or more children had been sterilized. Another 16 per cent adopted during the campaigns, making a total of 38 per cent (Soni, 1971, p. 2).

3. The lack of adequate informational and motivational activities is a more important constraint in achieving higher numbers of adopters, than the further provision of clinical and medical services. Many family planning officials in India have argued that "demand creation" for contraception is a less important factor limiting higher rates of adoption than the availability of medical/clinical services, and that once more adequate services are provided, the communication aspects of the family planning program will take care of themselves.

The Ernakulam vasectomy campaigns do not trace their success to providing more sterilization clinics; in fact, almost all of the operations were performed at one location. So the Ernakulam success seems due much more to an effective motivational effort,* than to just providing more clinical/medical services,** at least in the eyes of the campaign organizer (Krishnakumar, 1971, p. 76) and its most acute analyst (Soni, 1971).

*Most of the communication efforts in the Ernakulam sterilization drives were devoted to persuasion and motivation, as the previous five years of family planning mass media campaigns in India had already accomplished a high degree of knowledge about family planning.

**Although it is true that a higher quality of medical services were provided during the campaigns, as we argued previously.

4. The payment of relatively higher adopter (and diffuser) incentives played a very important part in achieving the impressive number of adopters in the Ernakulam vasectomy campaigns, especially those adopters who traveled from outside of the District.

We have previously argued the general importance of the higher incentives in achieving the campaigns' successes. This seems to be especially true for those adopters from outside of Ernakulam District.

The big surprise of the July 1971 campaign was the high response from individuals outside of Ernakulam District. The November-December, 1970 campaign reached 14,663 adopters in the District, and 342 from outside. Accordingly, the second campaign was targeted at a total of 20,000 sterilizations; 15,000 from Ernakulam District, and 5,000 from outside. However, the campaign actually achieved 63,418 adopters, of which 19,818 were from Ernakulam, and 43,595 from the nine other districts in Kerala State (and 5 from outside of the State). Most of the 43,595 were from adjoining districts, although 247 of them traveled an average of 180 miles from Cannannore District (Krishnakumar, 1971, p. 139)! In the three districts nearest Ernakulam, rates of vasectomization in the July 1971 campaign were more than half those achieved in Ernakulam District.*

The government officials in these other districts did not participate in the July 1971 Ernakulam campaign, and so there was no organized door-to-door contact by officials. Most of the other elements of the campaign, however, reached these audiences outside of Ernakulam District: The higher adopter and diffuser incentives, the high quality medical service, the many mass media messages about the campaign, etc. Further, transportation costs by bus or train were paid for each adopter and his accompanying canvasser, a policy that certainly encouraged adopters to travel to Ernakulam. Significantly, when this transportation cost was not paid in the November-December, 1970 campaign, only 342 of the 15,005 adopters traveled to Ernakulam from outside the District.

*The districts are Trichur with 12,363 vasectomy adopters, Kottayam with 11,585, and Alleppey with 10,743 (Krishnakumar, 1971, p. 139).

Thus, for an average extra cost of about 6.45 rupees (\$0.86 U. S.) per adopter (from outside the District), the July 1971 vasectomy campaign became essentially a Kerala State campaign, although headquartered in one district.

The 43,595 adopters from outside the District provide strong evidence for the recruiting power 1) of the higher adopter incentives, which provide a profit motive for the adopter, and 2) of the higher diffuser incentives (which were increased from the regular fee of only 2 rupees per adoption, to 10 rupees, during the second campaign). * An informal system of vasectomy canvassers already existed in the other nine Kerala districts; the higher incentives simply acted to energize this persuasive network. A great many of the non-Ernakulam District adopters were brought to Ernakulam by these canvassers.

In fact, the large number of non-Ernakulam adopters in the July 1971 campaign suggests that the recruiting efforts of government officials in contacting households, (and their legitimizing function), and the organization of the local committees, could be dropped from the campaign procedures, as long as higher adopter and diffuser incentives are paid.

5. Family Planning incentives have a greater effect when they are paid "in kind" than when they are paid in cash. This proposition needs a precise test. An experiment could be designed in which the two treatments are an equivalent money value incentive paid in two forms: 1) in cash, and 2) in kind. The dependent variable would be the number of adopters achieved with each kind of treatment. Or, the two types of incentives could both be offered to adopters to see how many would choose each kind.

Of the total adopter incentive of 114 rupees paid in the July 1971 campaign, 64 rupees were paid "in kind" -- as 3 kilograms of rice, a sari, a dhoti, a plastic bag (or bucket), etc. (Krishnakumar, 1971, pp. 146-147). The organizers of the Ernakulam campaigns argue that the "in kind" incentives were of greater effectiveness because:

*A similar diffuser incentive of 10 rupees (although accompanied by an adopter incentive of only 20 rupees) was paid in the nearby Tamil Nadu State vasectomy program; an effective canvasser system sprang up, which reached into adjoining states in the early 1960s, as Repetto (1969) shows.

- a) They are more visible to the potential adopter than is money, in that he can observe other adopters wearing their new clothes, carrying their bags of rice, etc.
- b) They represent a higher cash equivalent market value than their actual cost to the campaign organizers. For instance, the 40 rupees of "in kind" incentives contributed by CARE/ U.S. AID in the July 1971 campaign is equivalent to a market value of about 55 rupees; this advantage is gained by large volume purchasing, tax freedom, etc.
- c) They are perceived as especially valuable or prestigious by the adopters. For instance, the 3 kilograms of rice was of especially high quality and thus represented a special treat for the adopter and his family, perhaps roughly equivalent to the meaning of caviar for an American family.
- d) They help ensure a fuller distribution of the incentive benefits to the adopter's family members, for example, the food for his children and the sari for his wife help guarantee that the incentives will not be entirely spent on alcohol (as is feared by some observers), unless the "in kind" incentives are sold.
- e) They may be more socially acceptable for the adopter than a cash incentive; many Asians are hesitant to accept cash, but an "in kind" incentive is perceived as a gift.

6. The higher adopter (and diffuser) incentives paid in the Ernakulam vasectomy campaigns had a greater effect because they were offered as part of a campaign, and hence were accompanied by intensive promotional efforts which magnified their effects. The organizer of the Ernakulam campaigns speculates that the adopter incentives of 114 rupees for vasectomy, if not accompanied by the campaign, might have raised the District's usual level of adoption (of about 500 vasectomies per month) up to perhaps 1,000 per month. But the higher incentives alone would never be expected to jump the number of adopters per month to 15,000 or to 20,000! This possibility is an illustration of the synergistic aspects of a campaign; each factor contributing toward the campaign's total achievements has an interactive effect on the other underlying factors. And so the total effect of these various factors is greater than simply the sum of their independent effects.

115a

7. Relatively higher incentives lead not only to higher rates of adoption of a family planning method, but also to greater efficiency in cost per birth prevented, although not in cost per adopter. One of the justifications sometimes given for higher incentive payments is that even though they obviously raise the total cost of the campaign, they may also lead to increased cost-effectiveness because of the larger volume of adopters, across which the fixed costs of the program are spread. The organizers of the Ernakulam campaigns give this type of justification for paying higher incentives: "The [higher] incentives do not also make the program costlier, as . . . the cost of additional incentives can be more than offset by the savings from the increased number of acceptances" (Krishnakumar, 1971, p. 163). In essence, this argument is that higher incentives → more adopters → lower cost per adopter.

However, an analysis by Soni (1971, p. 5) shows that the total cost per adopter for the July 1971 campaign of 145 rupees* is rather considerably more than the comparable cost of 104 rupees per vasectomy adopter for the past three years of the non-campaign approach in Ernakulam District. When efficiency is computed on the basis of the cost per birth-prevented, rather than per adopter, the July 1971 campaign and the past three years' program are about the same, at a cost of 65 rupees per birth-prevented. In both approaches, the ratio of cost benefits for births-prevented/cost per adopter is about 15:1, illustrating the general economic attractiveness of investment in either type of vasectomy incentive approach.

8. The much higher rates of adoption of sterilization during the campaigns lead to lower-than-average rates of adoption during non-campaign periods. **

*In addition to the 114 rupees in adopter incentives, and the 10 rupees in diffuser incentives, an additional 21 rupees per adopter was spent on administration, publicity, etc.

**A similar pattern has been experienced in Taiwan where one-month campaigns with a special incentive (consisting of providing IUD insertions at no cost, or at a lower-than-usual cost, to adopters) result in higher rates of adoption during the campaign, followed by lower-than-usual rates for a month or two, which soon spring back; the net effect is a definite gain (Keeny and others, 1970, p. 31).

What long-range effect have the campaigns had on rates of sterilization under non-campaign conditions? A partial answer is provided by the fact that during the six months between the November-December, 1970 campaign and the July 1971 campaign, Ernakulam District averaged 284 sterilizations per month, somewhat less than the approximately 500 sterilizations averaged in the District prior to the November-December 1970 campaign. This fall-off might be due to fewer receptive couples remaining after the first campaign, and because of the return to the lower adopter and diffuser incentives.

9. The Ernakulam vasectomy campaigns mainly reached adopters who are relatively poor, but they are no poorer than the vasectomy adopters attracted in the non-campaign approach. Whether measured by income, education, or occupation, the adopters in the Ernakulam campaigns are socio-economically disadvantaged. For instance, 79 per cent of the adopters in the July 1971 campaign earned under 100 rupees per month. Most of the adopters were illiterate, and they worked predominantly as agriculturalists or as urban manual laborers. So the vasectomy adopters were poor men; they seemed to be even poorer than the average resident of Ernakulam District* (although exact data for this comparison are not available).

In an earlier section of the present report we suggested the generalization from previous research that adopter incentives lead to adoption of an innovation by different individuals than would otherwise adopt. Usually the first adopters of an innovation are the socio-economic elites, but when incentives are paid (at least for vasectomy), the relatively lower-status individuals in a system adopt first.

In the present case, where relatively larger adopter incentives were paid, we might expect the Ernakulam campaigns to reach even poorer individuals than the usual, non-campaign approach. But this was not so. For example, the percentage of individuals with monthly incomes of less than 100 rupees are:

*This poorer-than-average characteristic may be due to the payment of incentives, or perhaps it is idiosyncratic to vasectomy (as a family planning method that attracts particularly poor men as adopters). Future research ought to find out.

116a

Percentage with monthly incomes
under 100 rupees

1. July 1971 campaign adopters	79%
2. Vasectomy adopters in Ernakulam District under non-campaign conditions	80%

So the campaign adopters are relatively poorer than the average resident of Ernakulam district, but they are not more socio-economically disadvantaged than non-campaign vasectomy adopters.

To what extent is the experience at Ernakulam applicable to other districts in India? Within a month or so after the July 1971 campaign, the central government in Delhi decided to launch similar vasectomy campaigns in 25 additional districts, each with a target of about 10 to 12 thousand sterilizations. Relatively higher adopter incentives (about 80 to 100 rupees per adopter, rather than the usual 20 rupees) were authorized. Unfortunately, the district collector in each of these districts was not provided with specialized training in the campaign principles underlying the Ernakulam success, and there was a tendency to overemphasize the higher incentives while largely ignoring the other campaign management principles essential for success.

Nevertheless, several of these attempts to copy the Ernakulam campaign seem to be rather successful, thus providing evidence of the effect of higher incentives alone.

1. In Bullandshahr District, Uttar Pradesh State, over 14,000 vasectomies were performed in a November-December 1971 campaign.
2. All 19 districts in Gujrat State paid higher incentives in a two months' campaign in late 1971. A total of 231,000 sterilizations achieved, or about 12,160 per district.
3. In Gurgaon District, Haryana State, a two weeks' campaign in early December 1971, gained 3,700 vasectomies out of the month-long goal of 7,000.

So these attempts to reproduce the Ernakulam success of elsewhere were at least modestly effective, even though they seem

to have overstressed the higher adopter incentives. The synergistic effects of combining higher incentives with the other principles from the Ernakulam campaign would be much greater. * For instance, in the Gurgaon District campaign little attention was paid 1) to involving the District Collector in the campaign, 2) to conducting a house-to-house canvass for potential adopters, 3) to involving local community leadership in the campaign, 4) to creating a festival spirit in the District, 5) to mobilizing the mass media for campaign purposes, or 6) to concentrating the campaign at selected, high priority sub-audiences within the District. **

In order to gain complete understanding of the campaign principles so effectively demonstrated in the Ernakulam campaigns, key district official should have traveled to Cochin to actually see and participate in the July 1971 Ernakulam Campaign. That is unfortunately impossible now that the campaign is history. But a similar experience could now be recreated for training purposes. Mr. Krishnakumar should be asked to organize a short training workshop to be attended by the district collector and the district family planning officer from each district that intends to reproduce the Ernakulam experience. This workshop would meet in a district in which a vasectomy campaign was underway, and the workshop members would participate in operating the campaign. After the workshop, when the district officials returned to initiate their own campaigns, Mr. Krishnakumar would act as an on-the-spot consultant to their campaigns. Further, the workshop experience might be of interest to select family planning officials from other countries contemplating family planning campaigns.

*And from paying higher diffuser incentives, along with higher adopter incentives. For instance in the Gujrat State campaigns the usual diffuser incentive of 2 rupees was raised to 20 rupees. Prizes were awarded to canvassers for high performance; a transistor radio was awarded for motivating 20 adopters.

**Dr. Dinesh C. Dubey of the National Family Planning Institute, New Delhi, is analyzing data gathered from vasectomy adopters at several of the 25 attempts to replicate the Ernakulam campaigns in other districts, in order to determine which of the campaign strategies is of greatest importance in explaining campaign success.

Otherwise, the full lessons taught by the Ernakulam vasectomy campaigns will not be fully learned and capitalized on. And that would indeed be a shame.

The Ernakulam Campaigns as Experiments -

The vasectomy campaigns were certainly highly successful family planning programs. Part of this success is due to a number of novel procedures and strategies (such as the payment of much higher incentives) that demonstrate useful ways to break outside the bounds of current practice. Thus the Ernakulam campaigns enable us to gain important understandings about how to improve the effectiveness of family planning programs.

But in the usual sense of the word, the vasectomy campaigns do not constitute an experiment, nor were they ever intended to do so (although one often hears them referred to by family planning officials as the "Ernakulam experiment"). Thus the research that we have just summarized belongs more in the first generation of incentives research, than in the second generation of quasi-experimental research. Nevertheless, the analyses of the Ernakulam campaigns are rich in their yield of knowledge about the effects of incentives, and about other strategies of family planning communication. So the Ernakulam vasectomy campaigns are experiment-like in the sense that they test, as "treatments," various new strategies of change.

But if the Ernakulam campaigns had been conducted as an experiment, rather than just as a combination of various novel communication strategies in family planning, we could have obtained answers to the following questions:

1. What is the effect of paying higher incentives versus the various other campaign strategies that were used?
2. How much of the effectiveness of the Ernakulam campaigns was due to naturally-occurring factors (external to the campaign strategies that are identifiable)?

In order to obtain precise answers to these questions, each of the various strategies would have to have been assigned (randomly) to different communities or individuals in Ernakulam District. And certain units would have to receive none of these

strategies, and thus constitute a control group. These research arrangements would certainly have cut down on the number of vasectomy adopters achieved by the campaigns. So some of the spectacular results would have been sacrificed in exchange for gaining knowledge.

Such experimentation may be possible in Ernakulam District in the future. The District Collector has requested the government of India to designate Ernakulam District as an "experimental district" in which novel policies could be tested (Krishnakumar, 1971, pp. 170-171). One of the strategies specifically identified for future research in Ernakulam District is the payment of group (community) incentives. It might also be possible to test the effects of non-birth incentives.

But one requirement for future conduct of such experiments would be the direct involvement of a competent research institution, ideally one located in the District.*

*Evaluation research was conducted during the July 1971 campaign 1) by the Gandhigram, Institute for Rural Health and Family Planning, Gandhigram, Madurai District, Tamil Nadu State, and 2) the National Institute of Family Planning, New Delhi. Their studies were mostly concerned with the characteristics of the adopters, and the communication channels through which they were reached by the campaign. Reports from this research were not yet available at the time of the present writing.

Cumulative Number of Sterilization Adopters in Ernakulam District

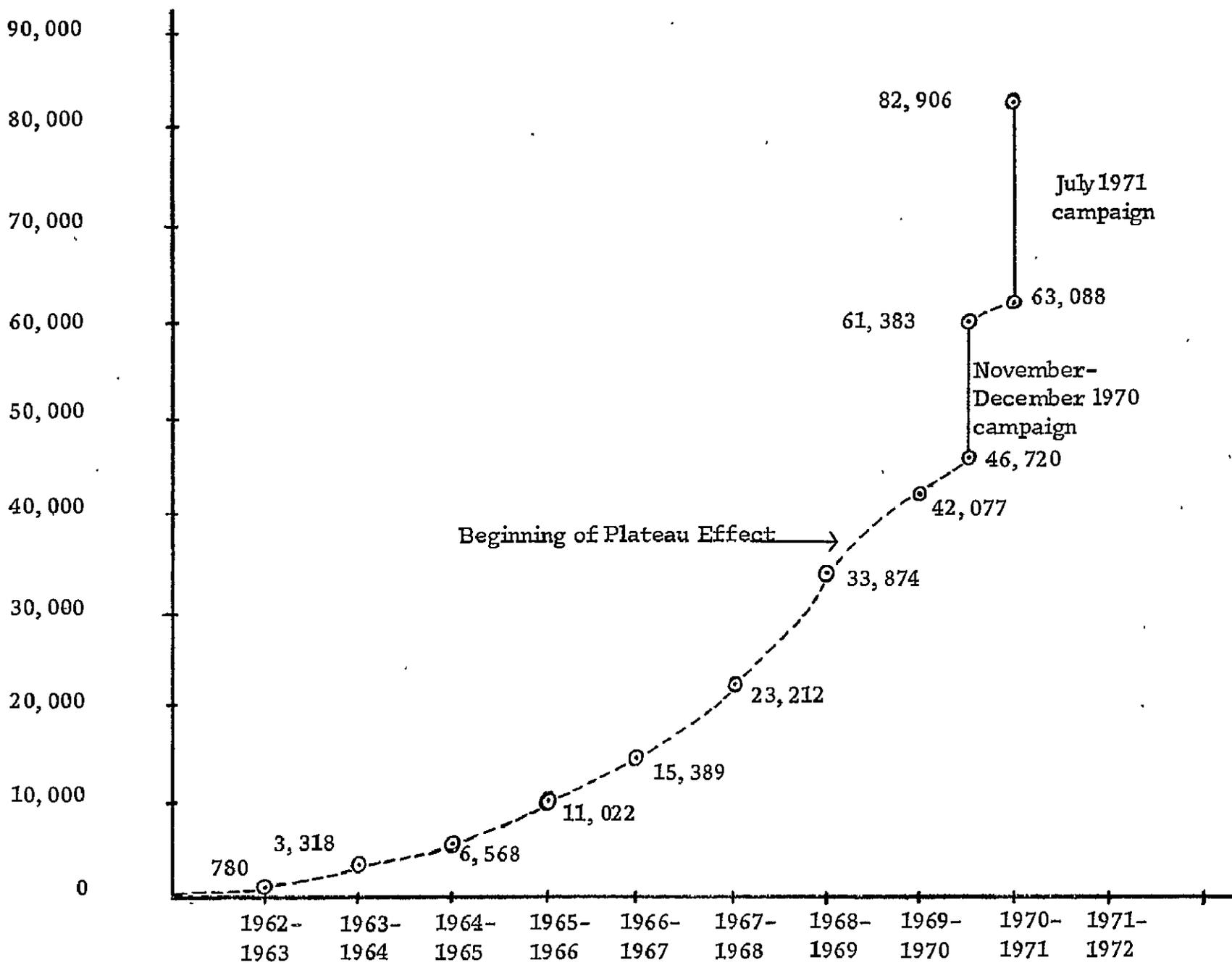


Figure 3.

The two sterilization campaigns in Ernakulam District, India, achieved a total of 34,481 adopters, an especially impressive accomplishment because the rate of adoption had previously begun to level off.

B. INCENTIVES FOR BIRTH PREVENTION

In the preceding section we have reviewed some programs which reward couples, motivators, or physicians for contraceptive acceptance or for limited continuation. These programs have set the stage for more extensive and bolder projects, aimed at testing the hypothesis that if a reward is sufficiently large it can offset the value to a family of having many children. In many cases, it is hypothesized, these rewards could come in the form of "transfer payments."

These payments might be made in the form of components of the normal development package such as free education or medical care. On the other hand, the rewards could come from savings within the social welfare package. In other words, because society does not have to pay for education, medical care, housing and other benefits for children who are not born, the savings incurred by society when a birth is prevented can be shared with the family that prevents the birth.

In the following articles readers will get a glimpse of programs which have been purposefully designed to be large enough to give parents an alternative to further child bearing. Since children are seen as a source of labor, or of income, or of old age security, these programs have been tailored to expressed family economic considerations.

None of these programs have been able to adhere completely to the guidelines offered by Sprehe (Annotation 5); neither are they as comprehensive as in the integrated system recommended by Kangas (Annotation 6). They are seen by their authors a first step in an area which deserves further testing.

"Savings Accounts for Family Planning, An Illustration
from the Tea Estates of India,"

Ronald C. Ridker, Studies in Family Planning, Vol. 2, No.

The best example of a program which uses savings from social welfare to reward families for remaining small comes from India. The article which follows was used by the United Planters Association of South India (UPASI) to design a program which rewards female workers for periods of non-birth.

For each female worker capable of having children the estates set up a joint savings account in the name of the company and the woman. The estate pays into this account a certain amount for every month that the woman is not pregnant. The account cannot be drawn upon until the woman completes her childbearing years, but it accumulates interest in the interim. If the woman becomes pregnant she forfeits a substantial amount of the funds that have been paid into the account, although she is eligible to continue in the program starting sometime after the birth of the child. The funds that she forfeits revert back to the company and help defray some of the company's costs due to the birth. The accounts draw interest at the normal rate for long term bank deposits which in India is 6.5 percent.

If a woman stays in the program from age 35 to age 50 without any forfeiture she will accumulate Rs. 2,900*; if she joins at age 25 (by which time the typical woman has had her third child) and has no children thereafter, the family will accumulate Rs. 7,000.

The discounted cost to the tea estates of a birth is approximately Rs. 1,000. The discounted cost of paying Rs. 10 per month for 13 years is also approximately Rs. 1,000. In other words, if the company paid Rs. 10 per month to a woman for 13 years, and, as a result, she had one less child than she otherwise would have had, the company would break even.

However, when the normal pattern of childbirth and child spacing among tea plantation employees was reviewed it was found to be more likely that two, three, or even four births would be prevented. Since each birth prevented saves the company Rs. 1,000, the plan pays for itself several times over.

(Editor's note: Recent reports received by the editor indicate that over 90 percent of eligible women on three large tea estates have joined the program, and that the birth rate has been reduced substantially. The UPASI is now discussing doubling coverage of the program and the government of India is now quite actively interested in the implications of this project for their own population planning.)

* One rupee = U. S. \$. 13

Savings Accounts for Family Planning, An Illustration from the Tea Estates of India

In an article, "Synopsis of a Proposal for a Family Planning Bond," which appeared in *Studies in Family Planning*, Number 43, June 1969, Ronald Ridker proposed an incentive program to lower birth rates by making payments into a savings account for a successful practitioner of family planning. In the following article, Mr. Ridker presents an example of a specific application of this proposal and discusses the terms of its implementation. Mr. Ridker, an economist, is currently head of the population program of *Resources for the Future*. Prior to his appointment at *Resources for the Future*, Mr. Ridker worked for the Agency for International Development in New Delhi.

The incentive scheme presented in this paper was developed for a special institutional setting where good records, little migration, and fairly stable employment conditions exist. It is presented here in the form in which it was originally proposed to an association of tea estates in South India, in the hope that the general principles on which it was built will find wider applicability.

Fifty percent of the employees of the estates are women; for all of them substantial maternity and child-care expenditures are required by law. Each estate is fairly isolated so that useful experimental variations in introducing incentive programs can be tried out without much concern about the effects of interactions. Good vital records, hospitals, doctors, family planning clinics, and a strong desire on the part of management to reduce the birth rate are present on all the estates.

The Basic Idea

For each female worker capable of having children (or within the childbearing ages) the estates would offer to set up a joint savings account, in the name of the company and the woman (and possibly also her husband): the estate would pay into this account a certain number of rupees each month that the woman is not pregnant. The account could not be drawn upon until the woman completed her childbearing years, but it could accumulate compound interest in the interim. If the woman were to become pregnant, she would forfeit a substantial amount of the funds that had been paid into the account, though she would be eligible to continue in the program starting some time after the birth of the child. The funds she forfeited would revert back

to the company and in effect help defray some of the company's costs due to the birth.

Financial Costs and Benefits

An estate's financial obligation resulting from the birth of a child to one of its workers is substantial. According to one estimate, the costs during the first year (maternity benefits, hospital care, etc.) amount to approximately Rs. 160,¹ and each year thereafter, until the child reaches at least age 12, the costs (for food, clothing, schooling, and medical care for the child) are around Rs. 100 per year. In addition, the estates generally provide medical care for children up to the age of 18, the annual cost of which might amount to something like Rs. 15 per child (from age 13 through 17).² In addition, of course, the estate experiences the loss of the woman's productivity due to confinement, nursing, and generally poorer health as a consequence of the birth; it may also find itself saddled with additional problems arising from the presence of idle children around the estates.

Now suppose a company makes a monthly payment into a savings account of Rs. 10, and the interest rate is 6.5 percent. Assume moreover, that a woman reaches menopause at age 50 and that she is allowed to make withdrawals from the savings account only after this age. The benefits of the scheme to the husband and wife depend upon when the wife joins the scheme. If she joins when she is 35 and remains in the scheme without penalty until age 50, the couple will accumulate

Rs. 2,900; if she joins at age 25 (by which time the typical woman has had her third child) and has no children thereafter, the family will accumulate Rs. 7,000.

These surprisingly large sums may mean that the monthly payment need not be as high as Rs. 10. But what is equally surprising is that the estates could afford to pay these amounts, and would, on the average, actually come out ahead. The reasons for this conclusion are somewhat complex since they require us to compare expenditures made at different points in time and involve the avoidance of different numbers of births depending on when a woman joins the scheme. The easiest way to handle these problems is to compare present discounted values (i.e., to ask what amounts of money if invested today would permit payments to be made over a series of years in the patterns suggested above). At 6.5 percent interest, the present discounted cost to a company of a birth is slightly above Rs. 1,000. The present discounted cost of paying Rs. 10 per month for 13 years is also approximately Rs. 1,000. In other words, if the company paid Rs. 10 per month to a woman for 13 years, and, as a result, she had one less child than she otherwise would, the company would break even.

But considering the fact that the average interval between live births in India is between three and four years (less for younger women and more for older women), it is more likely that, during this 13 year period, two, three, or even four births would be prevented. Since each birth prevented saves the company Rs. 1,000 (in present value terms), the scheme would pay for itself several times over. (Indeed, even if costs to the company of an additional child born to one of its workers were half the amount indicated above, the company would benefit by the arrangement.)

There is one other important feature about the plan from the point of view of its financing. If the scheme did not work—if, for example, no one signed up for it, or if those who did broke the agreement by having children at some future date—the company would be no worse off than it is now. The scheme would cost money only to the extent that births were actually

¹ One Rupee = U.S. \$0.13.

² These average estimates are from the United Planters Association of South India. They include only the direct costs of a birth, not such indirect costs as loss of productivity.

1220
avoided. (This discussion ignores the loss of interest to the company involved in funds placed in the savings accounts. But it also overlooks the tax deductions typically available for expenditures made on family planning which could affect most if not all of such interest costs.)

Forfeit in Case of Pregnancy

The determination of forfeit in case of pregnancy must be considered with care. To have all the funds in the account at the time of pregnancy revert to the company would be an overly harsh penalty for someone who had faithfully practiced family planning for a number of years and then slipped once. If the penalty is the same no matter how many children a woman has, she may be inclined to have the number she desires quickly in order to maximize the number of payments she would thereafter receive.

The following "rules of forfeit" are suggested to take care of these and related matters. If a woman has zero, one, or two children and becomes pregnant, she will cease receiving monthly payments for a period of one year, but no deductions will be made in her savings account. If a woman has three or more children, pregnancy will result in the loss of monthly payments for one year *and* the forfeiture of whatever is in her account up to a maximum of Rs. 880.

These rules permit a newlywed to postpone having her first child (and thereafter her second and third) and still build up her account. However, by the time she had had her second child she would be used to the plan, have built up a substantial sum in the account, and be under considerable pressure not to lose it by having any more children. The figure of Rs. 880 is based on the idea that the couple should forfeit up to a maximum of the (present discounted) cost to the company of the birth, Rs. 1,000. Since Rs. 120 in monthly payments would be lost, Rs. 880 (ignoring interest) would remain to be deducted from the account. Since it takes roughly five and a half years to accumulate Rs. 880, this would be a substantial penalty.

Acceptability

In many underdeveloped countries a primary reason for large families is that parents want many children, especially sons, so that at least some will survive to take care of them in their old age. With a savings account available for their old age, parents no longer need to have as

many children for this purpose. But this scheme does not rest or fall on the importance of this motive alone. Whatever the motives for childbearing—and even when there are no explicit motives, e.g., in cases where parents believe that it is God's will—the plan will provide parents with an alternative which they can see as possibly beneficial to their lives. Many workers, especially women, recognize that large numbers of children are a burden, but they do not attempt to limit their reproduction because of inertia or social pressure. For them the savings account may provide the last push needed to make them seek ways of having fewer children. Even for others who positively want more children, the prospect of buying a plot of land and retiring in comfort and security should provide a strong pull. Evidence is available in a wide variety of fields, including family planning, to support the contention that people do change their behavior to take advantage of monetary incentives.

Questions can be raised about whether workers will understand the scheme and whether they will be motivated by benefits occurring in the distant future. The fact that the workers understand the gratuity and pension schemes present on all estates and periodically campaign for increased benefits under these schemes strongly suggests that we can answer these questions in the affirmative. In any event there are certainly some who will understand and who will lead the way for others.

Formal Agreement

It is natural to think of requiring a formal agreement from the woman (and her husband) not to have any more children before opening a joint savings account and beginning periodic payments. But it is not necessary. An interesting possibility would be for the company to unilaterally open up such savings accounts and simply inform the couples that Rs. 10 is being deposited in these accounts each month the wife is not pregnant. In this case no definite decision to come forward and sign a specific agreement need be made; those who would like to join but are held back by relatives or social pressure are in effect relieved of the responsibility for joining. After some time has passed, a couple who would not otherwise have joined the scheme may think twice before forfeiting the money that has automatically accumulated. In

any event, the slow rise in the account and then the abrupt fall when a child is born may be an impressive object lesson that will change behavior despite initial indifference to the plan.

Eligibility

Most of the specific rules pertaining to such aspects as eligibility, resignation, retirement, and inheritance need to be worked out to maximize acceptability in a particular setting. A few general comments, however, may be useful.

The inclusion of women without respect to their number of children has advantages. First, it is likely to maximize the number of births prevented: some women will join the scheme who would otherwise be excluded because they have too few or too many children. Second, it seems fairer not to discriminate against women with few or no children since an old age security fund is more necessary for such women. Furthermore, it is simpler administratively to treat all women alike.

Resignation can be handled quite easily given the presence of blocked savings accounts. If a woman resigns, the company's name would be taken off the account, payments to the account by the company would cease, interest would still accumulate, but withdrawals would not be permitted until after a certain date.

Problems with respect to inheritance, retirement age, inclusion of unwed mothers, and use of the husband's name on the account are best resolved by following local customs and rules used for gratuity and pension plans.

Implementation

While this is not the place to discuss details of implementation, it may be useful to make three brief points. First, the absolute minimum requirement for the success of this scheme is the easy and cheap availability of acceptable contraceptive methods and follow-up facilities for taking care of problems in contraceptive use as quickly as they arise. A serious situation could result if a large number of couples were to accept the scheme in good faith only to find that they had no acceptable means for fulfilling their part of the bargain. The pill would be an ideal contraceptive to use with this scheme since the monthly payments could be linked to the provision of the next month's supply. But it is far better to permit a maximum amount of freedom in choice of contra-

ceptive method. It may be useful to encourage sterilization of the husband or wife by offering to set up an account solely in the name of the couple and placing in it a lump sum that will grow to the appropriate size by the time the couple is permitted to make withdrawals.

Second, it is important to keep workers aware of their savings account, how the monthly payments and compound interest make it grow, and its potential size in case they stay in the scheme to retirement. If the scheme were imposed unilaterally, a monthly statement could be given each worker congratulating her on having received an additional Rs. 10, indicating what the account balance is, and what it could be upon retirement. If the scheme were based on volunteers, each participant could be given a savings book that she would bring in every month to re-

ceive similar information. The occasion could be used to distribute another supply of contraceptives and to check on possible complications. With a better knowledge of worker's reactions and plantation operations, these suggestions can be modified to suit specific situations.

Third, the necessary type of savings account—the recurring deposit account—is currently being offered by the major banks in India. This account is insured (up to a maximum amount) by an agency of the Reserve Bank of India and brings a 6.5 percent interest. Only a slight modification in its terms would be required to accommodate this program.

Summary and Conclusions

Through this program, the company is, in effect, telling its workers something like

the following: "Before this plan went into effect, we offered you maternity and child-care benefits; now we offer you a choice. Either you can continue receiving these benefits (which really benefit your children, not you); or, by reducing your family size, you can receive roughly these same benefits in the form of savings for your retirement and old age." Given this added degree of freedom, it is difficult to believe that no one would make the latter choice.

The purpose of this paper is to illustrate via a specific proposal several general principles that may find applicability in other settings. Accordingly, no space has been devoted herein to the extremely important questions of experimental design and evaluation. Hopefully, it will be possible to report on these dimensions at a later stage.

"Planning, Starting, and Operating an Educational Incentives Project"
O. D. Finnigan, T. H. Sun, Studies in Family Planning, Vol. 3,
No. 1, January 1972

This project was the first incentive plan for birth prevention launched (in September, 1971) with the implicit permission of a government structure. The pilot program in one township involved participation by the Provincial Health Department which requested the money, the county and township officials who helped design the program, and elected village leaders who aided in implementation.

Although the family planning program in Taiwan is usually judged to have been relatively successful in lowering fertility, a hard-core of non-acceptors remain. Additionally, there has been no significant decline in the number of children that parents say they wish to have, which remains at about four.

Research revealed that the main reasons parents wanted to have many children were economic; and it was felt that if the environment of the family could be changed to guarantee some degree of economic security, couples could be convinced to have smaller families. Since Taiwanese parents see the road to old age security to be through well-educated children, it was decided to offer funds for higher education to families with few children, if they would keep their family size small.

The plan offers to women with zero, one, two, or three children a free savings account with annual deposits which earn interest as long as the family has no more than three children. This account can be worth as much as U. S. \$385 at the end of 14 years of participation; and these funds are earmarked for higher education.

About three-fourths of eligible women in the pilot township enrolled in this program. Because the largest savings under this program will be in the realm of education where the government now spends over U. S. \$1,000 to support each child from first through ninth grade, and because the cost of this program to the government will be less than \$130 per birth prevented, the ratio of savings to investment in the educational sector alone is in a ratio of seven to one. In other words, this program is a form of transfer payment which could eventually extend free high school education throughout the island at a great savings to the government. If the pilot project is successful, and if the overall program is adopted, it should insure that the fertility decline will occur in time to set aside funds to finance full extension of higher education.

Studies in Family Planning

A PUBLICATION OF
THE
POPULATION
COUNCIL

Volume 3, Number 1

January 1972

Planning, Starting, and Operating an Educational Incentives Project

by OLIVER D. FINNIGAN, III, and T. H. SUN

This article presents a summary of activities to date in an educational savings project in Taiwan. The authors, Mr. Finnigan, field associate of the Population Council in Taiwan, and Dr. Sun, executive secretary of the Committee on Family Planning of the Taiwan Provincial Health Department planned the project.

In recent years numerous incentive proposals have been advanced as a means of encouraging small families. The project in Taiwan is one of the first such plans to have been adapted to local conditions and implemented. Although it will be several years before the effect of this program on fertility is known, a review of the initial stages will be of value to those who wish to implement similar projects.

The educational savings project in Taiwan is designed to reward those couples who limit their family size, by providing funds to enable them to send their children to secondary schools and universities. After a study of local conditions and a review of literature concerning incentives, we developed the project to be applied nationwide. We implemented a pilot program in a township in Taiwan in September 1971 to pretest the nationwide program. This pilot program may help to determine the next step in Taiwan's efforts to lower its birth rates and thereby bring them more into line with greatly lowered death rates.

BACKGROUND

By 1971, the crude death rate in Taiwan had fallen to about 5 per thousand per year, and the crude birth rate had declined from a 1952 peak of 50 to about 27 per thousand. Although government contraceptive services have reached almost half of all married couples in Taiwan, and recruitment of new family planning acceptors has continued to increase each year, program planners have been concerned that the birth rate in Taiwan will soon cease to fall, and may even rise (1). This concern is caused primarily by the large numbers of young people entering the reproductive years, and by

the lack of a significant drop in the number of children wanted by each couple (2, 3). When the third knowledge, attitudes, and practice (KAP) survey was completed in Taiwan in early 1970, it became evident that little or no change had taken place in the stated ideal number of children, which remained at about four (4).

Our objective was to develop a practical program designed to motivate couples to have smaller families than they had previously planned or expected. First we had to discover why Taiwanese families wish to have many children. In Taiwan, as in other societies lacking established social security systems, it is important to have many children in order to provide for old-age support. In some countries where the death rate is high, the number of children that each woman must bear is further inflated by the necessity of compensating for high mortality. In Taiwan, however, excellent medical care and public health services have reduced the death rate and have also established an effective, island-wide contraceptive delivery system. Couples in Taiwan are confident that

their children will live, and they have consequently achieved their expected fertility with relative ease. As of 1970 the average woman wanted 3.9 children, and total fertility averaged 4.0. Fully 45 percent of married women aged 20-44 were practicing contraception. Present-day Chinese couples then, have not been motivated to have many children because of high death rates among children or because of lack of knowledge or availability of contraception.

A 1969 survey of men found that fully 62 percent expected to live with their children in their old age, and 57 percent expected their children to give them money from time to time regardless of the child's economic condition (5). These findings are consistent with traditional Chinese values. They point to the extended-family pattern with attendant expectations for old-age support as the rationale for wanting and having large families. A daughter leaves the extended family to join the son-in-law's clan and this contributes to the strong bias toward bearing sons. On the average, couples want to have 2.3 sons and 1.6 daughters, a total of 3.9 children.

These considerations lead to the question of how Chinese couples expect their children to succeed financially. Surveys indicate that parents perceive the path to financial success to be through education. Traditionally, Chinese families have placed strong emphasis on higher education and commercial and professional employment. Although only 16 percent of men have attended high school or college, 67 percent expect one or more of their children to finish college. And although only 29 percent have any idea of the cost of a college education, 76 percent say that this will be a "heavy financial burden." When asked whether saving money is important, 78 percent say that it is, and, among these, 40 percent spontaneously cite costs of education as the most important reason for saving.

THE PROGRAM

Our program takes these conditions into account. It capitalizes on the strong desire to save by establishing for the couples who limit family size a formal bank account earmarked for education. There is no financial obligation on the part of the couple; the program deposits money for them. The account, which will cover high school and college tuition and related fees, will provide schooling for two children from junior high through

senior high school at present costs. Promotional materials stress that if achieving old-age security depends on having successful children, then a child's success in this modern world depends on his or her education. The program promises to guarantee money for education as long as the family remains small.

A review of the extensive literature concerning incentive schemes and proposals going beyond family planning helped the authors to develop this plan into a practical program to be applied nationwide (6-11). The pilot project described here is intended to pretest the nationwide program.

Using Bernard Berelson's criteria of feasibility (9) we determined that the pilot project was medically and scientifically sound, politically viable, administratively simple, morally acceptable, and financially possible. The effectiveness is yet to be proven; however, the plan is designed so that no funds are lost if it fails since final payments are tied to fertility reduction. The feasibility of a nationwide program will be determined by the progress of our pilot project. It is not the intent of this paper to make extensive forecasts concerning the final effects of this program. The authors merely hope to show others how the program was designed and implemented in order that readers who wish to attempt similar projects may profit by Taiwan's experience.

THE PILOT PROJECT

Design

We selected a representative rural township in an urban fringe area (Hua township, Changhua county) for implementation of the pilot project. (Family planning services are available at the township health station and in the nearby small city of Changhua.) We drafted a pilot project, which received extensive comment from the Population Studies Center of the University of Michigan and the Population Council in New York. It was also critically reviewed by local personnel including the county mayor, and household registration, health, and banking officials in the selected area. The final plans for implementation and operation of the project were worked out in consultation among township, county, and provincial personnel, and a summary was forwarded to national and provincial leaders for their information.

In its final form the pilot project offers to couples with zero, one or two children an annual deposit in a savings account for each year that they do not exceed two living children. These deposits are recorded on an account card kept by each enrolled woman. If a couple has a third child the value of the savings account is immediately reduced by 50 percent. If they have a fourth child it is cancelled and all funds are returned to the bank.

TABLE 1. *Deposit and Withdrawal Schedules at 9.5 Percent Interest Compounded Annually (U.S. Dollars)*

A. Regular plan			B. Special plan	
Year	Annual deposits		Year	Annual deposits
	0-2 Children	3 Children		3 Children
0	\$ 25.00	\$12.50	0	\$35.00
1	5.00	2.50	1	7.50
2	5.00	2.50	2	7.50
3	10.00	5.00	3	10.00
4	10.00	5.00	4	10.00
5	15.00	7.50	5	12.50
6	15.00	7.50	Total	\$82.50
7	20.00	10.00		
8	20.00	10.00		
9	25.00	12.50		
10	25.00	12.50		
Total	\$175.00	\$87.50		
Year	Value of account at withdrawal		Year	Value of account at withdrawal
	0-2 Children	3 Children		3 Children
10	\$267.50	\$133.75	6	\$133.75
11	292.96	146.48	7	146.48
12	320.80	160.40	8	160.40
13	351.24	175.62	9	175.62
14	384.60	192.30	10	192.30

The account is held at the maximum permissible long-term interest rate (now 9.5 percent), and all accumulated interest is added to the account. The enrollment deposit is large enough to be attractive to most couples and annual deposits increase as the program progresses. The account can be closed by a one-time withdrawal from 10 to 14 full years after enrollment. At this time a book of cashier's checks will be issued payable for educational expenses in public high schools and colleges and equal to the total amount of deposits plus interest. After ten full years the account will be worth US\$267.50. If the couple waits for four additional years, the account increases in value by \$117.10, to \$384.60. The schedule of deposits and the value of the account at withdrawal are presented in Table 1.

For the first year of operation of the program a special plan is being offered to couples who already have three children. Under this plan deposits are increased, and the savings account matures from six to ten years after deposits begin, payable at the reduced rate used for all other three-child families. This plan aims at attracting quickly those couples who are likely to have a fourth child in the near future.

To receive the annual deposit, one member of a couple reports to a special desk in the township office during the anniversary month of enrollment. Upon presentation of an identification card she (or he) is asked to sign a statement listing her living children by name, and attesting that she has no other living children. This statement is checked against the family's household registration document, which is kept in the same office. If these documents agree, the account card is immediately updated to show an additional deposit. In Taiwan these two checks are thought to be sufficient to deter extensive fraud.

Procedure

PRELIMINARY SURVEY

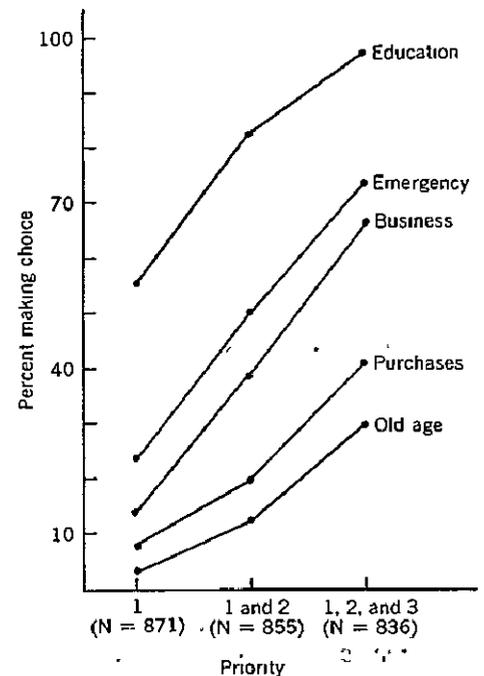
The first step in our program was to conduct a thorough baseline survey of eligible women in Hua Tan. This township has a population of about 35,000, with 1,477 registered married women less than 30 years old with three or fewer children. These women made up the pool of eligibles. Only 1,103 of these women were still living in Hua Tan at the time of the survey. Out of these, 1,051 were interviewed, but 90 either failed to complete the interview, or were found to be pregnant for the fourth time. Thus, the final

population of women to be followed in this study is 961. This survey confirmed prior island-wide results reported earlier. The mean desired number of children was 3.5, with a decided preference for sons. Although only 26 percent of husbands and 9 percent of wives had attended junior high school or above, almost 75 percent expected sons and over 50 percent expected daughters to finish college. Sixty-five percent expected to live with their children for the rest of their lives and 64 percent felt that their children should give them money regardless of the child's economic condition. Although 95 percent felt that it was necessary to save money and over half of these felt that the primary purpose of saving was for education, only 9 percent had saved regularly in recent years and 64 percent had never saved anything. (See Table 2 and Figure 1.)

PROMOTION

Three weeks before the start of recruitment there was a meeting of all 18 elected village leaders and the 18 appointed village administrators in the township. This meeting was presided over by the county mayor and was designed to win the support of these locally elected officials. The county and township mayors

FIGURE 1. Ranking of Five Principal Objectives for Saving, Cumulative, Excluding Nonresponse and "Other"



described the demographic potential and the family planning aspects of this plan. The executive secretary of the Provincial

TABLE 2. Summary of Preliminary Survey Findings, Hua Tan Township, Among Married Women under Age 30 with Three or Fewer Children (N = 961) (figures in percents)

A. Completed education				
	Actual		Expected for children	
	Wife	Husband	Son(s)	Daughter(s)
Primary or below	91	74	6	16
Junior or senior high	8	23	23	30
College or other	1	3	71	54
	100	100	100	100

B. Savings				
Beliefs about		Practice in recent years		
Very necessary to save	79	Save regularly	9	
Necessary to save	16	Save occasionally	27	
Not necessary to save	5	Never save	64	
	100		100	

C. Expectations of children				
Expect to live with them		Expect money from them		
For rest of life	65	In all cases	64	
When old	4	If live together	2	
Depends on situation	23	Depends on situation	21	
No	8	No	13	
	100		100	

Family Planning Committee and the secretary of the Planned Parenthood Association of China outlined the mechanics of the plan. The international implications of this experiment were briefly reviewed by Population Council staff. An hour of questions and answers followed the formal portion of the gathering; the local response was quite favorable.

The village leaders' meeting was followed by separate village gatherings of eligible women, convened and chaired by village leaders. At these gatherings, provincial and county staff explained the program and answered questions.

Before these meetings each eligible woman was sent a brief description of the savings plan and an invitation to attend her village meeting. These mailings included a flyer that stressed the following: (1) old-age security is best assured if children are successful; (2) well-educated children are most likely to succeed; and (3) this plan can help pay for education, which can lead to financial success for children and to old-age support for parents. The local title of the program is "Free Educational Savings Plan for Small Families."

In mailings and meetings, couples were advised that they had nothing to lose since they made no input into the account and could withdraw from the project at any time. They were told that enrollment would be limited and that it would continue for one month on a first-come-first-served basis. At local meetings a representative from the local health station spoke briefly and answered questions on contraception.

ENROLLMENT

Enrollment took place in September in two rounds. In the first round, two three-man teams held full-day enrollment sessions in each village. In two villages over 90 percent of eligible women enrolled at these sessions; in all, 615 women signed up in this first round. At the meeting of village administrators held on 24 September, awards of US\$2.50 were given to the administrators of the four best villages, and the top two were asked to share their methods. One leader had first convinced the village gossips and grandmothers who then did the recruiting for him. Another administrator had visited individual homes to explain the program.

A simple incentive system was announced for the last week of recruitment, which was held at the township office.

Under this plan village administrators received from US\$0.02 to \$0.15 for every additional case recruited, depending on the final percentage enrolled. By 30 September, 698 women had enrolled for a total of 65 percent of all women confirmed to be eligible. Appeals and special cases brought the final total to 727, or 69 percent. The only opposition to the program came from several older persons who warned women that if they joined now and quit later they would be punished. Village administrators agree that such rumors had little impact on enrollment.

ELIGIBILITY

In planning and implementing this pilot program we had certain problems in establishing eligibility. We made the following rulings, which may be of interest to those planning similar projects.

Place of dwelling. Over 350 couples could not be contacted for the presurvey because they had moved out of the study area, although they had not yet changed their household registration. They were not actively recruited, but were considered eligible. We decided that if a couple left the project area after enrolling they could still remain in the plan provided one partner returned annually with a current copy of their household register. If one member of a couple moved out prior to the cutoff date for enrollment, the couple could still join as long as one member remained registered as a resident of the pilot township.

An additional unknown number of couples had moved into the area but had not registered this move as of the time that lists of eligible couples were drawn up. They were not regarded as eligible. A local eligibility committee consisting of the township mayor and the household registration officer ruled on these cases. Some registrants were merely overlooked when the first lists were made or could not register due to exceptional circumstances such as military service. These couples were enrolled if they applied. Most eligibility disputes were easily settled by reference to household registration documents.

Pregnancy. In the presurvey about 20 percent of women with three living children were found to be pregnant. Since the project did not wish to encourage late abortion, these women were not actively recruited. If they came in for enrollment, however, they were accepted, provided they were no longer pregnant and had not had a live birth in the interval.

Multiple births. Each member of a set of twins born prior to enrollment counts as one child. After enrollment each set of twins counts as one child if that set of twins would mean (1) that the final payment would be reduced, or (2) that the family would be dropped. (These same rules apply to other multiple births.)

Adoptions. Children adopted by the couple are not counted in this plan. Children born to a couple and given up for adoption are counted against their total.

Death of children. The number of children that each couple has is determined by the number living at the time of enrollment or at the time of the annual revisit. However, once a couple has reported a third or fourth child they may not be reinstated in the plan at the previous level of payment. In other words if a third child is born and dies prior to the annual deposit period, then payment continues at the two-child level. If, however, the child is still alive at the annual deposit period, and payments are reduced accordingly, payments cannot be reinstated later upon the death of a child. This rule should minimize any possible accusation that this plan encourages infanticide.

Death of spouse. In the event of death of spouse the surviving partner can enroll or continue the account. In case of remarriage any children born subsequent to the remarriage are added to the total for the enrolled spouse. Children born to the nonenrolled spouse prior to the remarriage are not counted.

Incapacitation. If the wife is incapacitated by mental or physical illness the husband can enroll.

Divorce. Because of disputes over child custody and problems of remarriage and subsequent childbearing, it was determined that in the event of divorce the account is forfeited. Individual cases can apply to the eligibility committee for exemption in cases of desertion or prolonged separation.

Polygamy. Children of second wives and concubines are not counted. Since the practice of keeping a second wife is diminishing this seems practical. Later, if this plan seems to be promoting the practice of polygamy, all children in each household may be counted as belonging to the first wife.

FINANCING

The original \$40,000 Population Council grant for support of this program included \$2,000 for administration and sur-

vey, and \$38,000 for deposit. Even if all 727 enrolled couples remain in the program, this deposit will be sufficient to cover enrollment fees and six full years of annual payments. Dropouts should allow this initial deposit to last even longer than anticipated, possibly for the full life of the program. With 9.5 percent interest, the amount necessary to hold one regular-plan couple for ten years is reduced from \$175 to \$108, if placed on deposit when the couple enrolls, rather than being deposited annually.

We decided that the checks issued to couples at maturation would be transferrable to any other person. They would not be redeemable for cash and could only be used for education payments.

Who Enrolled

Among the 961 women who were interviewed in the presurvey, 611, or 64 percent, joined the program (Table 3). Among women who had said that they wanted no more children, 79 percent joined; and 73 percent of those with 3 living sons joined. In the presurvey, all 327 women with no sons said that they wished to have one or more sons. Women with no sons and one daughter joined in 60 percent of cases, whereas those with no sons and two daughters joined in only 47 percent of cases. The lowest enrollment rate was among 25 women with no living sons but with three daughters, only 12 percent of whom joined the plan. Enrollment rates for women with no living sons, by number of daughters and by number of sons wanted were as follows:

Living daughters	Enrollment rate (%)
0	62
1	60 > 61
2	47
3	12 > 37
<i>Sons wanted^a</i>	
1	57
2	55
3+	60

^a Nonresponse and "up to God" omitted.

These findings tend to support the strong Chinese reliance on sons and indicate that unless a family has a boy they will be hesitant to limit births. Among 144 women who had one or more daughters but no sons, the mean number of daughters after which they stated they would stop trying for a son was 3.7.

Most important in analysis of this program will be its effect on finished family size. Among 80 women whose number of

TABLE 3. Enrollment Rates Among All Respondents (N = 961) by Various Categories

(figures in percents)

Category	All children						Sons			
	0	1	2	3	4	5+	0	1	2	3
Number living	62	66	63	62			55	66	74	73
Ideal number		74		72	56	49		76	64	62 ^a
Additional number wanted	79	67	59	59 ^a			73	65	55 ^b	

Note: Nonresponse and "up to God" omitted
^a Three or more.

^b Two or more

living children plus number of additional children wanted added up to two or fewer, 61 (or 76 percent) joined. Among 109 women who had three living children and who wanted no additional children, 85 (or 78 percent) joined. The final fertility of these 146 enrollees should not be materially affected by this incentive program. On the other hand, among 317 women who had zero, one, or two children and wanted three, 225 (or 71 percent) joined. Also 444 women claimed to want four or more children, but 237 (or 53 percent) enrolled anyway. If these 462 women (225 plus 237) actually have fewer children than they claimed to want, a portion of this reduction will be due to the program. If any real change in attitude has taken place, the stated additional children wanted among these women should decline appreciably within a short time. A follow-up survey to detect these changes could take place 12 to 24 months after enrollment. The final measure of this program will be not only how much total fertility is reduced, but how much change takes place in the fertility behavior of this group, representing 76 percent of enrollees, who expected more children than the program allows. This should be detectable within 48 to 60 months after enrollment.

Enrollment rates by a number of other categories were computed as follows:

Category	Enrollment rate (%)
Living in nuclear family unit (N = 310)	67
Currently use contraception (N = 127)	82
Household income over US\$100/month (N = 98)	74
Household income less than US\$25/month (N = 69)	70
Wife aged 25 or above (N = 463)	67
Own a television set (N = 438)	66
Head of household works as manual laborer (except farming) (N = 179)	57

Preliminary analysis of enrollees without controls indicates that most socioeconomic variables were not significant predictors of acceptance, including: number of living children, number of modern objects owned, importance of saving money, desire to live with children in old age, expectation that children will finish college or high school, and education of husband or wife. The best predictors of enrollment were: currently use contraception, want no more children, ideal family size has been achieved, ideal number of children is less than three, ideal number of sons is one, living sons number two or three, and living children plus additional children wanted equal three or less. The best predictors of nonenrollment were primarily those concerning preference for sons and preference for large families including: have three daughters, have no sons, want four or more children, want additional children or additional sons, and husband works as a laborer.

Evaluation

Registration events in the individual villages in the township are being planned for 1972. These events will include entertainment, speeches, and awards to the villages with high enrollment and continuation rates. Reregistration will take place at this time with allowance made for late registration of women or couples unable to attend the events. These public gatherings should increase social support for the program and make cheating more difficult.

We will administer short questionnaires annually at reregistration to determine the extent of contraceptive practice and any changes in fertility aspirations. We intend to use for control purposes a panel of women selected by matching from a KAP survey now in the field. Subsequent surveys in Hua Tan will be

timed to coincide with KAP surveys. Standardized questionnaires used in Taiwan will facilitate comparison and analysis. By September 1973 we should be able to measure the effect of this program on family size ideals, number of additional children wanted, and practice of contraception. By September 1975 we should be able to begin to measure the program effect on fertility.

NATIONWIDE SCHEME—OPERATION

Education in Taiwan is free of charge through junior high school (nine years). The education budget now consumes 32 percent of provincial tax revenues and 53 percent of local taxes (12). If significant fertility reduction occurs, these funds can be used to provide for increased higher education rather than continued classroom expansion, staffing, and maintenance for the lower grades. If significant changes in attitude and a measurable reduction in fertility result from our program, it will be offered to the provincial and national governments for possible adoption. It might operate as follows:

The finance ministry could initiate the program by establishing an educational trust fund within the existing postal savings system. If regulations permit, this trust fund should accumulate interest. The first couples recruited might be indigents from economically depressed areas. When a couple joined the plan, an amount equal to their initial deposit would be transferred to the trust fund. If they subsequently withdrew, their forfeited money could be used to pay enrollment deposits for additional couples.

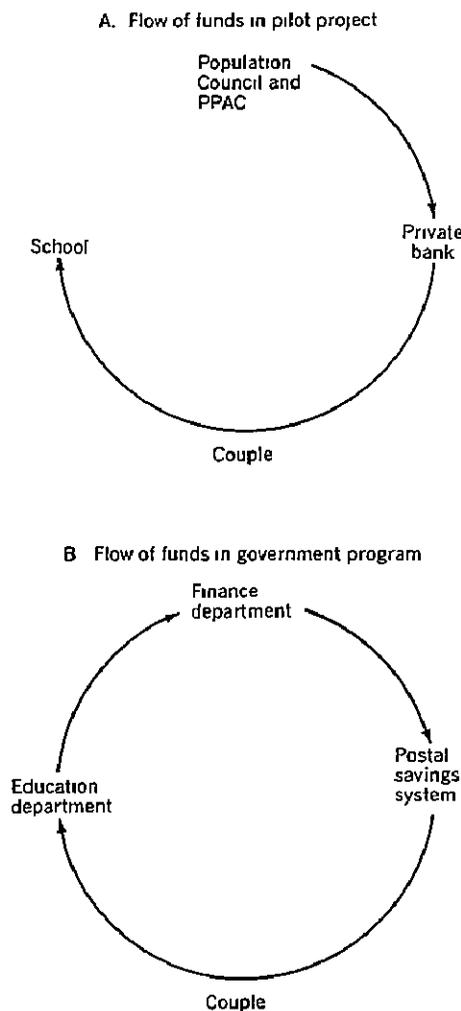
Government policy could determine how the postal savings program would use these funds, for instance in making development loans and in financing semi-government projects. After six or seven years of program operation the government would begin to obtain returns in the form of decreasing primary and junior high school enrollments. This should allow them to accelerate the tempo of recruitment and to extend the program to new locations and to additional families in operating areas. In a highly effective program the result would be equivalent to offering universal free high-school education since almost all families would be limiting their size to two or three children, and would be sending these children on to high school or college.

Since payment would be in the form of transferrable but nonredeemable tuition

payment checks, the funds would flow from the postal savings system's educational trust fund directly to individual schools, with the enrolled couples as the medium of transmittal. No funds would leave the government system. A comparison of the flow of funds in the pilot project and in the proposed system is presented in Figure 2.

A very rough cost analysis using present education costs and estimating that each enrolled and retained couple would prevent one birth yields a ratio of savings to investment, in education costs alone, in the neighborhood of seven to one. This investment, however, would be held in the postal savings program, so the transfer of funds would be entirely intragovernmental. As the pilot program evolves, and the effect on fertility is analyzed, a more sophisticated cost-benefit analysis of this program will be made. The additional social and economic benefits of reduced fertility and increased educational level will also be considered in future analysis.

FIGURE 2. Comparison of Funding in Pilot Project and Government Program.



CLOSING COMMENTS

Unresolved Problems*

In order to offer in advance a few qualifications to the generally optimistic presentation of this project, the following list of unresolved questions is presented:

Did couples join the plan simply as an "insurance" measure with no intention to change their fertility behavior?

Do husbands and in-laws approve of and support this plan, and is their support vital to success?

Does the support of community leaders necessarily denote strong general community approval of this program; and is this approval necessary for success?

Is the amount of money provided sufficient to keep families in the program; and is it equitable in terms of education payments?

How can this program focus on social welfare, rather than simply birth prevention?

What steps can be taken to insure that this project will be considered for extension at local expense, if it is successful?

When can plans be made for full-term financing of the pilot project; and when can more specific cost/benefit analysis be performed?

What exactly are the implications of any fertility reduction that may occur in the study area; and what are the special problems caused by preference for sons?

Will some families have children who will be ready for high school before the account matures; and did this discourage recruitment of those with older children?

How will we analyze reasons why couples did not join the program and why enrolled couples do not continue?

Are annual public meetings actually the best means of insuring continuation?

Should a similar township be selected as a secondary control, in addition to the matched cases from the KAP study population?

How can behavioral science inputs be maximized to include local psychologists, rural sociologists, social anthropologists, agricultural economists, and others?

Answers to these questions can, in some cases, be sought through surveys of enrolled couples and of those who failed to join, studies of those who were not eligible, use of selected villagers or villages as sources of information, reli-

* The authors are indebted to Mr. George Cernada for having played the role of "Devil's Advocate" in preparation of this section.

ance on the established channel of community leaders, and other direct and indirect measures. Throughout, all research activities in the study area must be carefully undertaken so as not to bias the study through undue investigation or unreproducible inputs.

It must be admitted that there is a possibility that this trial incentive program will fail to produce a strong and measurable fertility decline. If so, it will be as important to know the reasons for failure as it would be to know the reasons for success. Most important, failure of this project in Taiwan should not discourage programs from being tested elsewhere. The basic concept of transfer payments as rewards for reduced fertility remains sound, and deserves testing in a variety of forms in other countries. Thus, in conclusion, we offer guidelines for creating and testing similar programs.

Preliminary Guidelines*

A well-established conventional contraceptive delivery system can serve as a base for testing an incentive program that extends beyond family planning.

Choose an area that has delivery systems for family planning services.

Structure the project so that if it proves to be effective, it can be adopted and

* The first four of these guidelines are based on the report of a working conference on incentives held at Chapel Hill, North Carolina on 24 and 25 June 1971. The last five are based on the authors' experience.

financed with local money in the long term.

Include competent local researchers and personnel from the pilot area in all steps in planning.

Use the program to foster the social welfare and economic advance of those portions of society which are both poorest and most fertile.

Use an incentive that accords with local values, delivered through a trusted channel within a reasonable period of time.

Build in functional controls against fraud, but do not let the possibility of cheating stop the project.

Keep government officials and economic planners informed of the project, but do not expect to gain unanimous agreement before starting.

Work on extending privileges to small families rather than curtailing the established "rights" of large families; this will keep the focus on positive rewards rather than negative sanctions.

Remain flexible in the implementation period and be prepared to make new rules as additional categories of eligible couples are identified.

REFERENCES

1. Finnigan, O. D. and S. M. Keeny. "Korea/Taiwan 1970: Report on the National Family Planning Programs." *Studies in Family Planning* 2, no. 3 (March 1971): 57-69.
2. Taiwan East Asia Office Field Report, October 1970.

3. Ronald Freedman and T. H. Sun. "Taiwan: Fertility Trends in a Crucial Period of Transition." *Studies in Family Planning* 1, no. 44 (August 1969): 15-19.
4. Ronald Freedman et al. In various memoranda prepared by faculty and students of the Population Studies Center, University of Michigan, summer 1971.
5. Eva Mueller. "Attitude Toward the Economics of Family Size and Their Relation to Fertility." Unpublished manuscript, Nov. 1970.
6. Stephen Enke. "Government Bonuses for Smaller Families." *Population Review* 4, no. 2 (July 1960).
7. Julian L. Simon. "The Role of Bonuses and Persuasive Propaganda in the Reduction of Birth Rates." *Economic Development and Cultural Change* 16, no. 3 (April 1968).
8. Kingsley Davis. "Population Policy: Will Current Programs Succeed?" *Science* 58 (Nov. 1967).
9. Bernard Berelson. "Beyond Family Planning." *Studies in Family Planning* 1, no. 38 (Feb. 1969).
10. Ronald C. Ridker. "Synopsis of a Proposal for a Family Planning Bond." *Studies in Family Planning* 1, no. 43 (June 1969): 11-16.
11. Lenni W. Kangas. "Integrated Incentives for Fertility Control." *Science* 169 (Sept. 1970).
12. Taiwan Provincial Health Department. *Teachers' Guide to "Paste Your Umbrella before the Rain."* Taichung: Family Planning Committee, 1971.

"Law and Family Planning"
 Luke T. Lee
Studies in Family Planning,
 Vol. 2, No. 4, April 1971 (extract).

As more and more disciplines become involved in population planning, it is becoming possible now to speak of broad, multidisciplinary approaches to reducing fertility. One potent area for such cooperation is in the field of law. It has become apparent to social scientists that legislation and form of government may have far greater effects on fertility than contraceptive delivery systems. Much of this legislative impact has historically been in the form of welfare benefits, housing, or social services to reward large families and to promote higher fertility. This paper discusses the history and impact of such legislation, and the possibility that similar legislation could be used as incentive to small family size.

Family Allowances

Eligibility for family allowances is usually determined by number and ages of children. In some countries there is an upper limit on the number or ages of children within any one family for whom these allowances will be granted. In general, "the impact of family allowances depends much on the size of payment per child. Where the size of payment exceeds or approximately equals the actual cost of bringing forth, rearing, and educating a child, it may act as a stimulant to fertility.... On the other hand, if the payment is only nominal, the causal relationship between family allowances and fertility may be tenuous at best, as seems to be the case in most of the developing countries."

Other forms of existing family allowances which have either positive or negative effects on fertility include: marriage grants, low interest loans to young married couples with interest reduced as each additional child is born, education grants to keep children in school as long as possible, rent reduction in government housing, subsidized or free higher education.

Maternity Benefits

Examples of these policies include: prizes for prolific mothers, prenatal allowances, birth grants, maternity leave, free maternity care, and earlier retirement for married women than for single. In some few countries these benefits are regressive in that the more children

a woman has, the less benefit she receives for each child. In others, these benefits have a ceiling stated in terms of numbers of children.

Income Tax

In almost all countries there is a systematic income tax reduction for persons with family responsibilities. Special taxes on unmarried people and childless couples, although less perceptible than family allowances, can be one of the factors in decision making regarding marriage or child-bearing.

Most social welfare and tax legislation to date has been favorable toward large family size. However, in Eastern Europe and some developing countries this pattern is beginning to be reversed. The argument is that if a government can provide financial incentives to couples to marry early and to bear many children as an inducement to increasing population growth, it has an equal right to withdraw these incentives or to add financial rewards for small families, as an inducement to reducing population growth.

(Editor's note: The history of legislation in this area as outlined by Dr. Lee can be supplemented by reference to two publications not included here:

"Law and Population in Eastern Europe" Peter Maggs, Law and Population Series, No. 4, Fletcher School of Law and Diplomacy, March 1972

"The Legal Capacity of the United Nations System in the Field of Population" Daniel G. Partan, to be published as Law and Population Book Series No. 2, fall 1972).

supplementary allowances while the children are attending school. In some countries the system of family allowances is related to employment, by means of a payroll tax, which may have a depressing effect on wages or an inflationary effect on prices. If marriage grants may be analogized to family allowances, we may also mention here outright grants on the occasion of marriage, as in the case of Portugal, or interest-free loans that are increased if the bride gives up her employment or are partially cancelled with the birth of each child, as in the case of Spain. Because of the great variety of possible systems, it is statistically difficult to make useful comparisons of allowances paid and their impact on the size of families.

A comparative study of birth rates in Sweden and Norway after the last war suggested that the evidence concerning Sweden did not "exclude the possibility that family allowances have had some [positive] effect upon fertility in young marriages." Such effect was not present in Norway, where payments begin only with the second child and are not part of a comprehensive family program as they are in Sweden.³³

It may be safely stated, however, that the impact of family allowances on fertility depends much on the size of payment per child. Where the size of payment exceeds or approximates the actual cost of bringing forth, rearing, and educating a child, it may act as a stimulant to fertility, as is reputed to be the case in post-war France, especially in increasing the frequency of births of second and third parity. On the other hand, if the payment is only nominal, the causal relationship between family allowances and fertility may be tenuous at best, as seems to be the case in most of the developing countries.

Since Belgium allotted 3.01 percent of its national income to family allowances in 1963, the second highest percentage after France, at a total expenditure of 16,607 million Belgian francs, it may be useful to follow in detail the Belgian system of family allowances.³⁴ The motives behind the granting of family allowances are those of social justice and population expansion. From the social point of view, it is a ques-

tion of providing for each family resources proportional to its real responsibilities.

The system of family allowances is organized in the following manner: Whoever in Belgium employs one or more persons must be affiliated with a Compensation Fund, free or special, or with the National Office of Family Premiums for Wage-Earners (ONAFTS). All employers therefore pay an assessment to one of these organizations. The assessment is the same for each employee, regardless of his marital or parental status. These organizations then redistribute the sums received as family allowances to eligible persons.

The recipient (the mother or the person who raises the child) receives monthly:

	<i>Francs</i>
(1) for the first child	594
(2) for the second child	957
(3) for the third and each subsequent child	1,375

The rates are raised according to the child's age:

	<i>Francs</i>
(1) for the 6 to 10 year old child	130
(2) for the 10 to 14 year old child	228.75
(3) for the child over 14	340.50

To obtain allowances for a child over 14 years of age, it is necessary to prove that he or she is a student, an apprentice, a young woman housekeeper replacing an incapacitated mother, or one incapable of working. The child is entitled to allowances until the age of, respectively, 25, 21, 21, and, in the last case, without age limit.

There is also a system of family allowances for self-employed workers. Such workers pay an annual fee to a Mutual Fund of Family Allowances or to the National Office of Family Allowances for Independent Workers (ONAFII). These organizations make allocations to the independent working members with families. The following monthly allowances are provided:

	<i>Francs</i>
(1) for the first child	202
(2) for the second child	273
(3) for the third and each subsequent child	1,375

SOCIAL AND WELFARE FACTORS

Family Allowances

Following the depression of the 1930s, many governments assumed a greater responsibility for the economic and social well-being of their people, and the introduction of family allowance programs became widespread in the post-war period. The United States and Japan are now the only two industrialized nations without a general family allowance program.

Eligibility for a family allowance is determined in most cases by age and order of birth. Thus, some countries only start payments for the second or third child born, and a few countries have imposed an upper limit on the number of children within any one family for whom the allowances will be granted. Some countries vary the amount of the allowance as the number or age of children increases or grant

³³ H. Gille, "Scandinavian Family Allowances: Demographic Aspects," *Eugenics Quarterly*, 1 (3):188-189, 1954; U. N. *Measures*, p. 36.

³⁴ See note 19 above.

Family allowances for government employees are the same as those for other wage-earners, plus the following supplements:

	<i>Francs</i>
(1) first child	144
(2) second child	144
(3) third child	149
(4) fourth child	179
(5) fifth and subsequent child	190

Czechoslovakia furnishes another example of how family allowances work. Constituting 2.57 percent of its national income of 172,900 million crowns, at a total budget of 4,443 million in 1963, the Czech family allowances assume the form of payments of standard additions to the income or pension of the head of the family for children of school age or receiving university education up to 26 years of age, provided they are enrolled in universities and have no income of their own in excess of 500 crowns per month.

Until the birth of the fourth child, family allowances are calculated at a progressive rate: 90 crowns per month for one child, 330 for two, 680 for three, and 1,030 for four. Beyond that number the standard rate of 240 per month per additional child is given.

Another form of family allowance is rent reduction in government housing: 5 percent reduction for one child, 15 percent for two, 30 percent for three, and a maximum of 50 percent for four or more. Additional indirect forms of family allowances are government subsidies to industries making children's clothing which is sold at below cost, free distribution of textbooks and school supplies, and free school meals. Although scholarships have as their primary aim the proper training of cadres of specialists and skilled manpower, they become a population measure when the material and social situation of the applicants is given heavy weight in the determination of allocations.³⁵

Maternity Benefits

Leaving aside the few instances of countries that actually award prizes to prolific mothers, several countries provide prenatal allowances or birth grants as part of the family allowance program. A consid-

erable number also provide maternity insurance programs, sometimes linked to employment; and frequently the labor laws require such programs for women who are employed.

Such provisions act as a mitigating force on the well-established negative relation between female employment and fertility. Sometimes maternity benefits, such as paid leave, may defeat family planning programs, as was the case in the Kerala region in India. Two state governments of India (Mysore and Uttar Pradesh) subsequently limited the maternity leave that tea plantations may make available to their female employees to the birth of the first three children.

Since maternity benefits may be considered a form of family allowance, it would be appropriate to continue with the Belgian and Czech examples in the interest of continuity. Belgian legislation provides quite substantial maternity benefits, representing for many workers an amount almost equal to their monthly salary in the case of the first child. These benefits are given to wage-earners by the Compensation Fund or by public authorities. Self-employed workers receive benefits from the organization in charge of paying family allowances.

The rates of benefits are regressive. The mother (or the person who raises the child) receives:

	<i>Francs</i>
(1) for the first child	8,841
(2) for the second child	6,097
(3) for the third and each subsequent child	3,281

These benefits are given "at the birth of any child" qualified for family allowances. They may be requested after the sixth month of pregnancy, regardless of the number of previous childbirths.

In the case of Czechoslovakia, the length of paid leave for working women depends upon their marital status, number of children, and length of employment. They receive portions of their average wages at a decreasing rate during leave.

A comparison of Law Number 88 of 27 June 1968 with the Law of 2 March 1964 will be useful in showing the change in Czech population policies. Under the 1964 law, maternity leave for women employed in government institutions was set at 22 weeks for each pregnancy. Single

women—unmarried, divorced, widowed or deserted—were entitled to 26 weeks of paid maternity leave, while mothers of two or more children were entitled to 35 weeks of leave. The pay during the first 18 weeks of leave was calculated at 75 percent of a woman's average earnings if she had been employed for less than two years, or at 80 percent if for more than two years. After the first 18 weeks, the rate was reduced to 40 percent. However, if the woman had one child, she would receive 50 percent instead of 40 percent, and if she had two children, 60 percent. Single women were entitled to 75 percent for the remainder of their maternity leave.

Under the 1968 law, basic maternity leave has been extended from 24 to 26 weeks with additional benefits. A working woman is entitled to an equalizing allowance in the event of her being transferred on account of pregnancy from a higher to a lower paid job. The allowance survives the termination of her maternity leave if she is unable to resume her previous higher paid job. The same equalizing allowance is given to a pregnant woman or one who has recently become a mother if she was accustomed to working overtime and is unable to do so either before or after the delivery.

Rates of maternity leave pay have been revised upwards: The basic rate is set at 90 percent of the average earnings, but not to exceed 600 crowns per week for a period of 26 weeks. Paid maternity leave may be extended to 35 weeks if the woman has two other children under her care or is single. In addition, a grant of 1,000 crowns is made on the birth of each child.

Another sign of the pronatalist policy is the reduction of the retirement age for working women. While childless women retire at 57 years of age, women with children may retire sooner on a scale descending to 53, depending upon the number of children they have.

Taxation on Income

Nearly all countries provide some system of income tax reduction for persons who have family responsibilities, as a means of easing their financial burden incurred by additional expenditures. This reduction is similar to family allowances in purpose. Occasionally, as in the case of the Soviet Union and Romania, a special tax is levied on the unmarried as well as on childless couples. Such a tax on unmarried

³⁵ Grzybowski, *op. cit.* note 23 above.

persons in India was abolished by the Finance Bill of 1965;³⁶ a tax exemption is still retained there for those who are married with two or more dependent children and an income below a certain level.

In assessing the effects of taxation systems that allow deductions for a family with children, it would be wrong to assume that these effects would be directly analogous to those of family allowances. Tax exemptions are a less perceptible addition to the family wealth; and, more significantly, in the case of most developing countries, the minimum taxable income is already far above average *per capita* income, thus allowing the benefits of such tax exemption to only a small part of the population. Furthermore, an effective system of tax exemption is predicated *a priori* on the existence of an effective income tax system, which does not always obtain.

In view of the analogy between tax exemptions and family allowances, a comparison of their rates may be useful. The following are relevant Belgian tax laws, supplementing the laws governing family allowances and maternity benefits given earlier:

Article 77 provides: For the taxpayer whose taxable income does not exceed 160,000 Frs, the tax is fixed according to a scale established by the King, to an amount varying from 300 to 28,300 Frs; on this tax a discount is given for dependents at least equal to the one provided for in Article 81, paragraph 1.

Article 79 of the law on income taxes provides that the tax is not due until taxable income reaches: 26,000 Frs for a taxpayer having no dependents; 31,000 Frs for a taxpayer having 1 dependent; 36,000 Frs for a taxpayer having 2 dependents; 41,000 Frs for a taxpayer having 3 dependents; 61,000 Frs for a taxpayer having 4 dependents; 61,000 plus 30,000 Frs per dependent beyond the fourth one, for taxpayers having more than 4 dependents.

Article 81, paragraph 1, provides that on the tax calculated in accordance with Article 78, there is a discount of: 5 percent for a taxpayer having 1 dependent; 10 percent for a taxpayer having 2 dependents; 20 percent for a taxpayer having 3 dependents; 30 percent for a taxpayer

having 4 dependents; 50 percent for a taxpayer having 5 dependents; 70 percent for a taxpayer having 6 dependents; 90 percent for a taxpayer having 7 dependents; 100 percent for a taxpayer having 8 or more dependents.

Paragraph 2 provides that no discount is given on that part of the taxable income which exceeds 250,000 Frs plus 25,000 Frs for each additional dependent in excess of four. This tax is calculated at the rate specified for those increments of taxable income above that amount.

³⁶ See B. L. Raina, "Possible Effects of Public Policy Measures on Fertility in India," in U. N., *World Population Conference, 1965*, Vol. II, p. 102.

PART IV IDEAS AND RECOMMENDATIONS

Recommendations for incentives for contraceptive acceptance and continuation can be drawn from the experience of various countries as presented in Part III-A (Annotations 8-17). There is no lack of tested or testable ideas for awards, prizes, fees for referral, fees for service bonuses, compensations and other rewards to acceptors, motivators, and/or medical practitioners. The problem, then is to define the acceptor and continuation goals, and to tailor the incentives to these goals. In general such incentives should:

1. Act as a floor under recruitment rather than as a ceiling to recruitment;
2. Maintain or reduce salary levels (overhead) while improving the utilization of existing facilities on a "fee per case" basis;
3. Enhance continuation as well as recruitment;
4. Emphasize the best methods in terms of continuation and effectiveness;
5. Be designed so as to draw into the program motivational personnel who are not necessarily full-time family planning workers;
6. Include a mechanism for sharing between formal and informal motivators, or between motivators and clients;
7. Be supportable by local funds after an initial period of international support;
8. Be tested in a controlled situation before being implemented nationwide.

Recommendations for incentives for birth prevention are not as simple, mainly because few such programs have been tried. The recommendations of Kangas (Annotation 6) and Pohlman (Annotation 7) are no substitute for well thought out plans tailored to a specific country. When local conditions are considered, however, it is important to realize that these programs are not introduced in a vacuum. The minimum personnel inputs necessary to formulate and adequately test workable plan seem to the author to include:

1. Sociologists and demographers to define the problem in terms of family size and fertility;
2. Anthropologists and psychologists to comment on the impact of such programs on the family and on the individual;
3. Economists to analyze feasibility on a macro scale, and impact on family finances;
4. Social workers to help personalize programs which might otherwise become mechanistic;
5. Health personnel to help assure the availability of contraceptive services;
6. National economic planners to guarantee that a long-range and broad perspective is employed, and that the results of any test will be carefully scrutinized by the government;
7. Lawyers to insure that human rights are protected;

8. Government administrators to comment on the administrative feasibility of any proposed program;
9. Representatives from sectors which may provide the actual incentives such as education, finance, internal revenue, housing, construction, electrification, or health;
10. Consumers - the people who will be offered the incentives in exchange for reduced fertility.

There are undoubtedly others who should be consulted in such an undertaking. It is axiomatic that the design, testing, and implementation of incentive programs for reduced fertility cannot be left solely to the medical and health personnel who have too often been given full responsibility for reducing population growth to a manageable level.

"Doing Research on Incentives"

Edward Pohlman, Incentives and Compensations in Birth Planning, monograph No. 11, Carolina Population Center, 1971

The failure to conduct pilot studies and field experimentation has produced negative effects in some aspects of family planning, such as the Indian IUD program. The introduction of the IUD was prompted by (1) failure of conventional contraceptive programs and (2) optimism over this new method.

Pohlman calls for starting research on incentives immediately in order to have a well-tested alternative at hand when policy makers become dissatisfied with present attempts to reduce fertility. He points out the potential of incentives as powerful agents of social change in many spheres, and calls for multidisciplinary design.

To the lists of Sprehe (Annotation 5), Kangas (Annotation 6), and Rogers (Annotation 10), Pohlman adds several possible dependent variables for carefully planned and controlled research as: (1) alternative behavior (vasectomy, late marriage, small final families, etc.) as alternative foci for incentives; (2) alternative rationales to offer the public as to why incentives are being offered; (3) incentives with and without provision of special supplies and services for contraception; (4) incentives with and without contraceptive information.

Pohlman offers several measures for program success in terms of dependent variables including (1) immediate response such as recruitment, (2) contraceptive acceptance, (3) attitudes of target people, (4) family size norms, (5) general public reactions, (6) use made of incentives, (7) demographic indices such as later marriage, increased spacing or reduced family size.

The author calls for careful research design, selection of approaches with good public appeal, and with a good chance of success. This should help to reassure the watching fraternity of family planning leaders who might be misled by poor research; "if one large incentive scheme seems not to succeed, the conclusion might be that large incentives 'will not work'".

He also indicates that quasi-experiments which do not isolate all important variables may be valuable in demonstrating feasibility and in indicating that a general trend may be obtained with the aid of an incentive program.

DOING RESEARCH ON INCENTIVES

Research may give controlled evidence as to how well proposed ideas work in practice. Before full-scale programs are launched, trials are essential, for political, scientific, and practical reasons. Some who would forbid regular programs may grudgingly permit "research" and hence the start of programs. At present most truisms about incentives are based on guesswork; there has been little research. No experiment has checked systematically whether larger incentives mean a higher acceptance rate for vasectomies; the post hoc analyses on this point are fraught with interpretative landmines.

It would be unwise to jump into a full-scale program without pilot studies and field testing. The IUD was introduced to India in this hasty way, and it took years for longer range negative effects to become fully apparent. Sterilization incentives might be simply drawing users from other methods; the volume of men attracted by incentives might swell over the years or die away. Birth rates and other indicators should be followed for years; indeed with "small family" incentives it might take years for results even to begin to appear.

In two or three years there may be massive pressures to use large incentives extensively, if dissatisfaction with more traditional population measures grows. There might then be an almost frantic scramble for data to guide policy decisions. Research should be started immediately, in anticipation, so that its mature fruits would be ready when needed. Scientific by-products could spring from incentives research, which might make available unprecedented funds for manipulating human behavior experimentally and

testing theoretical propositions in the process. Long-range social change as well as short-range effects should interest scholars of many disciplines.

Some Indian leaders are violently opposed to any experiments with incentives because they "use humans as guinea pigs." Incentives have become such a storm center in India that research on them has immediate public opinion and political implications. Ideal research designs, such as those elaborated below, may need to be scrapped because they are not feasible in a given political context.

Non-experimental approaches

Simon (1968a) recommends "suppositional" studies which ask people to imagine various incentive schemes and tell how they would react (our Chap. 9). "It is axiomatic in market research that actual purchases are the only reliable guide to the demand function." But, argues Simon, because field experiments are (1) expensive, (2) may take a long time for results to become known, (3) might seem unjust to neighboring communities, and (4) are so politically sensitive, suppositional studies have merit. But even such studies have encountered strong objections in India. One reason given: the plan to give transistor radios raised men's hopes so that they deferred vasectomy, waiting for the radios (which never came); any suppositional questions might be misunderstood as heralding government plans. (Men in Rampur showed no such misunderstandings—see Chap. 9.)

New programs and systematic experiments require special permissions and "red tape" and political problems; much could be learned by systematizing data from ongoing programs. Some information from "accidental" variations in incentive inputs has been gleaned (our Chap. 6), but this has been haphazard. With only slight additional efforts, variations could be planned systematically with feedback information as an integrated feature. An enormous amount of potential information is constantly being lost.

Committee suggestions on research

Hill, Driver, and Nag (1968) interviewed over 100 individuals scattered throughout India, representing different social science disciplines. They ended some interviews and group conferences by handing out five cards to be rank ordered as to priority for research. Each card listed a possible research theme and gave examples. Only seven administrators and 24 social scientists were included in the resulting tabulations, a non-random and limited

sample. The administrators gave three items top priority and three low priority. Incentives were given high priority, and the average deviation was smaller than on any other item, suggesting consensus. In contrast, social scientists gave incentives the lowest average ranking, although the average deviation was large, suggesting that many disagreed with this low placement. The social scientists typically gave high priority to more theory-oriented research topics, rejected in priority by administrators.

Hill and his colleagues itemized suggestions received for research, including a comparison of blocks using incentives with blocks following the extension educator plan and using no incentives, and "A comparison of the adoption rates of civil service workers in states applying disincentives . . . with similar categories of personnel in states without such disincentives." India's Demographic and Communication Action Research Committee (1968) also recommended studies on incentives to acceptors and staff.

A committee of the Christian Medical Association of India (1969) recommended testing the efficacy of various incentive schemes, including group rewards to hospital staff and "finders," and such incentives to acceptors as "ante-natal services, hospital delivery, infant care and post-partum care" (see our Chap. 3). Whereas Indian government hospitals must conform to official patterns, private hospitals could experiment, providing systematic contrasts (1) between private and government schemes and (2) among various private schemes. (The same possibilities exist in private industry.) The report suggested that group incentives for teamwork were better than individual staff incentives, but viewed this as a hypothesis to test.

INDEPENDENT VARIABLES

All the factors discussed in Chapters 2 and 3 are potential independent variables for research. In theory these include (1) alternative behavior (vasectomy, late marriage, small final families, etc.) as alternative foci for incentives, (2) alternative forms of incentives (bonds, cash, merchandise, free medical or educational benefits, etc.), (3) larger or smaller amounts of incentives, (4) "starting small" and moving toward larger magnitudes or vice versa, (5) incentives to individuals versus communities, (6) alternative rationales to offer the public as to why incentives were being offered, (7) incentives alone or in combination with education or promotional campaigns, (8) incentives with and without provision of special supplies and services for contraception, (9) in the case of sterilization, IUD, or injectibles, incentives tied to specified family

size versus those not thus limited, (10) incentives to patients, physicians, and promoters in various "mixes," and (11) positive versus negative incentives.

Incentive programs should be compared with suitable controls where no such programs are used. The writer was encouraged by personnel of one major fund-granting agency to prepare a proposal where X amount of money was spent on incentive programs in certain communities and compared with exactly the same amount spent on more conventional "services and supplies" approaches in other communities. This seemed inappropriate because (1) relative impact of incentives versus services-supplies may depend substantially on the stage of family planning involvement of a community; (2) more and more funds may be dumped into population control and if so the question may not be incentives *versus* services-supplies but whether both together can do more than the latter alone; (3) costs of initiating a program are different from those of maintaining a program, so that it might be unfair to compare incentives at their expensive pioneering stage with experienced and relatively perfected traditional approaches; (4) additional costs of including traditional approaches in a comparison might not be justified until it had been established that incentives were feasible at all; (5) preliminary studies of incentives might show the basic approach feasible but details needing alteration, and these changes should be made so that it is the revised incentive program which is used in the expensive comparison with supplies and services; and (6) for rough comparisons of incentives with supplies-services, data from presently ongoing programs of the latter type might be sufficient.

Eventually research should compare programs of (1) contraceptive services and supplies, (2) incentives with contraceptive information but no supplies given out, (3) both, and (4) controls. Various mixes of incentives and services, and various levels of expenditure, could be tried. One may hypothesize that (1) is superior to (4), (2) is superior to (4), and (3) is superior to (1), (2), or (4); and that X outlay of funds would prevent more births when spent on (1) than on (2) in early stages of a program but the reverse would be true later on. After a community has had few services or supplies, there is often a strong motivation to stop unwanted pregnancies. After this cream is skimmed, when the ambivalent or poorly motivated remain, incentives should be relatively more important. If people "want too many children" (our Chap. 13), services and supplies will not bite into this hard core of births. Thus research on communities in one stage may tell us little

about relative merits of incentives versus services-supplies for communities at another stage.

SCHEMATIC RESEARCH DESIGNS

Tables 2 and 3 present schematic research designs for what seem to be the two leading "candidates" from Chapter 2, vasectomy and "non-pregnancy." A research program could try out both these approaches simultaneously and *pretend* to compare them systematically, but only an elephantine study could really do so. Hence we have treated each as a completely separate study.

TABLE 2

Schematic Research Design for Vasectomy Incentives

	I Cash	II Bonds	III Other forms of payment
1. Same amount to each eligible man (no gradation by family size; no group quotas)	A B C ^{a b}	A B C	A B C
2. Gradations by family size; no group quotas	A B C	A B C	A B C
3. Group quotas; no gradation by family size	A B C	A B C	A B C

a. Each cell (for example, A of I-1) should involve several villages, to neutralize idiosyncracies of any one particular village.

b. A, B, C: Different magnitudes of incentives, large, medium, small, etc.

Table 2 involves vasectomy incentives. Columns (I, II, etc.) compare *forms* of payment; subcells A, B, and C compare large, medium, and small *amounts*. Rows (1, 2, etc.) represent matters discussed in Chapter 3, illustrated by these problems: Rs. 1,000 for vasectomy after exactly three children might bring out 50% of the three-child fathers, but possibly Rs. 1,000 offered to everyone regardless of family size might also have brought out half the three-child fathers. Similarly, giving Rs. 1,000 to each man, *provided* at least 50% of the eligible men respond, may result in 50%; but without experimentation we cannot be sure that 50% would

not have responded anyway, even without the quota. Still other rows and columns might have been added to Table 2.

Because any single village might be idiosyncratic, ideally a study should have two or three villages replicating one another. But with 3 columns, 3 rows, 3 magnitudes, and 3 villages per cell, Table 2 would represent 81 villages. Fragments of Table 2 could be studied: any one row only; or any one column only; one row or column with only one magnitude; one magnitude for all rows and columns; magnitudes A, B, and C for one cell only, etc.

Table 3 is adapted from a research proposal (Pohlman, 1967c; 1967d). Much of the preceding paragraph applies also to Table 3. Also, Table 3 might be applied to vasectomy and Table 2 to "non-pregnancy" incentive schemes, with modifications.

TABLE 3

Schematic Research Design for "Non-Pregnancy" Incentives^a

Group	Incentive	Special contraceptive help?
Experimental 1 ^b	Large	Yes
Experimental 2	Small	Yes
Experimental 3	Large	No
Control 1	None	Yes
Control 2	None	No

a. "Non-pregnancy"—see our Chap. 2.

b. Each group should involve several villages, to neutralize idiosyncracies of any one particular village.

DEPENDENT VARIABLES

In analyzing all dependent variables, analyses should be by subgroups, such as sex, age, caste, education, religion, and income. Variables should be measured before as well as after incentive programs to permit comparison, although "pretests" sometimes actually influence people to change subsequent behavior.

Here are some key dependent variables: (1) *Immediate response*: Did people do what incentives aimed to get them to do and if so in what proportions did particular subgroups respond? (2) *Contraception*: "Non-pregnancy" or other schemes rewarding some behavior other than contraception may nevertheless study

sales, distribution, knowledge about or reported use of contraception. (3) *Attitudes of target people*: What are the attitudes toward the incentive program, the method advocated (if any), and birth planning in general, among those who accepted and refused the offer? (4) *Family-size norms*: We hypothesized that large incentives might change ideals and norms to match small-family actions (our Chap. 3); surveys could check this. (5) *General public reactions*: The general public and influential political and professional leaders have important reactions to incentive programs. (6) *Use made of incentives* and (7) *Demographic indices* deserve elaboration below.

If cash is given, how is it spent? If funds were designated for use in specified ways, were they so used? Were merchandise or bond incentives translated into cash anyway, perhaps at a loss? Such questions would (1) help guide the forms in which future incentives were given, (2) aid in explaining and defending the incentives program, and (3) help to assess economic effects of a wide-scale application of the tested incentive program (Mueller, 1967).

In the long run, incentive programs must produce changes in birth rates and associated demographic indices. There are dangers in staking the evaluation of a small and short-range program on such measures, however, since it may take much time for such changes to appear, and small programs reaching only a segment of an area may be diluted if rates for the entire area are used.

HYPOTHESES

Tables 2 and 3 suggest some hypotheses, as does the section above on Independent Variables. Other chapters contain many hypotheses that might be formalized for testing. We illustrate by stating a few hypotheses implicit in Chapter 3: (1) Cash is more effective than other forms of incentives but (2) is less politically acceptable. (3) Cash labeled as providing opportunities for existing children will be more politically acceptable than cash simply announced as such. (4) Immediate incentive payment is superior in effectiveness to deferred payment, even if the latter has the compound interest added to it. (5) When deferred payment is used, a bond dramatizing immediately the reality of the later payment is more effective than a mere written promise of payment later.

OTHER CONSIDERATIONS IN RESEARCH

Research may be used as an excuse to delay action. Some have criticized research on population control as pedantic fussing when

the problems and paths of action are obvious. Fortunately not everything must be discovered by research, though the Goddess of Reason has been crowded over by the new deity, Research. The researcher may need to select from the armchair the most promising incentive scheme or schemes and test them, without worrying because he did not compare all possible schemes first.

The watching fraternity of family planning leaders might be misled by poor research; if one large incentive scheme seems not to succeed, the conclusion might be drawn that large incentives "will not work." If experimental schemes stirred up severe controversy and political problems, this could discredit incentive approaches for some years. If possible, research should start with approaches that have good public relations value and seem likely to succeed.

Because population questions are urgent and incentive experiments take years to unfold, a phased program of research would be ideal. The most promising approach may be launched in one area; if this starts well and public reactions are not prohibitive, one or more other experiments may be started immediately, though long-range effects will not be fully known until much later.

Demonstration projects are useful even when they cannot experimentally isolate all important variables. In Rampur (our Chap. 9) we hoped to demonstrate feasibility of a general program to gain funds and political approval for more extensive research in a block of villages. Hence we blended rows 2 and 3 of Table 2, knowing that we would not be able to isolate fully the responsible variables in success or failure. An incentive study may demonstrate or test some *components* of a potential incentive program. For example, an experiment may simply show the effects of giving a certain form and magnitude of incentives—even if administrative procedures used in the experiments would have to be replaced in any more general application.

Are there times when an administrator should not be asked for approval, because if faced with the question he has no choice but to say no? Large incentives may be perceived as such a dangerous issue, politically, that an administrator may not want to go on record as approving. Secretly, he may wish the experiment well. To go ahead after a "no" is more dangerous than proceeding on the "misunderstanding" that approval was automatic, though either path is risky. Experiments with little fanfare and public attention may run less risk of bureaucratic notice and veto.

Villages or individuals may be angry if they find that others got the incentive while they did not. Some may hold back until similar

large incentives come to their community—which may never happen. Limiting experiments to relatively isolated villages, or choosing research locales so scattered that news does not travel back and forth, have advantages. This “may rule out the use of different parts of the same city” (Mueller, 1967). Probably sampling plans should pick whole communities as units, rather than families within villages, to reduce jealousy. Programs may appeal to those already motivated, creating an initial rush for contraception and the illusion of a great demand, falsely projected to continue. One advantage of attacking a whole village: one can see what proportions of which eligible groups respond.

The special enthusiasm of researchers and special attention given families in an experiment cannot be sustained when an exciting pilot program becomes the dull monotony of bureaucratic routine. The use of control groups does not necessarily guard against this factor. The logic underlying control groups should always be followed, and actual control groups used when possible. But Table 2 plots no control groups, instead comparing only among different vasectomy incentive schemes. Past experience with vasectomy can be used for comparison, though such comparisons are less satisfactory than true controls.

"Testing Incentive Plans for Moving Beyond Family Planning"
O. D. Finnigan, April 1972

This paper is an attempt to aid in the removal of constraints which have prevented testing of incentive plans for birth prevention. These constraints have included the optimistic assumption that such programs would not be needed once contraception was made freely available, the assumption that such programs were infeasible, and the lack of sound original ideas tailored to local situations and based on studied appraisal of the economic and administrative capabilities of each country.

This paper presents five rough models for testing incentives on an experimental basis. These include: New School Construction Plan which would offer to a community construction and staffing costs for a high school or technical school if the birth rate in that community dropped and stayed below a set level; Certificate of Membership Plan which would provide an elaborate framed certificate for household display to be validated annually and to be exchanged for free education after a certain number of years of successful participation; Family Plan Project which would personalize the incentive by offering a broad social welfare package in exchange for successfully following a jointly prepared "family plan"; Farm Equipment Plan which would give a tractor or other needed implements to couples or groups of couples for maintaining a specified family size or fertility level; Redemption Center Plan which would give services or commodities to successful contraceptors dependent on the effectiveness with which births were prevented.

The paper also reappraises political, administrative, economic, and ethical constraints to implementation of such programs, especially on an experimental basis. A reappraisal of Berelson's conclusions regarding incentive payments as a means of moving "beyond family planning," indicates that in some countries or areas tests of transfer payment type birth prevention incentives would be administratively feasible, politically viable, ethically acceptable, and decidedly more effective than putting an equal amount of money into improving maternal and child health services.

O. D. Finnigan
Manila, Philippines
April 3, 1972

TESTING INCENTIVE PLANS FOR MOVING BEYOND FAMILY PLANNING

BACKGROUND

In pre-industrial societies where fertility and fertility aspirations are high, the perceived value of children as sources of farm labor and old age support usually far outweigh the perceived advantages of limiting family size through early acceptance of contraception. Family planning programs are finding it difficult to recruit rural couples to contraceptive practice before the desired number of children is achieved, usually at a total of four or more children.

In well established national family planning efforts, such as those in Korea and Taiwan, the provision of free or low cost contraception has allowed both urban and rural couples to stop having children when they wish, usually at an average of about four children per couple. In several countries some downward shift has been experienced in the stated desired family size of city couples who have considerably different fertility from their rural counterparts. However, in the countryside few couples accept contraception for spacing their children, and virtually no change has been made in the numbers of children that rural people want to have, especially when education, income, and age are held constant.

In order to encourage rural couples to lower their family size ideals it is necessary to convince them that they don't need many children to work the land, or to provide for their own old age support. If a suitable substitute could be found to replace the perceived advantage of third, fourth, and subsequent children in rural parents' minds, then it might be possible to convince couples to have only enough children to take over the management of the family acreage. In most situations this would be about two or three children, provided they have at least one son, who could take over the farm and take care of his parents in their old age.

Several proposals have been put forward for pension schemes which would substitute for the anticipated old age support of children.¹⁻²⁻³ In some countries or areas, however, this approach might not succeed due to the lack of previous experience with pension schemes, the lack of confidence in governments to pay, increasing inflation which constantly reduces the value of final payments, the lack of a long range orientation among recipients, and the immediate need for the labor of children.

1. Ronald C. Ridker, "Synopsis of a Proposal for a Family Planning Bond," Studies in Family Planning, Vol. 1, No. 43, June 1969.
2. Ronald C. Ridker, "Savings Account for Family Planning, An Illustration from the Tea Estates of India," Studies in Family Planning, Vol. 2, No. 7, June 1971.
3. International Planned Parenthood Association, "Incentive Payments in Family Planning Programs," Working Paper No. 4, undated.
4. Stephen Enke, "Government Bonuses for Smaller Families," Population Review 4, No. 2, July 1960.

The concept of transfer payments as rewards for small family size is basically sound;⁴ however, implementation must be locally adapted to aspirations of couples, faith in government, savings experience, educational plans for children, perceived value of children as farm labor, and other conditions. If children are regarded as an essential input in farm production then such a plan should include some substantial substitute for this lost labor. In fact, in some societies the marginal labor of extra children may be a much more important factor in decision making regarding family size than the long term potential of children as old age insurance. This should be especially true among younger couples who are more involved in working the land than in seeking a comfortable old age. It should be true also in subsistence level farming areas with poor communication, low educational opportunities and aspirations, and no nearby or accessible urban complexes.

The variables at work in decision making regarding family formation should be assessed before an incentive plan is framed for testing. Two instruments that could be of value in this assessment include Knowledge, Attitude and Practice (KAP) surveys with stress on economic variables, and psychologically based studies on the value of children to parents.⁵⁻⁶

In Taiwan a 1969 survey of men found that fully 62% expected to live with their children in their old age, and 57% expected their children to give them money from time to time regardless of the child's economic condition. These findings plus the strong bias toward male children led researchers to the question of how Taiwanese couples expect their children to succeed financially. This same survey revealed that although only 16% of men had attended high school or college, 67% expected one or more of their children to finish college; although only 29% had any idea of the cost of a college education, 76% said that it would be a "heavy financial burden." When asked whether saving money was important, 78% said that it was, and, among these, 40% spontaneously cited costs of education as the most important reason for saving.⁷

Taiwanese parents see the road to old age security to be through well-educated children; the marginal productivity of one more child is low; children are encouraged by parents to leave the farm because of urban opportunities; uncultivated acreage is low; farm equipment is available at costs farmers can afford; consumption aspirations are high; and good transportation and communications allow the amenities of city life to be shared by country people.

5. The Population Council, A Manual for Surveys of Fertility and Family Planning: Knowledge, Attitudes and Practice, New York, 1970 (especially appendices 3a. and 3b.)

6. James Fawcett, The Value of Children to Parents: A Cross-National Study of Motivations for Childbearing project proposal, mimeographed, East West Population Institute, January 1972.

7. Eva Mueller, Attitude Toward the Economics of Family Size and their Relation to Fertility, unpublished manuscript, November 1970.

In Taiwan, after analysis of the rural situation, it was decided to test a plan to give a guaranteed free savings plan for higher education to the children in small families, if the family would remain small. A pilot project to test this plan is underway now in one rural township and about two-thirds of eligible couples have joined. If they have no more than three children at the end of ten years they will get certificates for free high school and college education for their children. Those with only two children get twice as much as those with three.⁸

The experiment in Taiwan was adapted to the Chinese situation. The situation in Taiwan is unique, and the offer of a savings account is especially appealing in that rapidly changing society. Pilot projects and programs for other countries must be equally specific in design. For example, in one country or area it may be sufficient to give participating families an official framed certificate of guarantee to hang on their walls, which can be redeemed for educational benefits contingent on family size. In another area free medical and dental care may be highly valued and could be offered to families that remain small. In other areas free food, housing or farm implements as rewards for small family size might be the answer. On the other hand, a package of rewards to individuals, groups, and communities might yield the best and most long lasting results.⁹ Of course, wherever possible, attempts should be made to integrate various small family incentives into a package which is politically, morally, and medically sound as well as being effective.¹⁰

Even when the key variables in family formation decisions are known, many ideas for moving beyond family planning are not being tested because a means of testing has not been devised. A few testable ideas follow in the form of rough models which might be adaptable to local situations. After local modification, such ideas could be implemented on a pilot basis to provide old age security, free education, or other rewards for reduced fertility.

I. New School Construction Plan

One ~~family~~ would be guaranteed a new junior high school if it could reduce its general fertility rate below a specific level by a set date. A certificate of assurance from the Economics or Education Ministry should be sufficient to guarantee the program. However, where there is little faith in government promises, it might be necessary to purchase the building site and lay a cornerstone with as much fanfare as possible. This overt behavior should help convince skeptics of the sincerity of the offer. A six to ten year period should be permitted. The county government should be told that registration of all births is mandatory and that if fraud is detected the offer will be voided. It will then be in interest of the community to avoid cheating. The county could be permitted to designate which children will be eligible to use the school. They might then impose their own limits of either one child from each family, both children in two child families, one in three child families, or some other criteria.

8. O.D. Finnigan and T. H. Sun, "Planning, Starting and Operating an Educational Incentives Project," Studies in Family Planning, Vol. 3, No. 1, January 1972.
9. Lenni W. Kangas "Integrated Incentives for Fertility Control," Science, September 25, 1970, Vol. 169, pp. 1278-1283.
10. Bernard Berelson, "Beyond Family Planning," Studies in Family Planning, Vol. 1, No. 38, February 1969.

A local committee could establish criteria for immigrants, adoption, multiple births, death of children, change of marital status of parents, and other special cases.

The result of this program should be establishment of a relatively moderate birth rate for the community since any birth affects the whole county. Non-conforming couples would feel pressure to accept contraception or to move out. Conforming couples would be especially welcomed as new residents. The good of the community would be seen to coincide with the good of the couple. At the end of the period, fertility might go up, but the interim results would provide a test of the short term effect of this program on fertility and would place organizational and supervisory responsibility at the local level.

If this offer had a significant effect on fertility over a short (5-8 year) period, it could serve as a means of expanding secondary education, especially in poorer rural areas. Any county that passed a set of indigence criteria would be given a similar offer. The schools would be built where they were needed the most. If fertility began returning to previous levels after these junior high schools were constructed, the same offer might be made for construction and staffing of high schools or technical schools contingent on maintenance of fertility at the new low levels.

Programs such as this one and the one which follows should be discussed with international development banking organizations which could be requested to provide construction funds for technical and high schools, contingent on fertility reduction in the areas where these schools are to be built.

II. Certificate of Membership Plan

In some countries a bank book, or cash in hand, are the only motivators which are sufficiently credible to allow couples to join and stay in a program requiring reduced fertility. In other countries or areas the social support of the community in decision making is paramount, and a prominently displayed certificate of membership which could eventually be turned in for a reward might serve as impetus to stay in the program.

In one county, couples under 30 years old, who complied with government policy by keeping their families small, would be given officially stamped inscribed, and framed certificates of membership in the "small family education program." Each certificate would list the children in the family who are eligible for the educational benefits and would provide space for annual validation stamps. It would guarantee free education if properly validated for a certain number of years.

Each year the couple or woman would take the certificate to the local township office during a designated week. They would be asked to sign (or put their mark on) an affidavit certifying that their living children are as shown on the certificate. This affidavit would be checked against birth registration data (and verified by the village chief if felt to be necessary). Once the affidavit is verified the certificate would be updated with an annual validation stamp and returned to the family.

For couples with one or two children the certificate would be extremely elaborate and would provide for free high school education. For those with three children the certificate would be less elaborate and would provide for free junior high school education. A special certificate might be given to village leaders for excellent participation, providing for a community award if validated for ten consecutive years.

As in the Taiwan's educational savings program, there should be no reason for eligible couples to fail to register in this plan since they have no obligation and have "nothing to lose." This should be the central theme in recruitment. The program should be kept as public as possible and should emphasize the benefits to each child, thereby using public pressures, publicity, and parental concern to help assure continuation.

If the certificates are sufficiently elaborate, couples will wish to display them prominently in their houses. These certificates should become topics of conversation for visitors and family members. Once they are in place parents should be hesitant to allow the certificates to lapse, especially since the names of living children are on the certificate. Annual revalidation should be a public event during a limited period to enhance public support and to help minimize cheating. Fraud could be further discouraged by requiring all revalidation on one day, by conducting separate revalidation for each village, and by holding separate mass meetings for two child and three child families with invited speakers and special awards. Children should be invited also to add to the reinforcement value of these public ceremonies.

In order to finance the pilot plan, a trust fund or long term deposit earmarked for school construction and support should be arranged with a local bank with sufficient publicity to assure the community that it exists.

Extension of this plan on a nationwide basis could be effected by transferring savings from reduced primary school enrollment, plus some additional funds from education ministry coffers. It could be initiated in those areas which volunteer to join, rather than imposing the system on counties or areas. A simple application procedure for counties would enhance volunteerism and require some local consensus prior to implementation.

III. "Family Plan" Project

In one area couples could be told that if they devise a good "family plan" they will receive help in meeting the plan. Initially, successful contraceptors could be offered membership in the scheme when they come in for a regular check-up. This should start the scheme off well with a group that is already motivated.

Each couple who decided to join might sit down with a staff member and work out a "family plan" on a flannel board. Previous and planned births, and education desired or attained by the children, should be displayed in chronological order using cut-out figures to represent vital and other events. Types of contraceptives used or planned to be used by parents might also be depicted by cut-out models. "Model" plans could stress two and three child families, or stopping at the present level no matter how high. Couples

would be urged to follow one of the models. All couples who make up a two child plan could be guaranteed that if they achieve their plan they would receive free tuition, school supplies, and transportation money, medical and/or dental care, contraceptive assistance, old age support, or other substantial rewards. These rewards would be reduced somewhat for those who plan a three child family, or those who already have a large family and plan to have no more children. Individual plans could be tailored to family needs, proximity to service points, and each family's goals, allowing couples to choose specific rewards within general financial limits.

The names of the parents and living children would be put on the flannel board. This display would then be photographed and an enlarged photo filed in the couple's folder. Annually the couple should return to discuss with a worker the present status of their family plan. If the plan is being met, a certification would be made on the back of their family plan photo and on the back of a copy kept by the couple. As long as they stick to their plan the program should help them as promised to meet their plan.

This program would focus on the family's overall welfare, rather than on contraceptive acceptance per se. It would be open to all families rather than only to those with few children. It would help bring families into the middle class in terms of economics, services, family size, and time perspective.

Couples would receive contraceptive assistance, medical care, educational assistance, delivery assistance, and/or old age support if they devised and followed a reasonable plan. This program would be easiest to test in an area where medical care and educational facilities are readily available but where fertility remains high. A deposit in a bank or the assurance of the local education and health authorities should be sufficient to guarantee this project. Couples who follow their plan would begin almost immediately to receive benefits which should reinforce continuation and new recruitment.

Extension of such a program would follow, and be closely tied to, extension of medical and educational facilities in additional areas. The cost of such a program could be absorbed into normal costs of extending public facilities and increases in social welfare. Communities and leaders could be asked if they wish to join such an extended plan. If they agree to join, their community health and educational facilities could begin to be strengthened very soon thereafter. This sort of program would also require training and strengthening of existing and new staff. In free enterprise countries this program might have special appeal in that the plan could be handled as an insurance measure with deposits made to existing schools or hospitals for participating families. It would then operate like a group medical insurance plan, but with deposits coming from the government. The individualized nature of such a plan might require large inputs in terms of case work personnel; however the end results might include a reinforcement of planned behavior and a real change in time perspective which should, in turn, lead to internalization of the small family ideal.

IV. Farm Equipment Plan

This plan is designed specifically for farming areas where educational levels and aspirations are low, mechanization is minimal, communications and transportation are rudimentary, outmigration is not high, children are valued as a source of farm labor, and monetary incentive plans are ruled out for various reasons (lack of local currency, mistrust of banks, low future orientation of population).

The capital input necessary to test this plan would be about 30 to 50 gasoline powered tractor/tillers, costing about US\$1,000 to US\$1,500 apiece, ranging in power from 4 H.P. to 15 H.P. These tractor/tillers should be locally repairable, simple to operate, and durable. This sort of program would probably work best with village rice farming settlements, such as those in South Asia. Additional input would include the cost of baseline survey of 300 to 500 couples, and some minor administrative expenses.

This project should start with a brief KAP type survey of married men and women with two or fewer children in one township including attitudinal scales - especially regarding ownership, consumption, education and family size aspirations. The survey should positively identify all couples with one or two children in this township. These couples should be listed according to residence in ten-couple groups. Isolated couples would be assigned to their nearest group. If natural communities of about 10 couples could be identified, these should be used in preference to arranged groups.

For example, the project might give to each group of 10 or so couples a mechanical plow as compensation for having fewer children than they consider ideal. The group would be told that the plow will be loaned to them free for seven years, and that if the average number of children in the group exceeds three then the plow will be reclaimed. If at the end of seven years the couples average three or fewer children the plow will be theirs to keep. If the couples average 2.5 children or fewer then a new deluxe model plow will be made available.

In promoting this program the following points could be stressed:

1. The plows are provided to compensate for the lost labor of additional children. They are social welfare directed at those who need it the most, the poorest families in terms of numbers of children.
2. Families in this program can save money by selling or renting out their draft animals which will no longer be needed; they can save money and crop land which went to purchase and raise feed for draft animals; they can work more quickly and thereby cultivate marginal land and plant more crops in one year.
3. Participating families will not have to make the painful decision to either break up their land between several children or send some of their children away to the city.
4. Families will be better able to provide for each child, maternal health will be better, they will have more money to save for purchase of modern items.

If this plan alone were not considered to be sufficient to recruit and hold young farming couples it might be tied to a small social security program providing some funds for old age security. Alternatively, couples might be offered free seed, or fertilizer, or pesticides for each year after the seventh year that they have no more than three children. Finally, it might be necessary to add a community reward such as a grain storage shed, or a pump for the town well, as inducement to gain the support of leaders.

Of course other farm improvements could be substituted for a mechanical plow. In fact in some areas it might be better to offer a draft animal to each small family as compensation for having few children. The local situation might call for promise of village electrification or a mechanical water pump or some other item of value needed locally. Permanent emplacements such as tube wells or structures should be avoided since they are impossible to reclaim.

The program is felt to have several built in checks against cheating. The public nature and the cooperative aspects of this offer should provide community pressure for continuation. Since potential non-conformists would cause the group to suffer, they will be pressured by other members to keep their family size small. By including a community incentive for overall participation, even more pressure should be engendered. If new couples could enter the plan or new groups could join as others drop out, then the outsiders might be inclined to report violations by insiders, and to keep their own family size small in order to be eligible.

This sort of program should be applied in a rural area with little out-migration and few alternative means of employment. It could be expanded gradually to needy or isolated areas as resources become available. It might operate well with externally provided commodity aid.

V. Redemption Center Plan

In some countries with well developed advertising industries, commercial offers and contests are already popular. In one large municipal center or a farming area a store front could be rented near the market place. The store window could be filled with durable consumer goods which are also beneficial in the development process such as kerosene or propane stoves, a radio, building materials or tools, water pipe or electrical wire and fittings, farm implements, a picture of a power tiller, bags of cement and fertilizer, or other items considered of value locally. Sample certificates for free education and pension "bonds" might also be displayed. Prominently displayed signs and colorful brochures might say "If you would like to obtain some of these items for free, just visit your local family planning clinic."

At surrounding clinics any woman who enrolls in this plan would be given a deposit booklet with an initial enrollment deposit expressed in units. Quarterly, she should return for contraceptive supplies or for a check-up. If she were not pregnant at the quarterly check-up she would continue to receive deposits which would increase in amount for the first five years of enrollment. She also could get some foodstuff each quarter for the first five years, such as cooking oil or milk powder. If she had additional children while enrolled in the program she might forfeit some deposits in her booklet; but she could re-enter after being out of the plan for one year.

The only pregnancy test needed in most cases would be a visual check or in a few cases a pelvic examination. The objective would be to detect late pregnancies, not early ones. In order to verify the woman's identity when she reports to the clinic, a thumbprint might be entered on her clinic record each quarter. A woman could quit the plan at any time, provided she were not pregnant when she quit. She then would give her enrollment booklet to the redemption center and request her prize. It should be available at the following quarterly payment period.

This program might be best suited to a consumption-oriented society. It could help to foster local services and industries such as construction companies, fuel product distributors, electrical cooperatives, and schools. The food products and some of the "prizes" claimed by enrollees could come from external aid. Community awards could be offered to villages with a certain percentage of women enrolled for a set period. These community prizes should also be of value in the development process such as pumps, generators, cement, piping or other common property. In order to foster delayed marriage, extra units could be given at enrollment for each year after reaching the age of legal consent that a woman delayed her first child.

Deposits in the booklet could be expressed in millions of units to take advantage of the psychological impact of large numbers. They should increase geometrically in the first several years to emphasize continuation. The largest prizes should be sufficiently valued to persuade couples to stay in as long as possible rather than to quit early in order to obtain some intermediate award. Trading stamp systems in the western world should be investigated for additional gimmicks and ideas.

Of course these programs and their built in controls should be continually monitored to insure that disputes and quarrels over eligibility, and the possibility of fraud do not obscure the purpose of the plan. In the long run cheating may not be overly important if the major goals of the program are: (1) to appreciably reduce fertility, and (2) to lend validity to the small family concept. Controls against cheating should be established; however, they will never be fully effective. No program should be stopped simply because a small amount of cheating occurs, and the possibility that cheating may occur should never prevent a pilot program from being launched.

Political, Administrative, Economic and Ethical Constraints to Implementation

In the past there has been strong feeling expressed by some scholars that programs such as those described above were not feasible either for administrative, political or economic reasons, or because they were lumped together with disincentive proposals as coercive or morally unacceptable.¹¹⁻¹² Apparently, the feasibility of these proposals has increased markedly in recent years, due, it seems, to changes in the outlook of population experts in the more developed regions, not to any pervasive changes in the less developed regions.

11. Ibid. p. 11

12. Frank W. Notestein, "Zero Population Growth" Population Index, Vol. 36, No. 4, October-December 1970.

Any lack of political viability of these positive incentive programs would be hard to detect in the less developed world, especially at the lowest political levels. When asked why their people do not practice family planning until after the Nth child, local leaders cite the same problems which sociologists struggle to confirm: children are a source of labor, children are needed for old age security, many children are needed because some may die, etc. When these same unsophisticated leaders are asked how to accelerate adoption of family planning methods they say "first give us old age security," or "first raise the standard of farm life and help us mechanize," or "prove that our children will not die." No surveys have been performed to confirm these responses, however, the author has led small group discussions on the educational savings program in Taiwan for over 700 administrators, educators, health personnel, and local leaders from over a dozen less developed countries, and has heard objections that such plans are not politically viable or are coercive from only a handful of persons, primarily westerners.

The best measure the author has to confirm this political viability comes from Taiwan where the local county and township mayors involved in Taiwan's educational savings project are counting on this positive incentive program to help them win reelection. The sophisticated western observer may see these programs as "bribes," or as a form of government or international coercion; local political leaders see them as a good way to accelerate development and to get some material rewards for their constituents, especially for the very poor. It is suggested that the political viability of these schemes is high, if presented from a positive viewpoint. It is also contended that their coercive nature can be seen best from the security of the more developed world, where naturally occurring coercions (hunger, sickness, desire for unattainable goods or services) are kept to a minimum.

In a 1971 occasional paper of the Population Council, the Director of the Institute of Society, Ethics, and the Life Sciences, Daniel Callahan, attempted to define ethical issues relating to the limits of government activity in the regulation of human fertility. He answered the following question, among others: "Would it be right for governments to develop 'positive' incentive programs, designed to provide people with money or goods in return for regulation of their fertility behavior?" Dr. Callahan agreed that "In principle, incentive schemes are non-coercive, i.e. people are not forced to take advantage of the incentive. Instead, the point of an incentive is to give them a choice they did not previously have."¹³

Dr. Callahan points out that, since the poor have less choice than the rich with regard to acceptance or rejection of the incentive, such schemes can be covertly coercive. This coercion, however, may be mitigated by: comparison to more overtly coercive alternatives; insuring that incentive programs offer substantial benefits to fill actual needs; designing incentives so that the recipients have a real choice in the matter without being put in "psychologically difficult straits."¹⁴

13. Daniel Callahan, Ethics and Population Limitation, Occasional Paper of the Population Council, 1971, p. 27.

14. Ibid p.28

In suggesting some formal criteria for establishing guidelines for governmental action, Dr. Callahan first states that governments have an obligation to establish effective voluntary family planning programs. If voluntary methods have been adequately and fairly tried and yet nonetheless are failing or will fail to "solve" the country's population problem, "then governments have the right, as the next step, to introduce programs which go 'beyond family planning'".

"In choosing among possible programs which go 'beyond family planning', governments have an obligation to first try those which, comparatively, most respect freedom of choice (i.e., are the least coercive). For instance, they should try 'positive' incentive programs and manipulation of social structures before resorting to 'negative' incentive programs and involuntary fertility controls."¹⁵

The "Human Rights Aspects of Family Planning" resolution of the United Nations International Conference on Human Rights held in Tehran in May 1968 states that "...couples have a basic human right to decide freely and responsibly on the number and spacing of their children and a right to adequate education and information in this respect."

In an analysis of the legal capacity of the U.N. in the field of population Professor Daniel Partan points out that "at base a right to determine freely and responsibly the number and spacing of children would seem to embrace both a right to purchase and touse all medically approved forms of contraception, and a right to be free of coercive anti-natalist policies involving compulsory contraception, sterilization, or abortion." Professor Partan further contends that "...governments appear to retain freedom of choice concerning such subjects as marriage and divorce laws, child care and benefit programs, and tax and income policies including social security and inheritance policies. A substantial range of government actions that may in fact influence family planning choices, and hence fertility and population growth, are likely to be regarded as non-coercive and hence not as violative of the free choice in family planning reserved to individuals as a human right."¹⁶

Professor Luke T. Lee goes a step further in defining the implications of the human rights aspects of the Teheran proclamation. "The question may be raised as to whether the language of the Teheran Proclamation would allow couples to have as many children as they want (or do not want). The Proclamation specifically provides that family planning must be made not only "freely," but also "responsibly." Involved in responsible parenthood is the balancing of the "individual" with the "collective" right -- i.e., from the right of children to that of the society at large. Just as the "individual" right to freedom of speech must take into account the "collective" right whether in time of peace (e.g., libel, defamation, nuisance, obscenity) or during war or emergency (e.g., treason, sedition, censorship), so must the "individual" right of family planning be harmonized with the "collective" right, particularly under certain circumstances, as for example, where the resources, both actual and potential, of a country dictate the limitation of the size of its population in the interest of all.

15. Ibid, p. 34

16. Daniel G. Partan, The Legal Capacity of the United Nations System in the Field of Population, to be published as Law and Population Book Series No. 2 (1972), unpublished manuscript, p. 23.

The question of when exactly does the "individual" right give way to the "collective" is always difficult to answer --- even in the case of freedom of speech notwithstanding its century-old development and refinement. However, it is equally clear that inability to define with exactitude the relationship between the two rights does not negate their existence -- in freedom of speech as in family planning."¹⁷

Dr. Dewey Lipe has analyzed three issues which, from the point of view of the psychologist, are of concern in developing and testing incentive programs. He has indicated that in overcoming community sensitivity, field experimenters must be "cognizant of and make every effort to elicit public support" in order that no segment of the community be polarized against the research project. He has stated that the ethical issue necessitates a careful questioning of the purpose and methods of research, involvement of responsible local personnel in planning and carrying out the research, and "general agreement that the public interest is best served by finding the means of influencing parents to have smaller families and by implementing those means." He has pointed out that there is substantial efficiency in an incentive program which treats excessive fertility as a behavioral, rather than as an attitudinal problem. Behavior is open to direct manipulation through contingencies of reinforcement, whereas "because of the supposed tenacity of attitudes, the only means for changing them is considered to be 'the long, hard road of education and public persuasion'"¹⁸.

It is encouraging to see that incentive programs are being widely discussed by professionals and by journals in a variety of fields including economics, sociology, psychology, demography, law and ethics. It is equally heartening to see that such penetrating investigations seem to lead to the same general conclusions regarding the ethical acceptability of testing and implementing such plans.

In order to help lay to rest the recurring bugbear of coercion, I would ask readers to place themselves in the position of an impoverished agricultural or industrial worker in a less developed land. To this man free education and medical care are not inalienable rights, they are not yet even privileges, they are in the realm of impossible dreams. If a local leader comes to the community and tells this man that he can get free education and medical care for his children, or old age security for himself, if only he will keep his family size small, it is not likely that the leader will be scorned for being punitive or coercive. Since his proposal allows the dreams of the peasant to come true, it is much more likely that he will gain political capital from such a program, especially since he will have removed the coercive constraints caused by lack of medical care, education, and old age security.

It is true that in the more developed world the removal of rights might be an unduly coercive way to implement population policy. It is equally true that in subsistence situations the extension of privileges to families, contingent on adoption of a small family norm, is not coercive either to these families, or from the local political viewpoint.

17. Luke T. Lee, "Human Rights and Population," in Virginia Journal of International Law, Summer 1972, to be published.

18. Dewey Lipe, Incentives, Fertility Control, and Research, "American Psychologist," Vol. 26, No. 7, July 1971.

The administrative feasibility of these programs has been felt to be low due to the lack of well-developed administrative infrastructures in less developed countries. It has been argued that in a country that cannot now collect its vital statistics in a reliable manner, no complicated incentive system could be made to work. Yet in these same countries commercial products such as soft drinks and soap are distributed and sold at the lowest level through elaborate and efficient sales networks, schools are found wherever the people can afford to construct them, and contraceptive delivery systems are extending to the village level.

In reviewing incentive literature I have not found any proposals that contend that the census bureau or the department of vital registration should be the implementing agent. On the other hand, many emphasize using the most efficient existing networks such as the educational system, private industry, rural banks, or the local government. Where such channels are not available it is entirely possible that a new network could be designed and supported by the program. However, this will probably not be necessary in most cases because implementation of most incentive schemes presupposes the ready availability of conventional family planning services; and an efficient contraceptive delivery system could probably be expanded to include an incentive program. The administrative feasibility of these programs seems therefore to be only a bit less than that of conventional family planning, and seems also to depend in large part on the dedication and support of the government for this activity.

Finally, the economic capability of less developed regions to support these programs has been brought into question. Again this seems to the author to be a parochial view from the western bias, and not the best economics at that. From the viewpoint of an international banking agency such as World Bank (IBRD), it seems more likely that a long-term loan to build 100 new technical high schools would be repaid if the recipient country were intending to put these schools in those areas which showed the greatest decline in fertility over a five year period.

Major incentives of the transfer payment kind are also good economics since funds do not leave the government system, but merely pass through the hands of the successful client in the form of an education bond or some such long-term guarantee. Even where cash is eventually paid in the form of a pension for successful contraceptors, the delay between enrollment and final payment will allow for accumulation of the necessary funds. The fact that payments are usually made only if births are averted should aid the implementing government in meeting this budget item. Although discounting for inflation and opportunity costing may be difficult, they should not prove to be insurmountable barriers.

Competent economists have argued that developing countries and their mentors cannot afford not to implement such programs. As an example the cost of one plan to reduce the birth rate in India by perhaps one-third would be about \$260,000,000 (per annum), or \$35-\$40 per prevented birth and the bulk of these funds would only be spent if births were prevented.¹⁹ The cost to

19. Bernard Berelson, Op. Cit. p. 7

bring about approximately the same fertility reduction in India through implementation of a nationwide maternal and child health care system would be over \$350,000,000 per year for 10 years and these funds would have to be expended whether or not any fertility decline followed.

In other words, it makes more economic sense to invest money in a program that only pays people for having successfully participated, rather than creating an expensive medical service delivery program with no guarantee that a decline in the birth rate will follow.

In a very few years we will be able to see the effect on fertility of the several major incentive programs that are now in the field. Since we do know however that most of these programs are designed to expend funds only in cases where births are prevented we can assume that the effectiveness of these programs is directly related to their feasibility and acceptability. The table presented below is my own updating of a table presented by Bernard Berelson in his landmark article "Beyond Family Planning."

Table 1. Suggested Re-Appraisal of Positive Incentive Programs *

	Scientific Readiness	Political Viability	Administrative Feasibility	Economic Capability	Ethical Acceptability	Presumed Effectiveness
Incentive Programs (Berelson)	High	Moderately low	Low	Low to moderate	Low to high	Uncertain
Transfer Payment Incentive Programs (Finnigan)	High	Moderately high locally moderate internationally	Moderate to high (about same as extension of voluntary f.p. services)	Moderately high (since few funds expended unless b.r. declines)	High	Depends roughly on amount of money actually expended

* For the full table, readers are referred to Berelson "Beyond Family Planning." Studies in Family Planning, Vol. 1, No. 38, p. 11, February 1969.

20. Howard C. Taylor, Bernard Berelson, "Comprehensive Family Planning Based on Maternal/Child Health Services: A Feasibility Study for a World Program," Studies in Family Planning, Vol. 2, No. 2, February 1971.

SUMMARY AND CONCLUSIONS

Over the past decade, clinical family planning services have been greatly extended in the less developed world; yet no substantial changes have been made in the numbers of children that couples say that they wish to have. It is time now to begin to test positive incentive plans designed to give substantial rewards to couples who actively participate in these programs, and who hold their family size down to demographically acceptable levels.

Among major constraints preventing these plans from being tested was the optimistic assumption that such programs would not be needed once contraception was made freely available. In those countries with the most active family planning programs, however, administrators are now beginning to search for some means of continuing the decline in fertility once all unwanted births are effectively prevented.

Another constraint which has been operating is the assumption that these programs were not viable or feasible on political, administrative, economic or ethical grounds. This situation seems to have arisen due to misinterpretation of the positive nature of these incentive schemes, and misunderstanding of the sentiments of leaders and the masses in the less developed world. Re-appraisal of these factors leads the author to the conclusion that large scale tests and implementation are indeed at least moderately feasible on all counts.

The final constraint has been a lack of sound original incentive ideas tailored to the local situation and based on studied appraisal of the economic and administrative capabilities of each country. The ideas presented in this paper are intended to illustrate the range of possibilities; but they are no substitute for an imaginative re-appraisal within a specific cultural context.

It is hoped that the international agencies, national governments and private organizations will begin to assert an interest in financing pilot programs such as those outlined above. Many eminent scientists have questioned whether the well-intentioned, well-financed, and as yet unproven attack on high fertility through extension of availability of contraceptive services will succeed in substantially reducing birth rates in areas where economic development is not occurring at a rapid pace. They also question whether these reductions in birth rates will in fact be sufficient to stem the population explosion.²¹⁻²² As long as such doubt exists about the effectiveness of present programs, it seems only logical that we should be actively exploring alternatives to conventional contraceptive delivery that go beyond merely trying to improve maternal and child health services.

21. Kingsley Davis "Population Policy: Will Current Programs Succeed?" Science, 158 pp. 730-739, 1967.

22. Harry M. Roulet "Family Planning and Population Control in Developing Countries" Demography, Vol. 7, No. 2, pp. 211-234, 1970.

Other references which are helpful as background material:

Carolina Population Center Approaches to the Human Fertility Problem, Chapel Hill, October, 1968.

Everett M. Rogers A Field Study of Family Planning Incentives and Field Staff in Indonesia, Djakarta, September, 1971.

Julian L. Simon "The Role of Bonuses and Persuasive Propaganda in the Reduction of Birth Rates" Economic Development and Cultural Change, Vol. 16, No. 3, April, 1968.

J. Timothy Sprehe Incentives in Family Planning Programs: Time for a New Look, fourth draft, mimeographed, October, 1971.

Harvard Law Review Legal Analysis and Population Control: The Problem of Coercion, Vol. 84, No. 8, June, 1971.

PART V POSTSCRIPT

Lest readers think that the editor sees incentive programs as a panacea for the ills of the world allow me to enter a disclaimer. We should expect many "side effects," especially if incentives involve major changes in legislation, government policy, and delivery of social services or benefits. Some of these problems may be anticipated and their effects mitigated through sound planning. Others will remain unforeseen until the eleventh hour, at which point adjustments will have to be made in plans and programs.

At any rate, other means of "breaking the big family barrier" exist; and some have been spelled out by Berelson (Annotation 4). Many of these deserve controlled field experimentation either in conjunction with one another or separately.

Aside from the pros and cons of incentive systems presented in the papers included in this volume, the following reactions to existing and proposed major incentive programs should be considered in future tests or field programs. One observation is that these incentives may have psychological ramifications the extent of which is as yet unknown. A second is that these programs are too impersonal and mechanistic in their approach. A third is that the normal remedial approach to social welfare is upset in that those families who need help the least (small ones) will receive the most aid. A fourth is that the mechanism for achieving behavioral change does not also elicit a lasting attitudinal change. Fifthly, the fact that these plans are "outside inventions" is of some concern, as is the fact that since they are most likely to be popular among the poorer, least literate, and least modern, they may reverse the normal innovative processes. A sixth point is that there is some concern over the cost of these programs, although it is generally agreed that they can be structured to be not only relatively inexpensive, but of great long range economic advantage. A further economic consideration is the fact that these programs will act as mechanisms for income redistribution and are therefore potent tools for narrowing the educational, income, and savings gaps between the very rich and the very poor.

These considerations and others seem to reinforce the plea of many authors for a multidisciplinary approach to incentive design and testing. Social workers and social psychiatrists could lessen the psychological strain on individuals and families by helping to design more humanized and personalized programs. They could also help to weigh the differential utility of these plans vis-a-vis the several traditional roles of social welfare: remedial, preventive, and developmental. Rural sociologists and anthropologists could help design the incentive package to be culturally correct and large enough to (1) elicit desired behavior and (2) achieve true attitudinal change. Local committees could help design and test programs

and could thereby be made aware of the potential of such programs to help change the social order. Finally, economists could become involved on the macro-level to assess cost-effectiveness, and on the micro level to assure that whatever is offered as an incentive is sufficient not only to elicit the desired behavior but to substantially increase the economic well-being of the masses.

"Litterbags and Dimes for Litterbugs,"

Kenneth Goodall, Psychology Today
December 1971

In case there is still some doubt among readers of this volume as to the potential effect of incentives to change behavior this item is included as a closing statement made with tongue only partially in cheek.

by Kenneth Goodall

Litterbags and Dimes For Litterbugs

A litterbug is a litterbug is a litterbug—except when he gets a reward for not littering. Traditional approaches to the problem—antilitter laws, ubiquity of trash cans, antilitter propaganda—just don't seem to work. But an operant-conditioning approach does, according to a series of studies by sociologist Robert L. Burgess, forestry professor John C. Hendee, and Roger N. Clark, a graduate student in both sociology and forestry, all of the University of Washington in Seattle.

The researchers conducted one indoor study, at Saturday children's matinees in two Seattle neighborhood movie houses, and six outdoor studies at campgrounds, including Mt. Rainier National Park.

In the indoor study, their first step was to weigh all the trash found in the theaters after the shows and to determine the percentage that patrons had deposited in trash cans—an average of 19 percent at theater one and 16 percent at theater two. Then, on succeeding Saturdays, they tried various experiments to discourage littering:

1) They doubled the number of trash cans usually present in theater two. This tactic had no effect.

2) Before the regular movie at theater two, they showed an antilitter cartoon, Walt Disney's *Litterbug*. Trash deposited rose by only five percent.

3) They handed out litterbags to all persons entering theater one and said: "This is for you to use while you are in the theater." Trash deposited rose from 19 percent to 31 percent.

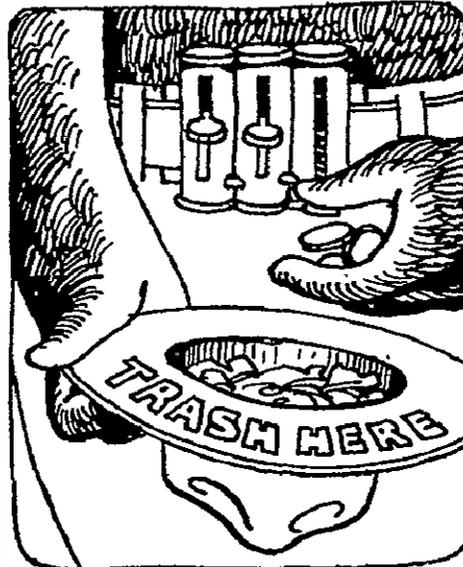
4) They handed out litterbags at theater one and made a special announcement: "Put your trash into the litterbags and put the bag into one of the trash cans in the lobby before

entering the theater." Trash deposited rose to 57 percent.

5) They handed out litterbags at theater one and offered a reward—10 cents—for each bag of litter turned in after the show. This behavior-modification technique increased the amount of trash in hand to a whopping 94 percent.

6) They used a similar behavior-mod technique at theater two, offering patrons free tickets to a special children's movie. Trash collected: 95 percent.

The first three approaches, of course, are in common use. The Na-



tional Park Service offers litterbags and literature to visitors; business firms and entire cities have tried to cope by increasing the number of trash cans; and numerous campaigns on television, in newspapers and on billboards have exhorted us not to litter. The theater study, reported recently in the *Journal of Applied Behavior Analysis*, indicates that such methods have little effect and, as the Seattle researchers say, "may scarcely be worth the effort and cost."

The outdoor studies, completed during the summer, but not yet published, provided further support, Burgess tells me. Giving token incentives to campground visitors (mainly children) resulted in about a 10-fold increase in trash deposited at a 15th

of the normal cost of trash collection, he says.

The studies were paid for by the Recreation Research Project of the U.S. Forest Service, which may mean that visitors to national forests will someday be lining up, litterbag in hand, to get their reinforcements from Smokey the Bear.