1-33063
748

TRANSCRIPT OF PROCEEDINGS

CONFERENCE ON POPULATION DYNAMICS

FOR STAFF OF AGENCY FOR INTERNATIONAL DEVELOPMENT

- - - - - -

Date: June 7, 1965

Place: Baltimore, Maryland

Alderson Reporting Company, Inc.

300 Seventh St., S. W. Washington, D. C.

NA 8-2345

CONFERENCE ON POPULATION DYNAMICS
FOR STAFF OF AGENCY FOR INTERNATIONAL DEVELOPMENT

Johns Hopkins School of Hygiene
and Public Health,
615 North Wolfe Street,
Baltimore, Maryland.

Monday, June 7, 1965

CONFERENCE CO-CHAIRMEN:

DR. LEONA BAUMGARTNER,
Agency for International Development

DEAN ERNEST L. STEBBINS,
School of Hygiene and Public Health,
Johns Hopkins University

PRESENTATIONS:

Irene Taeuber
Philip Lee
Robert Smith
Mark Perlman
Donald Bogue
Sheldon Segal
Harry Levin

- - -

Property of AID/POP Reference Library

P R O C E E D I N G S

DR. STEBBINS: I want to call the meeting together.

We know there are a good many that are still on the way. We have a full program this morning, that we would like to start. My role is to sit here with Leona, which is a great pleasure, and act like a co-chairman, but more importantly, to welcome you here to Baltimore, and to the School of Public Health of the Johns Hopkins University.

I would have liked to have had Dr. Eisenhower here to welcome you, but this being commencement time there seemed to be a few things he had to do about getting the students graduated tomorrow morning. He sent his regards and asked me to express his wishes for a successful conference here today.

I notice that they have changed the title on me. I was going to welcome you on me. I was going to welcome you to conference related to Economic Development and Population Problems, but I see it is a conference on Population Dynamics for Staff of Agency for International Development.

I guess it does not make any difference, because like Leona, whenever you ask her to talk about anything, she says, "Yes, I will be glad to, but you know what I am going to talk about."

So I will make the very brief comments that I planned anyway, about economic development and the population problem.

You might ask why a school of public health is the

more importantly, to welcome you here
to Baltimore, and to the School of Public Health of the Johns

place in which such a conference is being held. I think there are very good reasons for this. Public health depends upon economic development, which you are all interested in, in the countries in which you work.

We in public health like to take a little credit sometime for decreasing the death rate through public health measures, but I do not think that any sane public health worker would deny that economic developments and improved standards of living have had a major role in reducing the great killers that we have dealt with in the past, tuberculosis being a wonderful example.

I think if you go and analyze the impact of the public health effort as related to economic development improvement in nutrition and housing and general living conditions, there would be no doubt but what the latter were by far of the greater importance.

Another reason why it might be held in a school of public health is, we in public health have been accused of producing all of this trouble; that by our progress in the reduction of the death rates--paying no attention to the birth rates--naturally there has been a tremendous increase in population, with all of the problems that this increase entails.

The third possibility of an excuse for holding it here is that public health is medically oriented, and most of the present methods of fertility control do have some medical significance.

I don't think that any need to belabor the point that the population problem is a serious world problem. I think we will go on that assumption and the purpose of this conference, as I understand it, is to bring together a group of people who are in various strategic positions to do something about it, and we hope that as a result of the discussions here that new ideas and new approaches may be brought to your attention.

We have a number of housekeeping arrangements that will have to be worked out and I am going to ask Dr. Paul Harper, Director of Population Dynamics Division, who has taken the spade work for our side on the development of the program, to make a few announcements before we go on with the program.

DR. HARPER: At this time, I will only say a very few words. We are very happy to have you here. The press is not invited and there has been no publicity, and for the moment I will turn back to Dr. Stebbins.

DR. STEBBINS: At this point, I would like to turn the meeting over to my colleague, Leona Baumgartner, who needs no introduction to this group. I could say many, many things about her distinguished past, but in the interest of saving time, and not embarrassing here, I now turn the meeting over to Leona.

DR. BAUMGARTNER: I have just talked to Mr. David Bell who hoped he would be here for a few minutes. He said he hoped everybody would roll up their sleeves and get at this complexing serious problem for the developing countries. AID is

proud of the fact that it has widened its perimeter of activity in this field, and the question of how to do this most effectively and most wisely is obviously one of the objectives of this conference, and he sends you both greetings and blessings.

I think what comes out of a conference like this is what people put into it and I think, as Stebbie and I talked last night and this morning, we think, although there seems to be a lot of people on the righthand side of the column here, in terms of short presentations--we hope--I think the real questions that are going to come up are going to be of greater interest and they will be the questions that are raised from the field in terms of "How do you do what?" and "What are the problems and what can be done?".

This ought to be thought of as a working seminar and not as anything else at all.

I think with that, probably the best thing I could do would be to start and introduce the first people that will talk about the dilemma of development, the objective of this conference.

The first speaker I will introduce will be Dr. Irene Taeuber. She has more degrees than she would want me to talk about. She is a consultant to more people--the National Research Council and AID--just to mention a couple. Her basic job is at Princeton, although I am not quite sure about that, and she is respected not only in our country, but in Asia, and, as I dis-

covered in my recent trip to Africa and South America, she is someone who really knows what population dynamics are all about.

Dr. Taeuber.

DR. TAEUBER: Since there are many things that I want to say briefly, I have written out a few pages. We shall have our statements very nicely coordinated, I am sure, because I have just passed copies to my fellow members of the Panel. I shall read parts of this. If you are interested in the full draft, it can be reproduced. I shall give you very limited facts. I think it is necessary to give you some fact and some projection in capsule form. The source is the United Nations recent publication for the World Population Conference being held in Belgrade this fall. In those United Nations figures, world population that was less than 2 billion in 1920 reached 3 billion in 1960. If recent trends should continue, world population would be 4.5 billion in 1980, 7.4 billin in the year 2,000.

This, however, is the world population and, unbelievable as it may seem to Americans who read their papers, watch TV, or even attend lectures, all the world is not plagued by population growth. Moreover, processes and problems of growth in such developed countries as the United States, Canada, the USSR, Australia and New Zealand, differ sharply from those in the non-developed areas of poverty, illiteracy, ill health, and economic stagnation or precarious change.

In the estimates of the United Nations, the population of the less developed regions of the world, Asia, Africa, Latin America, increased from 1-1/4 billion in 1920 to 1-1/2 billion in 1940 and more than 2 billion in 1960. Here growth was quickening as the swiftly declining death rates of the postwar years existed alongside the generally-unchanging or slowly-moving birth rates. If present trends should continue--that is, if death rates should continue to decline while birth rates remain essentially unchanged--the population of these presently less-developed areas would increase from the 2 billion in 1960 to almost 3-1/2 billion in 1980, and then move onward to more than 6 billion in 2000.

Before I begin my escape from the architects of demographic doom, I should add that these estimates of the future population of great regions in which all else changes except birth rates, are actually far below the probable populations of the future on the given assumptions of declining mortality and stable fertility. The major reason is an underestimation of the population dynamics and the population potential of the Peoples Republic of China. Given continuity in trends from 1957 onward, China's population would now number something like 750 million, and it would exceed one billion by 1980.

Projections of what populations would be if the trends of the past and the present continued are based on hypotheses quite contrary to any realistic assessment of the probabilities of the future. The United Nations Secretariat recognized this and so

constructed a set of hypothetical projections more appropriate to a dynamic age.

It was assumed that economic and social development would be rapid, and that population programs would become more widespread and more effective. Hence, it was assumed that birth rates were now or would soon begin to decline and would be halved within 30 years. If those halvings should occur along with continually-declining death rates--and declining birth and death rates are necessarily associated--then by the end of this century, in the year 2000, death rates in the countries of Latin America and Asia would be below 10 per 1000 total population, while birth rates would be generally below 30.

Rates of natural increase would remain substantial--almost 2.0 per cent per year in South Asia and almost 2.5 per cent per year in Latin America. The details for India and Pakistan on assumptions of continuity of trends in death rates along with a halving of birth rates in 30 years will be presented to you in the session on the Indo-Pakistan subcontinent.

These projections along with the statistics and studies of population dynamics and their interrelations in the world's diverse countries and regions support the following conclusions and suggestive observations:

(1) Population growth as it is now occurring cannot continue indefinitely; it is highly unlikely that it continues to the end of the century in areas

densely settled, technically backward, and plagued by illiteracy, ill-health, lethargic advances in contact and communication, and persistent traditionalism in family and village life.

(2) Population growth could be terminated swiftly by the sharply-rising death rates of calamity or the slowly-rising death rates of economic failure. This is the possibility that impels peoples, countries, and associations of countries toward strengthened programs for economic development and social advance and toward the integration of programs to reduce birth rates in the development effort.

(3) Declining death rates have been, are now, and will remain necessary preconditions, associated processes, and consequences of political stability and economic advance. The drives of independent governments, and aspirations of awakening peoples, the advancing technologies of disease prevention and death limitation, and the organization of effective health services at local, national, and international levels suggest that the reduction of death rates to truly low levels is an essential component in development. There can be no either/or in declining death and birth rates as aspects of the development process.

(4) The process of development itself, and par-

ticularly the increasing numbers of children and youth that are the consequences of earlier reductions of death rates, are powerful forces to break the traditional social values of the villages, to make family size a widely-discussed and critical question among the rural people themselves, and hence to create a climate favorable to the acceptance of feasible and effective means of family-planning as these are offered locally and personally.

Phrased otherwise, it is not safe to assume that lethargic peasant societies remain lethargic in their responses to the hazards of their own reproductive capabilities. Peasants of past periods have utilized infanticide as pragmatic means of adjustment to the hard requirements for survival of those already maturing or matured. It is not scientific to assume that the swift reduction of birth rates in the rural sectors of traditional societies will not occur simply because it has not occurred in the past. Nor is it scientific to assume that reduction will come simply because the economic and survival calculus indicates that it should. Many present conditions and the mix of conditions are new. Perhaps response will also be new, particularly if the improving means available from developing science and improving technologies are offered in settings and

with appeals that become available from the expanding research of the increasingly sophisticated behavioral sciences.

(5) The comprehensive developmental process of economic advance of an industrial type, educational pushes beyond the elementary school level, and movements of the increasing youth of the village and the agricultural sector to non-agricultural employment in urban areas, and metropolitan expansion, interpenetration, and dominance involve the decline of birth rates from their initial high levels to the low modern levels. This was as true in Japan as in Europe and among European peoples overseas.

(6) The natural correlate of rapid rates of economic growth, nationwide networks of health facilities and civic communication, widespread and increasing school attendance, and urbanward or urban-type mobility is declining fertility. A natural aspect of this complex of factors is the development of family planning activities in the private sector; a new developmental aspect is government approval, stimulation, or financial support of such activities, if not, indeed, governmental programs to educate the people and provide facilities for their use through the health services. This is the present status of all the Chinese or Chinese-related

populations around the perimeter of mainland China. Major portions of this complex exist in mainland China itself, and the developmental facilities among Chinese outside China are known to the government and the health services of the peoples republic of China.

(7) Today, there are no countries in which declining fertility is occurring apart from rapid and relatively-advanced economic and social development. It is here that we find the circularity of relations which are the real dilemma of development. Economic development is deterred in speed if it is not virtually barred by rapid rates of population growth. Increasing child populations and limited fiscal resources bar the educational facilities that are essential both to economic development and to the value transformations that facilitate declining fertility. Limited economic development and halting educational advance in turn slow if they do not bar the declining fertility that would facilitate economic and social development. It is this area that presents the real challenge both to biological and to social research. It is the countries characterized by this trap of circularity that challenges the ingenuity and the administrative skills of government personnel, whether those within the countries or those from outside who advise.

(5) The development process, and hence the strategy of development, is total. Reduced death rates, lagging birth rates, and increasing rates of growth are natural aspects of economic and social modernization. Low death rates, low birth rates, and hence low rates of population growth are not only natural but necessary characteristics of the modernized country. The crucial problem is the initial stimulation of the process of fertility decline prior to and without the associated developments of the natural transitions that have occurred in countries now developed.

(6) The historic deficiency in research, planning, and operations in development programs has been the omission of family planning as a concern to or problem of government. That deficiency is now being corrected at all levels of government in the United States, in increasing numbers of the developing or underdeveloped countries, and in international organizations including WHO.

This conference on population dynamics is concentrated on problems of family planning in governmental programs. The reason is not the centrality of birth control in planning and operations but rather the fact that newly-assumed responsibilities find us inexperienced and ill-prepared to work effectively in this field. Moreover, the long taboos and the continuing procrastinations

in giving priority to the problems of the rates of human increase forceus and our colleagues in the less-developed countries to contemplate action at a time when problems have become massive and acute.

Perhaps the final word of this preface should be the warning that there are processes of resolution but not solutions to the problems of population growth that accompany modernization. Procrastination today accentuates the problems for the three score years and ten that, hopefully are the life duration of today's infants. Economic and social development and the demographic modernization of declining fertility are the associated imperatives not simply for today but for the next quarter century which is both the time of opportunity and the period of peril.

DR. RAUMGARTNER: It has been suggested that we hold questions until we hear all three speakers. I trust that those of you who are coming from the field will have taken particular note of Dr. Taeuber's points 7 and 8 which are certainly very sharply-worded points. Our second speaker is Dr. Phillip Lee, who heads the health services in AID, and who has given new dimensions in these services in terms of adding population and adding nutrition and, I think, probably most of all, adding a new kind of partnership between many, many health facilities in the United States and AID. This includes the Public Health Service the School of Public Health. It includes the AMA, where he is going tomorrow; the Association of American Medical Colleges and

many of the other professional organizations in this country and we are glad at least that he can be here today. This is one of the worst weeks in terms of meetings, in case those of you from other countries don't know it. I don't think there is a meeting in the health field that is not going on this week.

I might say he is a good doctor in addition to everything else.

DR. LEE: I will take a few minutes to go over some of the development in terms of evolution of AID policies and U. S. Government policy as it relates to this complex field. I think that it would be well to reiterate Irene Taeuber's statement that we are all inexperienced and ill-prepared to move rapidly ahead in this field. I think this is one of the great problems that faces us all. We started out the decade of development with the policy of President Eisenhower that the area of population, and specifically birth control, was not the proper concern of government. So that we had not only a neutral policy, we had a very negative policy. This interestingly enough was sent to the field, his statement, in one of the few airograms that I have ever seen that was practically all in capital letters, so it was sure not to be missed.

Early in the Kennedy Administration, some very quiet work went on, particularly in the State Department with Bob Barnett, and others. He is Deputy Assistant Secretary for the Far East. He was to develop some background information and knowledge about the population problem. This I think paid off very well. In 1961, President Kennedy did make a statement about the importance

of population growth rate in Latin America specifically, as they relate to social and economic development. There was a beginning recognition of the problem. In December of 1962, Richard Gardner made the very important statement outlining the United States policy at the United Nations. The essential elements in that statement, which came in December of that year, were first of all that the United States was concerned about the social consequences of its own population trend. The United States wanted to know more about population trend, and help others to know more about population trend. The United States would oppose any effort to dictate to another country its population policies. The United States would help other countries upon request to find potential sources of information and assistance, and ways and means of dealing with their population problems. The United States believed there was need for additional knowledge in the field.

He also made it clear, at that time, that he felt this was a problem of paramount importance to the United Nations and that effort has gone steadily forward since that time.

In 1963, in April, President Kennedy in response to a question at a press conference, indicated he indeed did support research in human reproduction, and he also felt that it was very important that the United States exchange information with others requesting it. This, of course, was interpreted as meaning we could respond directly to requests for information. And at that time, materials were sent to the field, to the missions, so they

could in fact respond directly to requests rather than always having to refer them to other resources.

In the late spring of 1964, there was a central staff created in population, a one-man staff headed by Dr. Bruce Jessup. There were various other people involved in the subsequent six months of development of background material that led to the senior staff meetings. Two of these in December of 1964, at which time the AID population policy was spelled out. It should be noted of course that this development occurred before President Johnson's now-famous statement in his State of the Union message on January 4, which really gave official sanction to the development within AID and president Johnson said at that time, "I will seek new ways to use our knowledge to help deal with the explosion in world population and the growing scarcity of world resources."

Subsequent to that the aerogram was sent to the field. This was in March. From December to March it was going through the process of clearance, and I think when you all received the aerogram you saw the number of people that had to clear on it. So this was a rather tedious operation but it finally did get out and I think spelled out reasonably clear what the policy is at the present time.

As I indicated, this was an evolutionary development. It was not a radical change but it did include several very significant steps forward. I think the most significant of these was that the United States and AID would be prepared to provide

assistance within the whole spectrum of the population field including family planning and the only exception made to that was in the purchase of contraceptives or in the purchase of equipment for the manufacture of contraceptives. There are various reasons behind this. The most obvious one was the fact that this did not constitute a major problem in the terms of foreign exchange and this certainly is still our major public posture on this particular issue. It is the only issue interestingly enough in which we have been publicly criticized by the press. The New York Times and various other newspapers have taken us to task for not including either the purchase or the manufacture of contraceptives within the frame work of our present policy.

I think there are other considerations, domestic, political considerations which we must look at realistically in consideration of why we exclude this particular item and we are fortunate in having private organizations that are not under the same kind of congressional scrutiny, the same kind of political pressure that AID is subjected to. The Population Council has been very free with its assistance in this area, both in terms of providing devices and providing funds to purchase the equipment to manufacture the intrauterine devices particularly which have been the main devices used in this country that developed active programs.

There has been a further evolution of this, and I think a very important one, and that was at a recent WHO meeting.

I don't know if you have seen the resolution that was accepted by the World Health Assembly, but there was a very carefully worded resolution having to do with technical assistance in the area of human reproduction. This includes training and the only thing that was excluded from this was operation. The United Nations, particularly the WHO, does not get directly involved in operation. They do not carry out operational programs with the exception of their medical assistance in the Congo, so that they can in fact provide training. They can in fact work in health centers, whether it is family planning advice or whether it is interuterine devices or pills or whatever method may be used. They can participate directly in these activities as advisors and also as teachers so that the WHO, without any fanfare, I think, has taken a very significant step. Of course the UN also took a very significant step when they sent the mission to India on family planning. This was in the spring of this year. Again, this particular step was taken by the UN without debate in the assembly or without other sanction by the General Assembly.

These developments at the governmental leve and particularly as they relate to AID are from our standpoint, very significant. It means we are not the only major countries involved, the WHO is involved and I think as many of you know, there are other governments that are in a position to be in the donor capacity in this area. Particularly Great Britain and Sweden, but I am sure there will be other countries as well. Against these

developments they may seem like fairly significant developments, and I think they are very significant developments in terms of the long range objectives that we all have in mind.

I would like to say a word about some of the things that have been going on simultaneously. One of these was the development of national programs. We have seen the development of the program in Korea. We are seeing programs developed in Pakistan, India, Turkey, Tunisia and other countries. Some with official government sanction. They are official government programs. There are others, as in the Republic of China, which developed a very good, significant program without official national policy, either Pro or Con, and this was developed through a combination of Provincial Governments and private sectors activities. There are several other developments.

Of course the technological developments that have taken place, the development of the estrogen-progenterone pill, which has made a significant change in family planning practices in the United States and in many other developed, economically-advanced countries, and with some of the elite wealthier segments of the population in underdeveloped countries.

Also, the development of the intrauterine device and its now-widespread testing, the fact that it has been accepted in India, for example, after very careful scrutiny by the Research Council, the fact that it has been shown to be effective in national programs of very significant scope in Taiwan and Korea. Another

development has been the techniques and their widespread application on attitudes about family planning in the developing countries. It is clear, as Dr. Taeuber pointed out, that the process of development itself, with larger families, has been a very significant factor in producing attitudes regarding family planning. So there is, widespread, a desire to limit family size, and also to space children. This has been true in urban areas as well as rural areas. This, I think, is a significant development.

There is what one might call a high level of self-felt need in terms of family planning in many developing countries, which has been not well-appreciated, not well-recognized, up to this time, but it is of course of major importance.

Within the United States things that have been very helpful from the standpoint of AID and why we can take a policy, has been of course the great change in attitude on the part of the general public, the press, the television, about discussion of the population problem. Almost every week there is an article, as there was this week in the Washington Post, on population problems, directly discussing the problem of family planning and birth control. Nationwide television programs, such as the outstanding CBS program very recently on abortion, discussed this very frankly in the United States and other parts of the world. This kind of public discussion of the problem has helped very greatly to reduce the conflicts and tensions and problems with respect to development of policy.

At the local level, and at the States level, also State and local health departments and welfare departments--have developed and supported family planning programs as part of their health programs. This has been spreading very rapidly. This has been aided very significantly by the private organizations involved in supporting family planning. Sometimes it has been a combination. Sometimes one or the other or both.

I think these are the major developments. The other, The Public Health Service, with the creation of interest in child health and human development, took a great step forward in developing a research base that would provide a foundation on which future programs could be based, and they are just beginning to move into this field.

Althoughthere has been a $7 million program of research in what might broadly be called the population program, they have less than $400,000 at this time in research directly related to human fertility control. We hope this program will be expanded more actively and I am sure we will hear more about this, as well as the program started at the State level by the Public Health Service and the Children's Bureau. These are all important steps forward.

With this bit of background information, I think I will close my remarks and turn it back to Dr. Baumgartner.

DR. BAUMGARTNER: If I might underline one thing Dr. Lee said, I think it is extremely important for all of us working in

other countries to remember that phrase that fortunately Dick Garner put in his UN speech, that namely, this was a problem in our country too. I think I have never but once made the mistake of talking to someone from another country about the population problem, even if it was over a drink, without being able to say and without dragging it in, to say, "You know this is one of the great unsolved problems in our country." Fortunately I can always use my experience as Commissioner of Health in New York City, and I can say, "In that great city of New York, one of the great unsolved problems that I never knew how to get solved was the problem of population and birth control."

I think this is something we need to have a very high sensitivity to. I don't know whether Dr. Balfour would agree with me; he has had a longer experience, I think, than anybody in this room.

Now, our next speaker is Robert Smith from AID, who is Associate Administrator for Program Coordination. The only bad thing I can find about Smith is that he never went to Hopkins. I don't know how this happened, and I don't know how you happened to vinvite him as a result of this.

Bob does have a Ph.D in Government and International Affairs from Harvard, and a Masters degree from Yale, which puts him high upon the totem pole with some people.

I would like to say that from the point of view of those of us that have been, I guess we call it nudging about popu-

lation within AID, we have never had a stronger supporter than Bob Smith who has settled down along with his other economic colleagues because he has had a good overlay or an underlay of economics in his government activities and international affairs activities. But I do think the fact that economists have come into the field of population dynamics and have taken a new hard look at it, has certainly been of immeasureable help in formulating the AID policy.

MR. SMITH: When AID was formed, almost four years ago now, there were a number of jokes that went on about, particularly among some British friends of mine, that these were the initials of the Artificial Insemination Division. Little did we know we are attempting to reverse the trend completely in our AID.

Picking up from what Dr. Taeuber and Dr. Lee have been saying, I would attempt to go on with "where do we go from here"?

First of all, the purpose of this conference if you will, is to bring all of you together, many of you from AID missions around the world, to learn about our thinking in AID Washington, to help a little as Phil already did, to read between the lines of that now-famous March aerogram, as to what was really meant and how we were hoping to define our policies and objectives in this field.

Secondly, to share with technical specialists of tremendous national and international reputation, their knowledge in the field of health and demography and the economic aspect of family

planning and population dynamics.

Thirdly, to show other workers in this field from the private organizations and the foundations in the United States that have been doing a great deal for a long time, and will we assume, continue to do a great deal even though the Government has come as Johnny-come-lately into this field.

Finally, to share with one another, those of you in different countries, with a vast range of sizes of family planning programs, from the fledglings to the full-fledged family planning programs, to see what the problems are and how you go about building up such programs and what our particular role is.

We hope to involve all of us as fully as possible in this program. You have seen from the agenda today there are question periods and there are panel discussions and there is a full day--that is, two half days out of four--devoted solely to small group discussions by particular geographic regions.

Finally we have distributed, before the conference started, to the AID members of this group, a draft of a population program guidelines paper, hot off the press. The ink is still wet, and the editorial changes are still being left toyou and us to work on, to develop an appropriate kind of guidelines paper for AID programming in this field. So we will all have an opportunity to look this paper over, to participate in this conference, and ultimately to meet on Friday morning back in Washington to go over policy guidelines ourselves. There is nothing like writing

your own ticket, and this will be the opportunity to do so. As to future action of AID in the population dynamics field, we are all aware that we are grepping somewhat and exploring and testing. We hope to make clear to you what the services are that AID can offer to you from Washington, and even moreso what services you can get from other organizations, private organizations, foundations, from the United Nations and jointly from other bilateral programs in the family-planning field, both in the United States and overseas.

This is a big objective. Let us not squander our totality of resources in this field. We hope to tell you something about our plans in research, in population dynamics, which are begining very slowly indeed, but the next step is about to occur when a small group is going to attempt the preparation of a researchmap in the field of population dynamics so as to get a pretty good idea of what the gaps are, what needs to be filled and what part of what needs to be filled, can be filled with AID funds supporting research in universities and other private institutions of this country.

A small informal group within AID will be meeting right after this conference to lay out this research map and move ahead then with more contracts in the research field.

Some have already been undertaken, particularly in Latin American programs, and also across the board in the field of training and consultant work, whereby we have begun to develop

contracts with a few selected universitites around the country. Finally, and this comes into the field of my own deepest concern, Finally, and this comes into the field of my own deepest concern, is that we want to be sure to work the population dynamics program into the country programming process by which AID works. The great difference between AID and its predecessor agency, for foreign aid, has been this shift from a specialized technical orientation to the problems of the world, to the concentration on the totality of the problems facing each country where we are working.

So we are meeting together this week as the technical specialist in this field, but what we are aiming toward is the type of program which will fit the research effort, the major effort and the implementation effort into total country programming requirements. How does family-planning relate precisely in Country X to economic development? What can be done through family-planning programs to speed up development?

A word about policy, as to where we go from here.

It is clear that we are advocates of family planning in the sense that we are urging all countries to give full consideration to the problem in each country and to the particular dimensions of that problem for a particular country.

On the other hand, it must be equally clear that we are not advocating a particular U. S. policy or a particular method or even a particular result in any country. I think that

distinction is perhaps the most important one that we feel the need to make at this time. Nevertheless, we want to move forward wherever possible, sensibly offering sound advice and assistance where it is desired and where it is appropriate in particular country situations.

Some of you--maybe many of you--will be impatient that our policies are too restrictive and too cautious, but really the expansion that was spelled out in the aerogram in March is still quite new. Many new policies may follow as time goes on. The fact is that we are literally making policy every day on a good pragmatic basis in dealing with some of the questions that you are sending in, and I think that this will develop gradually over a time. We will broaden the range of things we can do. We will understand more fully what, if anything, we can't do.

On the other hand, some of you are in countries where the possibilities of moving ahead with a family-planning program are so very limited. Don't worry about this at this stage. Don't go through this conference and leave it with a feeling that you must then go back to your particular mission and you must carry out the biggest possible program in this field. Your efficiency ratings will not be based on the size of your family-planning programs. I think I can speak for TCR on that, as well as the rest of AID.

Finally, the purpose of this conference is to inform you, for you to inform us; that is, to exchange information,

to exchange ideas, in the totality of this field of population dynamics and see how, together, we can aid other American institutions in this field, both government and private, and working with the countries where we hope to have such programs, can move ahead to the objective that we are concerned with.

Thank you.

DR. BAUMGARTNER: I don't get this business clear between Phil and Bob Smith. One says there is no restriction in AID except in the purchase of already-manufactured contraceptives and of contraceptive-machinery, machinery for the manufacture of contraceptives and I thought from what Bob Smith said we were having objections to lots of things we could not do, and we were figuring out which things we could do. Is there a difference of opinion here between you two fellows?

DR. LEE: I don't think so. I think one of the things that has come up recently, which has required some thinking through, is should we use the Food for Peace Program as a tool for family-planning programs?

DR. BAUMGARTNER: This is tricky. How do you do that?

DR. LEE: This was proposed in a letter from Senator Fulbright to Mr. Bell, so we cannot dismiss it lightly. It had to be carefully reviewed within the agency. This is an area of new policy. This is the use of food as an inducement to get women to come to health centers for family-planning clinics, to have intrauterine devices. The other problem is, should we give

them food if they are going to be sterilized? Should food be used as payment for lost wages in order to induce people to be sterilized? They are going to be off work for a while. There were questions that were unanswered in our aerogram and they were very specific questions. It is the "how" question not the "what" question.

DR. BAUMGARTNER: When you really get down to how to carry out these programs, what can we do and what possible limitation might there be?

DR. LEE: There are other areas. For example, in those countries where there is not a government policy. As a matter of fact, where the general mood seems to be that the problem may not even exist in the country, should we give funds to private foundations, for example International Planned Parenthood, that is involved in advocacy activities? These are questions that have been raised recently and I think that has to be answered and were not answered specifically in the aerogram. So we have had a continuous flow of new questions that we did not answer, even though we recognized that we can do anything except provide contraceptives.

DR. BAUMGARTNER: Let us talk about this Food for Family-Planning business. I would like to ask Don Bogue what he thinks about the psychological implication of doing something like this. Do you have any idea?

MR. BOGUE: No. We would have to try it and see what

happens.

DR. BAUMGARTNER: Do you have any hunches?

MR. BOGUE: If American agencies take action in fields such as this, it can have negative effect, if it is too bold. I think the strategy in much of the family-planning technical aid is for Americans to facilitate the team in the country involved, to take action themselves. For us to get too much on the firing line in this program can perhaps even slow it down, rather than speed it up, so that this would be the question I would have on something like this.

It may be too direct, too much "big stick" type of policy, but I don't know. It may not be the case at all.

DR. TAEUBER: I am much impressed in this area by the fact that things can be done without policy and that they are done shall we say, routinely. As I understand it, the United States food may be used in connection with hospital and health facilities of the countries. Now, if the countries define various contraceptive practices in their aspect of their health services, then there is no need for a specific ruling, is there? Why should we point out that they can use food in all health services except this particular one? So why can't we do a reverse on Don Bogue's principle?

DR. LEE: For a different reason. I think where the non-fat dry milk is used for pregnant women or lactating mothers, it is given in health centers where there are family-planning

activities and this might facilitate their participation. But the food is given for nutritional purposes, either for the mother or children, not as a specific inducement. And I think that is perfectly permissible, and I am sure is going on at the present time.

DR. TAEUBER: But if women are in hospitals resting aftersterilization, is there any special requirement or any need for any special decision on our part as to whether our food can be used for this or not?

DR. LEE: The implication submitted in this proposal suggested, because of the adverse propaganda effect, that the United States identification be removed from the food, so that it was felt that at least in the discussions that went on among a good many people who were involved in this, that this was not a good approach.

DR. BAUMGARTNER: We have had three expert opinions from people living in the United States. Is there anyone who lives in villages and knows what goes on in peoples minds who would like to talk a little bit?

FROM THE FLOOR: I think there are certain incentives being given, but we ought to think twice before we make this one of the incentives, unless it is the government food itself. Usually the incentives I have heard talked about are money incentives rather than any commodity incentives. This to me seemed a little safer since the government is putting its own money into it.

FROM THE FLOOR: I would agree with Irene in terms of using food to get women to a post-natal clinic. But this is being used for nutritional value. However, that is not what the women think when they come there. They think they are coming and being involved in the whole health program.

DR. BAUMGARTNER: Not for family-planning?

FROM THE FLOOR: It is also part of a maternal and child health program, where the women as I have talked with them, recognize the fact that the reason they are going is for the milk, and they will put up with all of the other things that are done at the health centers, such as immunization, just to get the milk, and they are frank about it.

I think as Irene said, if this can be routinely attached to this activity in the health center, just as we would hope that the family-planning programs are routinely attached to all of these other things that are going on in the health centers also. that you get by some of this issue which immediately raises very delicate, moral and all sorts of political, sensitive issues.

I think if we could make it as routine as possible, there is no point in stirring up issues that are not there.

FROM THE FLOOR: I don't know if you are aware of this, but there is a request from a missionary group in the Far East to be a Title III recipient group for food, and this group has a certificate for insertion of a loop before the certificate is given.

DR. BAUMGARTNER: In other words, you do not get the food before a loop is given? Do you have to x-ray them before they get it? A little missionary work might be done with the missionary group.

FROM THE FLOOR: If you have an inducement under that understanding, the idea itself will not be self-perpetuating. That is an objection I would have. If you do not have an understanding along with the other machinery, then you are going to have an isolated solution to the problem, and you won't get internal perpetuation.

FROM THE FLOOR (COLOMBIA): I am curious to know how much inducement is necessary. Is it necessary to give bounties for insertions of IUDs, or is it necessary to have an attractive program? There seems to be a large residue of interest in birth control in underdeveloped countries. For instance, in Colombia, to my knowledge, if only the information could be disseminated, if one could participate in such a program without suffering any social consequences, it would seem to me that the IUDs would go very fast, even in a Catholic country like Colombia. It seems to me the bounty system is a sort of added gimmick which may not be necessary, given the residue of interest already, in birth control.

DR. BAUMGARTNER: I am sure we are going tohear about Taiwan and Korea, but I wonder, Dr. Balfour, would you make a comment on the bounty system in Korea, where loops have gone faster

than anywhere else?

DR. BALFOUR: I don't think the progress in Korea or Taiwan has been related to any reward or bounty system. My own personal reaction to this idea of trying to coorelate Food for Peace with a family-planning program is that it is extremely difficult to administor and politically hazardous. My initial reaction is entirely on the side of Bogue or others who question the wisdom of trying to carry this out.

This does not mean that an AID policy in an individual country might not be influenced by the people who are making progress in family planning, to give a little more attention to their food needs, but I doubt if the two ought to be brought together.

DR. BAUMGARTNER: You would not object, I take it, to Dr. Taeuber's point of view and Carl Taylor's that if food is given as part of the regular health service program, that is all right? Does anybody feel any differently about this?

DR. JESSUP: The Korea mission sent in a request to the desk. If there is anybody representing the Korea desk it would be better if we could hear from them. It was passed to me, the mission felt that was very appropriate.

DR. BAUMGARTNER: How were they going to use it?

DR. JESSUP: As an inducement for education and as a payment for sterilization. This gets into the actual question of should we use American identifiable resources as payment for

sterilization? But it was the mission's and the desk's specific requests, so there are people who feel differently and that it is appropriate.

DR. BAUMGARTNER: Let's discuss this when we discuss the Korea problem tomorrow.

MR. SMITH: In the drafting of this famous population aerogram, at one point some pretty prominent people in AID were of the view that all support of the family-planning programs must be in the context of health services. Some others felt that maybe that was a little too rigid, to say they must be, but I found it interesting that the positive reaction to the use of food in family planning in this group, so far is entirely in this context of it being part of a total health service effort. So maybe without having had the restriction in there, the original thought was not such a bad one after all.

DR. BAUMGARTNER: I think it is a difference, if you look at the administrative structure. We are in no position to tell a country what kind of administrative structure they are going to set up for their family-planning program. I think we can say that "When it comes to our contribution in relation to fee, we think it advisable, more advisable that you go along on the health program on a separate family-planning program." I think these are separable issues.

MR. FLORIO (PHILIPPINES): I would like to speak to Question No. 2 about giving money to some of the international

agencies. I don't know how common this problem is, but in the Philippines as it now stands, I think this would be a very fine approach, except that if you do such a thing, I think it might be important, to have an understanding with the agency that you give the money to, that you are going to fund them into certain directions, that you are not going to spend it for instance in Korea and Taiwan, where they are already on going programs, but you are going to spend this money in some place like the Philippines, and in the near future the government will not take a definite stand to help a great many private agencies that definitely need help and we have no mechanism for helping them.

DR. LEE: The Latin American Bureau is considering a regional contract with the International Planned Parenthood specifically spelling out particularly types of activities in which they will engage within the Latin American region. This includes training of physicians, it includes regional seminars, it includes information exchanged, but not the propaganda-type of programs, so that they are precisely defining what the organization will do and this includes some of the things they are presently doing.

We would not fund those things because they are not within our policy.

FROM THE FLOOR: The Philippines is a special problem, in Asia, so I don't know how you would work it out there, being the only Catholic country in Asia and a very conservative Catholic

country at that. There are a lot of independent private agencies.

DR. BAUMGARTNER: Are these affiliated with the International Planned Parenthood, all of them or most of them?

FROM THE FLOOR: Some are and some are not.

But they are springing up all over the place and they need help desperately.

DR. BAUMGARTNER: AID has made some contracts. They made contributions at least to various branches of IPPF.

MR. KORNFELD (Leonard Kornfeld, Washington): On this business of private organizations, one of these items that did get settled in a pragmatic manner was in Jamaica, where we did enter into an agreement, a project agreement with the consent of the Jamaica Government to give our assistance, AID technical assistance, to the private organizations in Jamaica which is doing work in the birth-control field.

DR. BAUMGARTNER: May I add also that AID has made a contribution to the seminar at the London Conference, one to the Seoul Conference in Korea recently, and individual missions in Latin America. Sent 15 people to the conference in Puerto Rico, on an ordinary mission, a participant training kind of thing. I do think I would also like to point out that the British Technical Services, Andrew Cohen (?) and I have had several hours together, about two weeks ago, and he indicated that Great Britain was further behind in this field than you or I in terms of their investment, technical people, their private organizations. They

had a feeling that the only way they could contribute significantly might be through rather large grants to IPPF, which would in turn give grants to various countries in which Great Britain was particularly interested. For example, in all of West Africa certainly the health services there are tuned in to Great Britain pretty largely. They would be more interested in helping out in population programs there. They were delighted to know of the population council going to Kenya and would be glad to pick up the tab for some subsequent work along this line. The same is true in Nigeria. The same is true in Guinea today, and it may well be that large contributions can come from technical services, but that might come through IPPF rather than directly.

MR. MONZANO: When you use a third party or organization to administer a program of AID, my question is the administrative responsibility U. S. AID would have in such a program, it seems to me this area is not clear, not just with the question of population programs, but in other areas and I think that perhaps this is not some question that should be confronted by this population group, but I think it should be a question of when you use a third organization to do a job in a country.

DR. BAUMGARTNER: One other question for the two representatives that have spoken from the Catholic countries. Does the use of International Planned Parenthood Federation embarrass the population problem, or is it easier to have, if there is to be a third party, aid to come through some organization that

is not so much associated with the propaganda approach as planned parenthood?

MR. MOEZANO: I don't know the answer to that question. I would have to think about it, but he said in Jamaica that was done with government consent. This is the thing I am trying to do. I cannot get it done with Government consent. I want to get it done without Government consent.

MR. DERKEBERRY: If this is done, I think through voluntary or planned organizations. So, look at the difference in experience between Korea and India. It would be well worth looking at from the standpoint of policy as to what the policies of the private organization itself is, and the way in which it functions because they are entirely different in the two countries.

DR. BAUMGARTNER: Please enlarge on that.

MR. DERKEBERRY: The Planned Parenthood Federation of Korea has many more professional people in it, and it is largely run by professional people with a policy that anything that they do will be turned over to government as soon as the government is prepared to take it over. In other words, they see themselves as an exploring organization, into new things, or in handling funds or handling situations where you have to go through a lot of government red tape. India, on the other hand, the voluntary agencies there are largely operating people who get into a rut, as some of our own private organizations had here, and become concerned with continuing to operate what they have been operating,

and the government subsidizes what they do 100 per cent without any audit. I think there are many, many more things I could say about it, but I prefer just to give this general idea. But I think these ought to go into a policy, if you are establishing one.

DR. BALFOUR: I am rather troubled by this suggestion, that AID funds might be used to support private family-planning associations. There is such a vast difference in the efficiency and effectiveness of different groups. As Dr. Derryberry has indicated Korea has a highly-effective family planning association which functions in full cooperation with government, closely, and one supports the other throughout and any money invested in the Family-Planning Association of Korea would have my full endorsement.

On the other hand, I won't name, but I could tell you, I know of 2 or 3 or 4 agencies that I would not invest 5 cents in because they are less effective and more inconflict with government activities. I was in Korea recently at this past conference and gave a paper, on invitation, that the functioning and financing of the family-planning association. I made a point that although foreign aid to the private associations, money from the IPPF, the international body of various foundations was justified and helpful for a certain period of time, and particularly for a specific project. To me thereis a danger in making these private family-planning associations too much dependant on foreign support. I presented the idea, and I am convinced of it, that

the family-planning associations throughout the world, Asia in particular, have to find their own money and resources locally, if they are going to continue to thrive.

India has indicated that 80 per cent of their money comes from government and so there is danger of too much subsidy to the private agencies, it seems to me.

FROM THE FLOOR: I would be interested, not necessarily, in the American organization, so long as they were recognized as a competent group, but more my interest would be the organization in a country that would be operating the situation. A second thing, in terms of amounts of money and types of programs, it seems to me in any population program that you mobilize, it goes through stages and at a certain stage, I think if we are concerned about population explosion going on, I think we may have to make a considered decision, at a stage of a weakening interest in population problems, that since they are not capable of giving support internally, it might be desirable for the United States or some source of funds to support them. Ultimately, when you start going into a massive program which requires a continuous service to the population, this might be the time in which you would have to have your objective be to transfer this project to government, but the degree of funding may relate to the stage of the program within the country and at the same time, the organization working within the country itself. I think this is a fact that would be important. What we face in Latin America and in

the Philippines is, as I gather, that we cannot really get anything going unless through AID because of government obstacles. It is a sensitive topic. But if we can do this, for instance, through the population council, Ford Foundation, it seems we could channel funds into a program that could be effectively used. We do have a significant program in Colombia going through the use of pills, for instance, in Catholic countries, using Ford Foundation funds. This sort of situation, and I would like to do more about this. I would like to channel more programming funds through this source, but I would like to retain some control of what the funds are used for, just for effective utilization of funds, having an influence in the formulation of the policies within the country group itself.

DR. BAUMGARTNER: You are saying you want to have your cake and eat it too.

FROM THE FLOOR: Yes, I am worried about the effective use of U. S. funds in terms of the general plan itself.

DR. BAUMGARTNER: I think the most important thing you have done is that you have answered, I believe, a pretty basic question. That is, there is no one answer for every question. I know of no field in which there has to be greater flexibility, both at AID Washington level and in the population in the field.

One of the great difficulties with a bureaucracy such as AID is that it likes to have simple directives to answer all questions. If you remember the original nerogram, one of the

most significant things in it was that the decisions would be made on a case-by-case basis. This meant, I think, great flexibility in terms of looking at various parimeters.

FROM THE FLOOR: Speaking for the Philippines, that's my situation exactly. We can get these moving.

DR. BAUMGARTNER: This problem now. Dr. Cobb.

DR. COBB: Just a brief comment. I think it is very important, from the point of view of the possible reaction in the countries receiving the grant, that the money from AID if it is to be channelled through another agency, could preferably be channelled through an agency which represents not just one country but many countries so it does not have a strong American slant, and also that it should be channelled through an agency which does more than family planning, preferably developing an education in other areas of economics and agriculture and so forth. I think these two approaches will reduce the chance of a negative reaction.

DR. BAUMGARTNER: We will have our break now and come back to Mr. Parlman on economic implications.

(Whereupon, the morning recess was taken.)

MR. STEBBINS: May we come to order.

I know there are a lot of questions you would like to raise in connection with the previous session. We have as our introducer of the subject a speaker on the economic implication, a man who has, for a number of years, been greatly interested in this aspect of it and has become a population man, although we made a public health man of him first.

There was a comment about too many people from Hopkins -- well he is from Pittsburgh, the University of Pittsburgh. He is professor of economics at the University of Pittsburgh, Mr. Mark Perlman.

MR. PERLMAN: I think the requisites of a good presentation are these. I am supposed to tell you something you know; that is to assure you that what I am saying is valid. Then, I am supposed to tell you something you don't know; that is to make your presence here possibly worthwhile. Then I am to tell you finally something which probably you doubt to be so; that is to leave you with the feeling that more research is needed. Then my function will be performed.

First, what we should know. The purpose of my presentation basically is to try to put several ideas in perspective. There are really two principal themes on the subject of economic development and population growth.

One theme which I suspect has a great deal of validity in this country is completely different from the other and very much

conditions, it seems to me, much of the research on the problem. That being, the growth of population, particularly where resources are plentiful, stimulates the demand for goods which in turn is to the advantage of virtually every economic group in the country.

This is the population, American view. It is a view which has been challenged from time to time, but which I think explains to a great degree much of the resistance to the discussion of international programs, for reducing the rate of population growth.

It is a theme which has validity. It can be shown historically to have had meaningfulness. Indeed, one of the great problems of American economy many times has been that we have had too slow a rate of population growth.

Now, I mention this first for two reasons. First, you have to explain to a great many Americans what is the difference between the American situation and the situation in a great many parts of the world; the critical point here being the ratio of natural resources to population.

Secondly, I mention this point, because I think that there are certain aspects of it which are even true in under-developed areas which are over-populated. There is more to be explained here and I shall do so at the end.

The second theme which is the Malthusian theme, says simply that the growth of population, where resources are scarce — and this point Malthus stressed in his presentation — tends to

lower the real wages of labor and tends thereby, of course, to keep the population pretty close to what is the depressed economic level. Something akin to the minimum standards of living.

These two theories, I think you all should have seen in the literature. What I propose to do is talk about them and analyze them in first demographic terms, and then economic terms.

Obviously when we start talking about demography, we talk about a limited number of variants. We are talking about the number of births and the number of surveys over a particular period.

Demographers tend to use, as a basis of their comparison, the number of births per thousand in the population or per thousand in the women who are in the ages where children are normally produced.

This is not the only comparison that can be used. In fact, I will suggest that perhaps the time period is as important as the population, as the denominator.

We are also concerned with the number of deaths over a period, and of course what age groups suffer, or what are the ages of the people that die. There is considerable difference in demographic terms, whether it is children that die or people past 30 who die.

Thirdly, demographers have become increasingly interested in measuring the period between generations. You can call this, for want of a better term, the inter-generation span. The point being here that if a family reproduces every fifteen years, it can

go through four generations relatively easily in 45 years. So you have the basis of four generations in 45 years.

As an example of this we have had a domestic for many years whose grandmother was 16 when her mother was born. Her mother was 15 when she was born, and she was 14 when her daughter was born. If you added up, there were four people there who were born in a 45 year period.

This means two things. One is that the family reproduces very rapidily. The second, from the standpoint of economic aspects, there are usually three and often four generations of the same family present at any time.

This becomes rather significant from an economic analytical standpoint.

Now, as a contrast, I will take my family where the average age of the mother at birth of the child was about 33. This is only, I am assuming, a one child family. This means as my grandmother was 33 when my father was born, and my mother was 33 when I was born -- and let's assume that I was a woman and I was 33 when my daughter was born -- you have 99 years, which is well over twice the period.

Moreover, in my family it is very rare that the grandparents overlap with the grandchild for very many years. I think I once measured it and it was something like eight or nine years. So in these two families the overlap pattern is different and the rate of reproduction is different.

I want to talk more of the period of in-between generations.

Finally we have the question which grows out of all of this. What percentage of your population is economically active at any particular time? Obviously, if you have a great many children, and they form a very large portion of your population, the economically active part of the population — if you can assume they are not very productive — will be relatively small.

By the same token, certain countries like the United States has a rather peculiar, or it seems to be developing a rather peculiar population part. You will have a great many old people which, from an economic standpoint, generally are not too important.

They are non-producers, but they do not consume very much, except in the medical profession, and there they consume a lot of services of doctors. And you have a relatively large number of small children.

You will find that the proportion of the population which is non-productive can be fairly great. This of course has to be — the goods and services which this non-productive part of the population consumes, that has to be produced by the productive part of the population with the aid of capital and with the aid of investment of natural resources and so forth.

Thus I have identified principally five major variants. The, birth, the death, the period between generations, the problem of generation overlap and the ratio of productive population to total population.

-10 Now, from the standpoint again of the demographer, we are rather intrigued as to what causes the fluctuation in birth rates. Now, if your birth rate is measured in terms of the total number of births per thousand people in the population, or per ten thousand people in the population, or per 100 thousand people, this rate will fluctuate wildly depending upon what the demoninator looks like.

If you have a frontier area where there are very few women, where the sex ratio is very strange, you will find that although every woman between the ages of 15 and 45 is bearing a child every year, the rate of population growth compared to the total population will be very small. There are just not very many women around.

Or if you have a population which has a great many children under the age of 15, you can assume that the birth rate -- that is the number of babies born per total population -- will be very small, and by the same token if the population has a very large elderly component, as it does in Ireland, you will see pretty much the same thing.

So what the demographers have done is changes the denomiator from the total population to the eligible women in the population -- and with a certain amount of good sense -- eligible women does not refer to marxied women, but women between the ages of 15 and 45.

It is a convenience.

I gather that women do bear children before 15 and after 45, but not frequently.

10 There are great flucuations with regard to this, what the economists call the refined birth rate, or the demographers will call the fertility rate. The fluctuations are very, very wide. One of the questions that has intrigued everyone who has looked at these statistics is, why is there this great variation? Does this great variation come about as a result of accident? That is to say, there is notclear explanation, or can one give an explanation for the fact that the refined birth rate will fluctuate very markedly over a 15 or 20 year period.

I think the most useful explanation -- there are many -- but the most usaful one and the one I want to point to here was developed or put forth in economic literature by Professor John Habkuk (?) of Oxford.

11 He was intrigued with the fact that the British-defined birth rate fluctuated wildly. Heconstructed a model andsaid, "Perhaps it happens like this. If you have a normal span of years, say from 1800 to 1820, and if you have several things that happen during these years, maybe you can see the impact of this on the birth rate."

Supposing you have years of bad crops. Marriages tend to get postponed during those years. What is even more to the point, the babies that are conceived in these years often don't survive infancy, or perhaps even are stillborn, because of the poor nutritional characteristics. So he says, "What happens is that for several years you may have a sub-normal period of births. Then you have some good years. The wars are over. The fellows come

home. The crops are good, and a lot of marriages or a lot of conceptions which were delayed during this period suddenly occur."

You will have a post-war or a prosperity boom. He said that what has happened of course is that this poor period is still followed by an extraordinarily good period. What it really is doing is smoothings the whole period out.

Now, he used Swedish statistics to show this, and he used the British statistics to show this. And I think the point is, on the whole, not only conceptually possible, but it is empirically well verified.

There was a German economist, during the Hitler period, who took German history and took the period of 1800 and watched what happened to these cycles in birth. He found that it took about 100 years for the cycle to even out.

That is to say, if you have a crop of babies, from 1946 to 1953 you can expect to have a large crop of babies when those babies come into the most frequent reproducing years.

Now, the question is, how long do these waves last; and a German economist, by the name of Lush (?) incidentally, argued -- and I think again he empirically verified his thesis -- he argued that it takes about 100 years for a shock to level out.

That is to assume there are no other shocks, and since there are other shocks, some of the shocks might accentuate the first shock. Some of the shocks may work in opposite direction of the first shock, and of course, whether it is one or the other

will have a very marked impact on the number of births in any one particular period.

Now, I mention this because I am intrigued by a great many of my colleagues and friends who have been connected with the Kennedy and Johnson Administration, Council of Economic Advisors, and they have gotten worked up about just what a tax cut has been able to do for the American economy.

The tax cut also happened to be timed to coincide with the second wave of the post World War II baby boom. So how much is due to the tax cut and how much is due to the wave, I don't know. I only suggested to them it is not all due to the tax cut. This is blow enough for them.

Later, you will have people talking to you far better qualified than I to discuss why people have families of given sizes. Professor Freedman from Michigan, for one, has done much more, or supervised or been associated with much more research than I on this. I don't want to get into this topic. But I think a great deal has to be seen as to why people choose to have four children or five children or six children in their families. I don't think that it is simply lack of knowledge about contraceptive techniques.

Ansley Coale, who was a demographer at Princeton, says that most countries in the Western World, without the pill, without knowledge of IUD, and without some of the even more aesthetically pressing methods of contraception, manage to lower their birth rates for the last 170 years.

10 It is not simply the question of availability of modern contraceptive information. The French lowered their birthrate as soon as land was distributed to the peasants, and they kept it low. They did not want to have the plots of land broken up any more than they had to.

A point to specify here is, not simply the question of how many children people choose to have , but when do they choose to have them. I think I can show you over a hundred year period, with a computer, that if you get the inter-generation period to expand the average from 20 to 25 years -- that is to say 50 percent of the children are born before the mother is 25 years of age, and 50 percent born after she is 25 years of age -- without too great a variation from the period she is 20 until she is 30, the population growth impact of this will be far more significant then if you get her to reduce the number of children per generation from four to three.

A 25 percent increase is far more significant than a 25 percent decrease in the number of children in terms of number of people around.

I have often argued with my friends who are interested in family planning in under-developed areas. Can you not use this argument where you are not really broaching the basic question of "what is your function" when you approach a mother? "What is your function on this earth?"

You are simply saying, "Let us accept that your function is

L-11 to be a producer of children. This is part of your culture, part of your tradition. But have you ever thought, if all of your children are born by the time you are 25 or 26, that you are probably going to have 25 more years to sit around the earth, of which probably 15 or more likely 18, you won't be able to do very much for your children because they won't need you? What are you going to do with those 18 years?"

Change the picture slightly and say, "Reduce this 18 year period to a 12 or 10 year period," and you might have, it seems to me, a receptive ear to the use of some type of contraceptive program, or otherwise you are really talking in terms which challenge her won cultural view of her function.

Now, presumably others will talk much more about this question of why people have children and how one discovers what the optimum number in their culture is, and how you change their view as to the optimum number. The point has been made, however, that as countries develop economically, other things develop simultaneously and whether it is the economic development or these other things, there is a tendency for the birth rate, the number of children per woman we will say, in a typical family, to diminish.

For example, the general argument is, as more children survive infancy -- it takes a while because there is a cultural lag -- but sooner or later a generation of girls discovers if they want to have four children survive they do not have to start off with seven infants. They can start off with four.

2-11 Secondly, there is a period of the emancipation of women. The cotton factory has always been a good example of this. As cotton factories are founded, traditionally the employees include a large number of teenage girls.

This does three things for these teenage girls. In the first case it gives them an alternative to marriage at 15. This in itself reduces the population growth.

Supposing they don't get married until they are 19. That changes the inter-generation period.

The second thing is that quite frequently it gives them some money. This money or this trade gives them a certain degree of independence. If their husband takes the view that they ought to have three children, and if this figure is not the wife's desired number, the wife has alternative to a degree. She can tell him to go to hell and she can support herself.

I suspect, when I look at the literature from the 19th century, there was a great deal of this. Women found there was an opportunity for economic independence outside of the home. When they found this out, whether it was due to the husband's difference in attitude on the size of the family, or differences on unrelated issues, she walked out of the house with the children and she supported the children.

This in terms of economic development often means a lowered number of children per woman.

Thirdly, tied up with this is the increased role of education.

b-12 Women have more education, and education may mean in many senses a decision to space children differently.

In my family, traditionally children never appeared more frequently than a four year interval. This was before the day of four year fellowships, and the theory was that four years was the minimum amount of time before you had the next child, because you could not afford to have more than one in college at the same time. This was the product of impact of education on my parents' and my grandparents' generation.

Factors have very strong economic roots and have very strong economic implications, and they relate basically to conception and births.

Now, let us talk about changes in the number of deaths. The most important thing in the number of deaths is, who dies and when. We have a relatively long life expectancy for virtually every age group in the United States. It is by far not the best in the world, although I suggest if we could get the data of the countries which appear to have better life expectancies than we do, the differences probably are found in the homogeneity of this population as contrasted with the heterogeneity of our population.

I am not sure of this. We have not had good statistics until recently. Professor Hughes (?) at the University of Chicago has been doing the first really important work on death statistics, from an economic standpoint, that has ever been done in the history of this very important area of vital statistics.

12 The point I am trying to make here is simply that if old people die, it does not have much of an impact on the population. At the present time the life expectancy means simply that 50 percent of the people will probably die before that age, and 50percent after that age, and that age is slightly better than 70 years.

Suppose we increase it up to 80 years. It will have tremendous economic implication in terms of number of doctors and nursing homes we will need. It will have tremandous economic implication in terms of the political representation process, since elderly voters are not disqualified from expressing their views politically.

But it isnot going to mean very much in terms of thegeneral economy.

On the other hand, if you go a country like Pakistan or like Brazil, you have a high infant mortality rate. I think the Brazilians own up to an infant mortality rate in Rio of around 204 per thousand dyhg in the first year. I suspect it might be higher. But assuming that is correct, if you reduce that rate down to let us say 150, that is a 25 percent reduction, a rate at which at that time will still be well over six times the American rate.

This will have a tremendous impact on the growth of population in Brazil. In fact, one of the great problems, is, it is easy to reduce that infant mortality rate, but it is not easy to

42 increase the food supply and supply of other necessary services proportionally.

Abel Wolman cites a very frightening statistic. That is, the proportion of educated children in Brazil 30 years was approximately twice what it is now. That is to say, 30 years ago, around 50 percent of the children were going to school, and at the present time around 25 percent are going to school.

This is in the face of a tremendous program to expand educational opportunity.

This can be blamed, I suppose, as much as anything on the reduction of the infant mortality rate as it can be associated with increased number of children per woman.

Now, the next point that I want to make with regard to changes in death rate is that traditionally, until around 1910, we believed that most of the reduction in number of deaths that occured could be associated, not with medical knowledge, but with improvement of nutrition or with improvement of environmental sanitation.

This had certain nice things about it. One of the things was that the reduction in mortality tended not to outpace the growth of technology or the growth of economic productivity. It was a function of economic technology and economic productivity, but since around then, and certainly since World War II, the reduc-
43 tions have occured because of medical discoveries. It is possible to save vast numbers of infants at a very low unit cost, and you would save them from a death due to dehydration associated

with gastro-enteric diseases, so they could become tuberculosis statistics later on, and thenyou save them from a tuberculosis death by the use of one of the new drugs, so they die of something or they live unproductively for another 10 years.

Part of the problem here is, that from the standpoint of economy or from the standpoint of economic analysis, the self-governing apparatus which was so delightful in terms of the 19th century no longer is relevant. Now we come to the question with regard to the changes of the inter-generation. All the points here I pretty much made, but I want to review the role of education.

If you keep girls in school until they are 17, per force, they will probably not get married until they are 19, and there is a greater probability that a good many of themnot until 21. Then, if you keep girls in school until they are 9, they therefore get married by the time they are 15. This is a very important factor in explaining the historical trend downward with the refined birthrate.

The next point is with regard to fertility control. I suspect that much of the explanation of fertility control in the 19th and 20th century is associated with this greater education and postponement of the first pregnancy, postponement of the age of marriage and the consequence causal of the first pregnancy. I think that it has a great deal to do also with changing women's use with regard to what the purposes of their

life are. If the purposes are simply to bear children, then education, book-learning, is not that important. But if these purposes of life are to have some cultural background in the community in which they live, perhaps the schooling process gives them the opportunity for the type of satisfaction which means something other than just a large number of babies.

I stress this because I think for most of the world increasing the length of education of girls will probably have a tremendous impact on the fertility rate. This probably is not true in the United States. The United States is a unique country in this regard, and that is because of our great wealth. That is because girls do not have to finish school before they get married in the United States. This of course is a change in our lifetime. When I was a boy and a girl became married, she was thrown out of high school. She was not fit to share a class with because she was a married woman. In fact, when I was an undergraduate we vacated scholarships if we married during the period we had the Fellowships. Now, it is changed, and we have the usual situation. If a graduate and undergraduate student asks for increased fellowship assistance because he decided to get married or have children, we think it is basically anti-social to say to them, "Who asked you to get married?" or "Who asked you to have this child?". If you do this you cannot take our fellowship assistance."

The climax to all of this is this. The woman who runs

the Amalgamated (?) union here in town, is a very charming woman. One time I was walking down the street with a friend of hers and they stopped and talked. The friend said, "Where are you going off in such a rush?". She said, "I am working evenings this year. I ran out of money. Two of my boys came back from the Army and got married and they have large families. As I say to them, 'Have your children while I am young so I can support them.'". This is a change. Now, the other question, the last question that I want to mention on this sector is generation overlap. This has become, from the standpoint of many countries, a very critical housing question or a very critical health question, a mental health question. It is basically the natural consequence of several economic and demographic changes that have occurred simultaneously. If you lengthen life span so that you have 3 or 4 generations of a family alive at the same time, and if you urbanize this family in such a way that it is very hard for the non-productive part of the family to live with the productive part—that is, say, the elderly parents with the family of the generation which is in the productive years—you can create just a tremendous number of sociological and ultimately political problems. This is, of course, basically what has happened. It takes the form of a very much augmented demand for medical services on the part of the elderly. My suspicion is that it is not so much a demand for medical services as a housing problem which has not been adequately faced. But that, as a theme, can be pursued on some other occasion. Now, let us

turn to the economic ideas.

I have talked thus far only about the demographic ideas. Now let us focus on the economic ideas and talk about demographic applications. We run into this general problem of how do you measure progress? What is economic progress?

Now there are a whole number of ways to measure it. A very important way for many parts of the world is to have a steel mill or to be able to tell somebody else to "go to Hell" and I come back to this because this is a very important point in much of our demographic analysis. If you have a steel mill you are better off than if you don't, and even if the steel mill is purchased at the price of the standard of living of the country, they may feel it is worth it. That is something that we do not buy generally, but they do and we cannot convince them of the error of their ways. If this is an axiom, a corollary of that axiom deals with a mine in the northern part of Brazil where they extract from the earth one of the components for the making of steel, and this company which is pretty much dominated by Bethlehem Steel Company, contributes mightily to the Brazilian economy. It is one of the single biggest dollar-earners out of Brazil. This mine, however, is—this whole company is a colonial example, example of colonial exploitation in contrast to the Volkswagen firm. The Volkswagen firm contributes no currency to the Brazilian economy. On the contrary, it drains currency, but it has advanced technology, whereas the mine in the Amazon area is not advancing technology.

When the Brazilians wax eloquently on the subject, they tell you how terrible it is in the north and how wonderful it is in the south, where they produce the Volkswagens. Economic growth to most of us, is measured in terms of the value of goods and services produced in a given area, divided by the number of people in the community. Or the value of that portion of the goods and services which can be used for consumer purposes divided by the number of people, weighted by the relative consumption.

Now, many of you, from missions where you have wrestled with this question of economic growth, and I do not want to say very much about it, except if you wish to measure, to analyze the changes in economic growth, you have to know certain things. One of the things you have to know is if you increase the plant by a certain amount, the natural plant by a certain amount, what will be the increase in the national flow of goods and services. This is technically called the capital output ratio.

In certain communities the rate of increase would be relatively high. In other communities relatively low. A great deal depends on what stage of technology you are in.

The second thing you have to know is, what is the typical rate of change in the productivity of the economy associated with its own improvement. That means newer machinery or older machinery. Newer or older ideas. And better organization or poorer organization. We had to convince people what they need in their economy is not more capital equipment, but better quality of

management or better quality of supervision. But this lesson is not too hard for countries to learn, and I think on the whole, in the variety or the spectrum of lessons that the United States has sought to teach the rest of the world, this has been swallowed easily.

The third point is, how much of the national product each year do you have to pull out, not for development in plant to increase the future flow of goods and services, but how much do you have to pull out to put into people. That is to say, if you have a large number of children you are going to have to pull a little of the goods and services that are produced in the year 1 out, not for consumption and not for production of goods in year 2, but for improving the quality of the children who are around.

If you have old people, you are going to have to pull out goods and services for hospitals; you are going to have to pull out money, not only for schools, but for highways, and for various other programs, the major purpose of which is to improve the quality of the people in the next generation.

Now, my colleague at Pittsburgh, Ed Hoover and I, were asked by Bruce Jessup to take a look at the Pakistan economy and try to give them some idea about the nature of the future for Pakistan with a certain variety of assumptions. I passed out to all of you a copy of a paper that I gave somewhat later on which carried in the second appendix some of the data which we developed.

The paper itself, I think, summarizes some of the points, but let me turn to Table II on page 6 in the appendix. It is possible to say the following. Here is the population of Pakistan. In addition, here is the age distribution of the population of Pakistan, and if we continue the present fertility rates and the present mortality rates, we should be able to tell you how many people are going to be around in Pakistan in the next 20 years. That was a job done by Census, and insofar as I am aware, it was well done.

In addition, they told us that here is the schedule for foreign capital for Pakistan for the next 20 years. Let us assume that the United States and other countries are going to give Pakistan so much foreign aid, and let us assume further that Pakistan is going to sell its products abroad for so much in terms of hard currency, and here is their source of foreign investment. In addition, we were told—and these figures are reasonably good, being done by Professor Enke at Harvard—here are the capital output ratios for various sectors of Pakistan industry. With this much increase in investment in, let us say, the hemp industry, we would expect so much increase in the flow of hemp for domestic consumption and export. They said, "If all of these things are true, and if the population continues to behave just this way, what will be the gross national product per consumer?". The weighted consumer—a woman counted 9/10ths of a child and a child counted 5/10ths of a man—what will be the gross national product of consumers in the future? Table II gives some of this

data under different sets of assumptions. If we look at the middle panel, gross national product per consumer, and if we say that it is important for Pakistanees to save for production purposes, to investment, 36 per cent of each year's product, and if we assume that the population is going to stay as it is—that is the second column "Constant Fertility and Constant Mortality"—we will assume in the year 1985 that there will be 939 rupees per annum for each typical consumer in the gross national product. If we take away from that the amount that is going to have to be put into investment, you will get approximately 725 rupees per annum. That is saying that 10 per cent of the investment goes into schools and hospitals and 36 per cent of the gross national product is saved.

Now, of course, if you only can save 20 per cent of the gross national product, the amount will be lower. It will be, for consumption, it will be 627 rupees per consumer. If you had to invest more money in people, then the amount will fall even further to 665, with a marginal savings ratio of 36 per cent, and to 580 with a marginal savings ratio of 20 per cent. If, on the other hand the situation gets worse, and that is that you are not able to restrain fertility, that nobody dies the way they are now, and that will be possible when the impact of modern medicine hits Pakistan, you will have a mortality, instead of having 625 you will have 689. This is a significant decrease in the amount per consumer.

Of course, the best situation is if you could come along and introduce a family-planning program to restrain the growth of the population. The family-planning program, as I recall, was worked out on the assumption of a somewhat smaller number of children per family so you could raise the amount per consumer, as high as 825 rupees per annum. This could be done by diminishing the fertility and diminishing the mortality.

Now 788 rupees, as shown, diminished fertility, and you expect the mortality will also diminish. We computed each of these figures for two differ marginal savings ratios and two marginal drain factors.

When we were in the process of working this through, we had a letter from Dr. Stephen Enke, who thought we should build into our methods some functions regarding technological improvement. So, we built in 2 per cent improvement, just associated with technical know-how and again you will see the figures are somewhat higher. They present the same general pattern, of course, but the rates are somewhat higher.

At this particular point the question was put to us--actually we put the question: "What would happen if Pakistan was willing to live by the figure of 725 rupees per person? What would happen if they took this amount and said, 'This is enough. This is what we expect'. But at the same time they went in and developed the family-planning program." How much would they need to depend upon foreign aid then?

Much to our surprise, and you can see this, you discover that by 1985 Pakistan will no longer not only not be dependent upon foreign aid, that is, to say, on foreign investment, but they will be a capital exporting nation, if you believe what the computer says. This, to me is an important argument. I am going to repeat it to clarify what I said.

We said simply that if all this foreign aid, population—what would be the amount if we are not able to introduce a population control program—and the answer was that each individual in Pakistan would be able to have available to spend on the average, 725 rupees or so per year.

Now, we said, "If you are willing to settle for that, and you say that is good enough, now what will happen if you introduce a family-planning program, and what will happen if, in addition, you say to people 'The benefits of this family-planning program are not going to be found in increased consumption, but the benefits are going to be found on less reliance on foreign aid'." How much foreign aid will you need then?

And I repeat, the answer was that, not only will you not need any foreign aid, but you will be in a position of being able to export. Obviously the truth lies somewhere—if these figures are true—between these two positions. Part of the advantage will be taken out in the form of higher standards of living. They will do better than 725 rupees per annum. They may go to 740 or 750, but part of it will be found in less reliance on foreign aid. In other words, the Pakistanians will be able to tell more

11 people in the world, probably us, to go to Hell, faster than would otherwise be the case. If this is an objective or a significant aspect of economic growth, we are helping them to grow economically. That is to say, if independence or the census control over one's own destiny is an important aspect of national sovereignty and an important aspect of economic growth, this is a desirable thing.

Now, the kind of study we run on the computer was a lot of fun. Like all of these studies, I say basically it was a lot of fun, but the last has some important elements of validity. We have to depend on a lot of empirical information from sources which are not too reliable. As time goes on, I think we should make more of these studies with better data and check them against the data. It seems to me you have here an economic arc for an implementation for a family-planning program. Not in terms of how much better off the family is going to be, but how much better off the nation is going to be if it can divert part of its resources into training youngsters or keeping people from basic starvation?

The only thing I wanted to mention in terms of studies we have done relates to an American study which was underwritten for us by a group connected with the Planned Parenthood Federation. The Planned Parenthood Federation, or the group connected with it, became concerned about the rate of growth of the American population. When I review my correspondence with them and my discussions with them, basically Professor Hoover and I have agreed with them as to what the problem was. I don't think they quite understand or that several of their people quite agree, as to what the

American population problem is. The problem as it was originally visualized was "Will there be food enough in America?" to which we could easily say that if you look at the rate of the American agricultural sector and at the rate of growth of the American population, the problem of agricultural surplus is not going to disappear in the foreseeable future. There is going to be food enough.

Well, is there going to be space enough? Professor Hoover and I had disagreement on this. I being basically a city boy, although I come from Wisconsin, I think city life is the rationale way to live. I say look how closely-populated people are in Holland or Belgium and they seem happy. I do not think there is going to be a space problem. Ed is a country type, and he said that it is conceivable that in the next 50 years there is not going to be enough greenery around. But we agreed if it was a problem it was not a high priority problem.

Then we got concerned with the question of the future of employment in America. Was the rate of growth of the American population going to present an employment problem in the future? That is where we concentrated our work. What we did was to take the American population in 1960, broken down by age groups, by color and by educational attainment, and we made certain assumptions about the rates at which each of these groups were growing. Now, we discovered that if nothing happened in the future and if they continued as they were in 1960, the population in the year 2000

would be 354 million of which 295 million would be white and 59 million would be non-white. We discovered that the labor force, 20 and over--this is a definition of labor force used by the Bureau of Labor Statistics, but we used it for certain reasons; we thought the labor force would have about 122 million people in it. Of the 122 million people, 14 per cent would have had only grade school education or less. 56 per cent would have had high school, would have had some high school education or would have completed high school, and about 30 per cent would have had 1 or more years of college.

8 folds

Then we said, supposing we take this population and say that the thing that is going to happen is that the survival rates of non-Whites are going to come to equal the survival rates of Whites. The impact of all social service programs is to give non-Whites the same life expectancy of Whites. So we will have 356 million instead of 354 million, but it does not change the picture much.

Then we said, suppose we gave non-Whites the same educational opportunity as you give Whites. What we said here--we discovered that the child of a woman who went to college had twice the opportunity of going to college as the child of a woman who went only to high school. And the child of a woman who had gone only to grade school had only 60 per cent the chance to go to college as the child of a woman who went to high school. We discovered that if you gave non-Whites about the same educa-

tional opportunities as Whites have--and this is also well within probability because the great impact since World War II has been to improve the educational opportunities of non-Whites in particular--you will find that instead of having a population of 354 million it will reduce the population slightly to 352 million, simply because the non-Whites will marry less soon and start producing families less soon.

Let me make a point here just as a digression. It is very easy for Americans to underestimate how great has been our educational achievements. At the present time a non-White high school graduate in the State of Mississippi has a better chance of going to college than a White high school graduate in Canada. Of course, the trick here is that the Colored boy or non-White boys get through school in Mississippi, but the fact is that the non-White in the United States has a far better chance if they finish high school, of going to college, than does any child in Canada or does any child in England or Wales. We have had a lot of problems we do not have to stress these, but the achievement is sometimes forgotten in face of the problems that exist.

Then we said, since we homogenize the races, the non-Whites being one group and the Whites the other, let us homogenize them with regard to fertility. For one reason or another non-Whites now have children at the same rates as Whites and we found the population was significantly reduced to 338 million. This is in an appendix in the same paper. Again, of course, all the re-

5 ductions will take place with regard to non-Whites. Then we said, suppose we maintain the difference in fertility and we assume for one reason or another--and I will defend this, not too well, but at considerable length. Let us assume that what we really aspire to is not to homogenize the fertility pattern of the two races so that the low-educated Whites have the same fertility rate as the high school educated whites. But let us say we can develop a program so that each of the low-educated groups, white on the one hand and non-white on the other hand, have the same fertility pattern as the most educated groups. That is to say, develop a program whereyou go to the white community and say simply, "This is how you can have the same number of children that your educated cousins have", and you go to the non-white community and say, "You want to have the same kind of program that your educated cousins have". There is reduction in population that is fantastic. It falls down to 314 million from 354 million. If you say it to them all, however, then take the educated white rate, and it will fall even lower, about to 308 million. In this sense, I think the family-planning program, particularly the development of more modern techniques of contraception may have new meaning, because it may be--and there is some evidence to this--that one of the reasons the difference exists is because the techniques of contraception used by educational groups carries considerably and simply it is a question of publicizing it to the less-educated groups the findings discovered by the more-educated

16 groups as to the success for the asthetic acceptability of different contraceptive techniques. This is the picture with the general population.

Now, let us look at the labor force. We would assume there would be 122 million people in the labor force inthe year 2000, assuming that things continued as they were in 1960. If you come to Row C you will note that the development of improved survival with regard to the non-white will increase the labor force by another million,to 123 million.

By the way, Row C says "Non-white equals white in survival". My secretary made that error. Now then we did the same thing with regard to education. Again you notice that you do not have much of a reduction inthe total size of the labor force. You did not have much of a reduction in the total size of the population. However, when you homogenize with regard to fertility you got that large reduction in terms of population from 384to 338 million, but you have a relatively small reduction in the labor force from 122 to 119 million, about a 3 million reduction. The reason is obvious. Let us say you started a program in 1960. It is not going to be until 1980 that you have any real feeling of a reduction of the labor force because there is a 20-year lag in the reduction of fertility and a reduction in labor force.

Now come to Row F. There you have reduced the population to 314 million and you have reduced the labor force only another 3 million. Finally you take what is, from the standpoint of the

17 population reduction, the most advantageous item. You reduced the population to 308 million and the labor force to 114 million. This is to me very frightening, because if you go back to the theme that I started with at the beginning of my talk, that one of the problems in terms of the relationship of population and economy is that there will be enough effective demand in the economy to provide economic opportunity--jobs, that is. What you are doing here is reducing the population tremendously, but you are not reducing the number of workers very much.

This point's clear? So, it is on this basis that I argue that the future, in terms of the United States, may be such that we do not want to reduce population growth too much. Because if we reduce it a great deal, what we will do, is reduce the effective demands on the economy tremendously without necessarily reducing the labor force very much.

Now, of course, by the year 2,020, the labor force will start to diminish, so you can figure from the historical standpoint there is only 20 or 30 years of violent unemployment. It will all work out in the end. But the problem is there.

The only other point I want to make before I leave this table is the question of the role of education in labor opportunity. At the present time about 32 per cent of the people in the labor force have had a grade school education or less. If we, under the best circumstances improve the education of the non-White, if we improve the fertility level up to the highest possible standard, we can cut this percentage from 32 per cent to 13 per-

cent. Now, in terms of the total size of the labor force, it would be about the same number of people who are only grade-school educated. These are people who are fine for gas station attendants and for some of the less complicated services like laundry workers and the like. We are still going to have one devil of a job providing enough work opportunity for them when there is such a large number of people with better education.

In other words, I am about at the end of my talk here, but I want to make the point very clear here--that the population problem is not a simple one. It is not always a problem of cutting down the rate of population growth. There are an awful lot of economic implications in certain kinds of countries if you do this. What I have suggested in the last point here is, there is a variation in the composition of the population, in regard to race, in regard to age and sex, but most of all in regard to education and its economic implication.

Now, the last point I want to make is what can be done in underdeveloped areas?

Well, this is something you know more about, I hope, than I do. I would say, however, there are certain things that historically seemed to have occurred when economies developed. It takes a while, but the birth rate begins to fall. The rate of population growth--even though life is lengthened, population growth rate begins to diminish. My impression is that these things are going to occur whether you have programs or whether

9 you have programs or whether you do not have programs. However, there is a lot that can be done within this framework and it seems to me from an economic standpoint, it is very important to stress them. Obviously, you want to make it possible for people who are having more children than they want, or who are having children earlier than they want to have fewer children or to have them later.

It seems to me this is the Taiwan study and the Korea study, which essentially shows, if you go into a community where there is a demand for slowing the birth rate, you do not really have to sell the program at all. It is sort of like the Salk vaccine. One tends to underestimate the demand rather than overestimate it.

Secondly, I think a great deal should be done, a great many studies should be made as to whether the approach in countries where there is not an immediate demand for family-planning, whether the question of lengthening the inter-generation period is not easier to swallow and more easily--to use a cultural phrase, "fold", than the argument of having fewer children. Since the argument lengthening inter-generation length is Professor Coale's of Princton and it is an idea which comes out of a very brilliant analytical mind, there is very little data on this. However, it seems to me we could run some relatively interesting studies about it. I have a graduate student writing on the American change, between generations. The American pattern is very peculiar because

the age of marriage in the United States now is earlier than the median age of any agricultural country in Europe, but this is a peculiar thing, and I have been trying to get data back into the 19th Century, if we can.

I think, thirdly, what you are undoubtedly doing, and must continue to do, is continue to stress the very high social cost of large families. Particularly families where the inter-generation period is short. Of course, what the Rockefeller Foundation and what the Ford Foundation has done in regard to policy questions, regarding making family-planning a real effective choice by subsidizing it or by subsidizing those who postpone families--I am much more personally attracted to the notion of not subsidizing a person for being married, but subsidizing a person who is going to postpone marriage.

I think it is easier. It is sort of this notion that I am sure I introduced as a pattern at Johns-Hopkins or Harvard University, to mention two good universities, where any graduate student who did not--was not--married, got an extra thousand dollars, or any student who had no child got an extra thousand dollars which he forfeited when his wife became pregnant. I think this would have a real effect on a family's size and I am not sure that a good case can be made of this. Where the community says to any male or female, "We are willing to subsidize your college tuition providing you do not have children, but if you do have children, we will withdraw the subsidity." This is not to me--it

is a more palitable policy program than Steve Enke's idea of giving anyone who gets sterilized money for his or her willingness to do so. In any case, it is just a question of how you subsidize, whether you subsidize one technique or another.

The other two things which we can do is--of course we can introduce, as we are doing, sort of middle class morality and attitude in underdeveloped countries. Part of this is an educational program, educating women as well as men. I think this program will have great effect on the economy and the population growth rate.

The last thing which I think we have to do--and this is a thing that I want to leave you with, and this will leave you with a question--how could you work this out? We have to recognize, when you introduce family planning into an economically-less-developed society, the group that will grab it faster, is the group that you probably least want to get it. Remember, This is a very important point. If you study economic development in most countries you are overwhelmed with the fact that the great shortage is not natural resources, but the great shortage is all the interpreneur.

If the interpreneur is the ambitious guy, he is ambitious for his country and he is ambitious for himself.

One of the troubles you run into, and it is sort of characterized by the impact of World War I on Great Britain when they killed off the officer class in the first three years of the

2 war, this presumably explained the decline of British industry subsequently. You have to be careful that the family-planning program is embraced by the people who ought to embrace it, and not simply by the group who, if they do embrace it, will show down the development of an interpreneurial group. My father, who is a professor, used to say, "The markings of a true professor are that if his wife waked him in the middle of the night he will talk for exactly 15 minutes before he want back to sleep." I have talked for 70 minutes or more, and I apologize for it.

If there are any questions, I will be happy to answer them.

DR. COBB: I would like to ask about the assumption on fertility made in the Pakistan projections.

MR. PERLMAN: This is written up in the report, and we took the fertility data as given us by the Bureau of the Census, Jim Brackett worked it out, and to put it candidly, this thing was a lot of fun. We took all the numbers that were given to us and said, "We are not experts in anything, so we ought to program this on the computer."

DR. COBB: As I remember, this was a reduction of fertility of about 30 per cent in about five years?

MR. PERLMAN: That is right.

DR. COBB: Which is a very extreme assumption.

DR. JESSUP: I would like to ask Carl Taylor to take on what I thought Mark said by the use of the "blame" on the

reduction in infant mortality for a lot of the problems in Brazil. Unless I am mistaken, Carl may have a response based on his recent paper on the effect on health population growth.

As I understand Mark, he said it was a helluva poor investment to put a nickel in infant mortality. He decided to prove there could be a less-constructive development.

MR. PERLMAN: What Phil has said represents essentially my view as an economist. I am also a schnizophrenic as any civilized human might be. I am also shocked when someone phrases what I think, as an economist, because I do not think the problem is that simple.

DR. TAYLOR: This is such a big subject I think it should be taken up over again after the conference. I was out of the room at the moment this came up so I am talking pretty much without knowing what I am talking against, except I do react immediately to the idea of blame being attached to any one aspect of this sort of analysis and especially the idea of infant mortality as it relates to its relationship to the total effect on population growth. I think my own--to summarize my reaction and then to promise to discuss it at length another occasion with this group--I would feel that the effect of infant mortality on population growth is clear. This is a democraphic fact. It is something we have to expect as something that will occur anyway, whether it is done to a health program or whether it occurs as a result of economic development.

4 On the other hand, I don't say that we have much of a prospect of doing anything about the birth rate until we do something about the infant mortality rate, and accept the fact that the teachings need to occur if we're to get the low-balanced demographic situation that goes with a development process. It seems to me our focus should be on accelerating the process to produce the balance, since, as far as I am concerned, the fall in the infant mortality is almost a prerequisite for any effect on the fertility rate.

So we should not concentrate on the blame in infant mortality fall, but concentrate on the fact that this is part of a process which is a necessary elementa and something which we should accelerate and use as a means of accelerating the fertility fall. That is the eventual goal that we are after.

DR. STEBBINS: There are a few other maternal and child health people here.

DR. HARPER: I agree with what Carl Taylor just said. I think even in Brazil it costs less to bury and bear a child than in this country. But there is an economic cost, and this cost of child-bearing that then dies rapidly must be put in this, I think.

DR. STEBBINS: Leona?

DR. TAEUBER: When I first discussed this with Father Hamilton he said I don't think the way to solve economic development is to leave the infant mortality rate the way it is.

MR. PERLMAN: I think I am entitled to say something on

25 this. What I really believe is that it is not always true that all of the things you want to do are semetric, and this is one of the great trageties in life, that some of the great things you want to do have some unpleasant characteristics too. I have felt when I talked to many MCH people that they really do not want to mention what is the unhealthy or unhappy side of a program which has many advantageous things. Itis in this thinking that I think the economists are so irritating. My personal forte is going into homes where people have just been hanged and talking about hemp rope. I have the uncanny knack of telling a joke at the wrong time. When I told a joke about a girl who got married in the eighth month of pregnancy, I discovered that the reason my hostess did not laugh is because her daughter was married the previous week under the same circumstances. This perplexes me. I think this is the problem with economists talking to public health people. What we economists say is many times particularly grading because it just runs contrary to the humanitarian or the moral fabric of this particular self-discipline. I think you are quite right in saying economists should not talk too much. It is not necessary to keep drumming on this point.

DR. TAUBER: I don't think this is what annoys a lot of MCH people. What has bothered us has been that economists have not been interested in looking at the whole health problem. They have not been interested in anything at all. They acted as if health was one of those humanitarian things, and maybe we should

k26 not talk about it. I think this is much more the feeling, if I may react as an MCH person--just as you react as an economist. What we have been saying is we would like jointly to look at these problems and know what the facts are. We think most of you are interested, and we are glad you are interested, in looking at economics both of the health and population problem. But I think--and maybe I am wrong--maybe we have not learned how to say it, but I think we have been unable in some way or other to get economists interested in the economics of many facets of the health programs.

I do not think we ought to have to do the economics of it, so I hink we are glad to have you come and do this.

There is one thing you did not discuss and that is any kind of an idea of the economics and family planning per se. The kind of thing Steve Enke did. In other words, is family-planning really an expensive thing.

MR. PERLMAN: The answer to that is, there are two economists who have worked on it. Steve Enke has had some ideas with regard to family planning, particularly in India. Steve has a good analytical mind. He also is a person with strong social policy views which many people find upsetting. I think that his concept of sterilization as the technique, or his concept of the subsidity program for sterilization--

DR. TAEUBER: I am talking about his recent study about what a dollar put into family-planning produces, versus a dollar

put into economic development.

MR. PERLMAN: That I got last week, and I am not going to comment on it. It looked to me very good when I read it, Paul Demange at Princeton has taken Ed Hoover's work on India as a doctoral dissertation and made some estimates as to what the optimum amounts of social drain investment for family-planning would be. This is the point at which the cost of the program would equal the benefits received from it. But beyond the work of Enke and Demange, I do not know of any work that has been done.

MR. BOGUE: The comment about the disugenic effect of family-planning in under-developed countries is one you hear often in the under-developed countries, and you state it exactly the way the people from the underdeveloped countries do state it.

We do not feel the wrong people will accept it first. Actually, the argument is just the reverse. The elite of all the underdeveloped countries now know family-planning. They have been educated in American univerisites and American cities. They take home huge supplies of contraceptive materials with them when they leave. They know how to get more through the American embassy or other devices, so that the worst possible ugenic effect is now in existence, and this is, instead of being a disadvantage, it is one of the strongest arguments for very quickly introducing family planning into the rest of the population, because at the present moment, the elite segment of these underdeveloped countries are not reproducing.

MR. PERLMAN: I think I would modify your comments in one sense, as to what I said. The elite concept is not a matter of genes. I think it is a matter of educational development. This is what has worried me. I am not worried about the disappearance of the pure Spanish type in Colombia, as much as I am concerned about whether, in point of fact, the development of a program will necessarily permeate to the group that needs it the most. I don't think anything I said was meant to suggest that the program should not be introduced because it will only have what you call a diseugenic effect. I would say there are diseugenic characteristics, where eugenics refers not to race or family but to educational development, which has to be kept in mind. And I think we are not far apart.

I would accept your statement if it is observably true that what you say about the population at the present time can be verified emparically.

DR. JESSUP: I would like to ask Bob Smith to take on something that Mark said that I did not think was true, that is, he was referring to the steel mill and how the perhaps less-developed countries don't believe that that is the best investment, and they should be more interested in the mind and in improving the average family standard of living. I get the impression that in AID that we are economizing along with the idea of the steel mill and Volkswagen plant, rather than trying to concentrate on the 80 per cent family standard of living. If I am wrong on this, I would like to be straightened out.

In brief, Mark said the steel mill is not the thing that we feel they should invest in, and we all agreed that they should not. I don't think that speaks for the economists in AID.

DR. BAUMGARTNER: I think you are wrong, Bruce. I think we have been much troubled by the steel mill as the showpiece for outward demonstration of economic development as compared to the comparative advantage of the same resource put into other types of investment activity.

The problem often is not a purely economic one but an econo-political one, of what a country is determined to have and whether outside assistance is going to end up being. Part of it, I think, is our whole pressure for self-help efforts on the part of countries which means not only how much they put in, as compared to how much we put in, but self-help as to planning of their economic development.

DR. JESSUP: My impression is that the economists in AID are really quite willing to admit that they have reduced their investment in health and cut down on technical assistance in health, specifically because of their concern and their feeling that this is compounding the population pressure problems. Would you comment on that?

DR. BAUMGARTNER: I think this goes back to a point made earlier too. Economists around AID have only gotten interested in doing something or taking account of health and population growth and limitation when they began to realize there was something that

could be done about it. It has really taken the last 2 or 3 years and an educational process of the economists to realize that population growth rate was not a fixed input, but could be varied depending on technology, on attitude changes and so on.

DR. TAEUBER: Wasn't that coupled with another factor, that actually most countries did not believe their GNP figures were much better than the five-year figures, in the growth rate. Also, I think that was at least two reasons. I think a third one was that they did not like the talk of the population explosion. There wouldn't be room enough to stand propaganda, so they did not listen to any population talk at all. But I think this question of how long a projection should be made is a relevant part of the answer.

DR. STEBBINS: I was thinking, something which affects AID is the attitude toward the gold drain and balance of payments. If you look at service organizations like Public Health, you see that a large percentage of these things are internal costs which are local currency requirements which in terms of a policy operation which we have to take into consideration, we're inclined to cover external resource requirements only. Technical assistance is generally an internal cost operation.

A second aspect too is that in terms of just magnitude of programs, in terms of dollars spent, you would find a large portion of course is in the capital assistance side because that is what the largest bulk is. But if you look in terms of the

manpower inputs, in terms of an AID mission overseas, you would find a segment is in the TC area. It is the burden of work, and the health area is one of those areas that would be operative too. I think the confusion may be one, on the policy of internal resource requirements, and secondly, on the confusion of effort by dollar size as opposed to manpower inputs.

FROM THE FLOOR: We have several people it seems from different missions that are beginning to get involved in different wide family-planning programs. I would hope some of them would comment on Mark's proposition, that one of the best ways to achieve the objective and lessen the strain on society is to lengthen this inter-generation period rather than limiting the size of the families. I wondered, in Pakistan and Turkey, for example whether this is being built into the program in a major way or whether there is any specific emphasis in any particular area?

DR. BERELSON: Most of it is on reducing the size of the family. Very little is on spacing. This is an attempt on marriage postponement, but at the moment, I don't think this has been given too much stress. There is a law--I think they raised the age of marriage--but in the educational program not too much is being done.

DR. STEBBINS: From 5 to 15 or something like that.

DR. BERELSON: 16.

DR. STEBBINS: Dr. Martin?

DR. MARTIN: They have not done anything in Pakistan

about changing the intergeneration interval. There has been discussion in the newspaper about trying to increase the age of marriage. Their experience is the people who will take up family-planning, are the ones who have 3 or 4 or 5 children. They are the ones who are willing to do this. They already have enough and do want any more.

They will try to shift this to the younger-age group, but at the beginning of the program, they feel it is easier to get the people who have already had the children.

FROM THE FLOOR: Has there been any emphasis put on spacing or later marriage?

Have we built this in as far as the input we are making?

MR. PERLMAN: We have not made any inputs.

FROM THE FLOOR: There has been a lot of discussion between American and Pakistans. How do we induce them to do this, through educational programs?

MR. PERLMAN: If you build in, as part of the educational effort--if it is just on--wait until you have all the children you want and then stop. This is one thing. And this has been the emphasis in India. But if you go to the delayed marriage, if you lengthen the educational time, put more emphasis on education--some of these other things that would tend to delay marriage--build some cotton factories so the girls can go to work.

DR. TAEUBER: I think all of ten years ago in India, they were talking about delaying marriage for women and getting them

jobs. How can you separate any one of these things from something else? I do think there is one new light on spacing though. That is something the UN mission in India emphasized particularly. That was the use of the IUD. Approximately 4 to 6 weeks after pregnancy, when you have a particularly susceptible woman, let us say, you tend to build in spacing with almost the first child automatically, so you do not have to talk about spacing. You just naturally say "Your time to have your loop is 4 to 6 weeks after you've had your baby" and then you begin to get a kind of spacing automatically.

I think this is much easier than attempting to tell Indians or a Pakistani woman, "You should not have any children until you are 25". I think you are wasting your breath doing that. I cannot imagine that would be acceptable.

DR. TAYLOR: I endorse that by one further comment. One of the things in India that was mostly identified with the British was the effort to raise the age of marriage. The Sarda Act, and so on, back through the history of India, back into very delicate religious and political issues, so that any talk by a foreigner at the present time in India about raising the age of marriage immediately begins to sound like the British colonials. I don't think--I know from my own experience in India--that this is one of the things that we are going to have to soft-pedal and bring up last as a reasonable approach. I specifically talked about this at great length with (?) . She was very eager to do this, as I am sure you remember, but even when she raised

the issue, it immediately began to move in the Hindu-political circles as people who were trying to impose the old colonial restrictions on the New India.

DR. TAEUBER: This is a generation away. It will come with education.

DR. HARPER: I would like to ask Dr. Perlman a question. Going back to this Child Health Services aspect. I wonder if you don't give maternal and child health services more credit than they deserve. ;I have the impression that the conventional mother and child health services concerned with improved nutrition and prenatal care and immunization, have had little to do with decreasing infant mortality in those countries. You do see them in the big cities, and, in some of the bigger towns, but you do not see them at all out of the country.

Malaria Control, improvement of water supply and sewage disposal does reduce infant mortality and significantly, and also increases the productivity of the working age group. In other words, the people in the producing group. And you are between the devil and the deep blue sea. You cannot get one without the other.

Until we can get a breakdown and look at these things piece by piece, I do not think it is safe to make generalizations. I think someone might comment on that.

FROM THE FLOOR: As a maternal child health person, I would like to take the economists view. I think this thing about modern methods in general having a great impact on infant mortality,

is subject to a lot of question, and I think that there is evidence that a lot of this is due to economic and broader improvements than the modern health improvements. Least of all the maternal and child health improvements which have had very little influence. This is maternal child health in a narrow contact. I think we could also take that maternal child health in a broader text and put the economists on our side, as well as the family-planner, and the people who are going to help us solve the birth control problems.

Just getting down to one specific example that will illustrate some of the economic thinking, I would like to talk about the fall in infant mortality in Ceylon. We have evidence this came about at the time when we had malaria control. But when ypu look at this closely you find that the large part of the fall in the infant mortality that has the most demographic significance occurred in the areas that had not had malaria.

This, I think, if you look at it even more closely, and you can only do thiscrudely, could be related probably to economic improvement.

I would give the people who are making economic improvements more credit and the fall in infant mortality, and I could also give further evidence to say that the people who are making general education improvements are the ones that are going to have a lot of influence in the fall in birth rates.

DR. STEBBINS: One of the countries in the developing problem is Turkey. Is there any comment on that?

36 FROM THE FLOOR: Turkey being on the bridge between Europe and Asia tends to lean to Europe, and in the urban elite, there is a movement toward early marriage. Traditionally a man did not really prepare for marriage until he had certain prerequisites. So you will find a 28, 30, or 32 year old man with a very young wife. More and more in Turkey we are seeing that young people are marrying. They are patterning it after the Westa and I have a strong feeling that despite this change, there is still a desire to have a son, because the philosophy of the son, in Turkey, is still there.

So that any way of trying to space births until the son comes is extremely difficult, although I agree with Dr. Baumgartner, now, since the pills are on sale and in all drug stores, and enjoying quite a buying spree, the younger people are still going to look for the son. But among the younger urban elite, once that a son appears even without the law being passed, there were steps being taken to stretch out the second child, and so forth, after that.

MR. PERLMAN: Your point should be clarified. It does not make much difference how old the father is. It is how old the mother is.

FROM THE FLOOR: I am only saying, you had before a condition where the father was older with less children. They simply waited. This is disappearing. In rural areas this is not true. True, you still have the older husband, and the younger

wife, but I would question whether you could build into the program in Turkey, anything on either the spacing or stopping young marriages. I think the trend is the other way, and they patterned themselves after the West.

DR. ROBINSON (Korea): In Korea, postponing marriages has become increasingly popular. It has become important in family-planning. Japan has very significant figures showing that 80 per cent of the conceptions of women under 20 are aborted. This is the group that wants to abort the babies. Korea and Japan and some of the Orients have pushed this later marriage.

DR. STEBBINS: I can't miss this opportunity to tangle with Mark Perlman. When you suggested reducing the stipend for graduate students you were really sabotaging this school.

MR. PERLMAN: That is the non-semitry of good things.

DR. STEBBINS: We will now adjourn for our luncheon break.

(Whereupon, the morning session was adjourned.)

- - -

MONDAY AFTERNOON SESSION

June 7, 1965

... The AID Conference reconvened at 2:00 p.m., in the Johns Hopkins School of Public Health Dr. Leona Baumgartner presiding. DR. BAUMGARTNER: We

DR. BAUMGARTNER: We have decided that you get tired of looking at Dr. Stebbins and me, so we are going to have to change the cast of characters. Dr. Derryberry is going to be the chairman for the first half of the afternoon.

We now have one thing we would like to do, if everybody is more or less here. Ordinarily I like to know a little bit before I do something that I am going to do it, so I can prepare. So, all I know is the easiest way out of this now is to say that I am the one to introduce the speaker and it is going to be Dr. Bogue.

I have now done so, and he will now do so. Dr. Bogue?

DR. BOGUE: The topic of the session this afternoon is "Developments in Family Planning" and, I have been delegated to talk about motivation as related to program design and implementation.

This calls for a shift from public health to sociology, so if I can try to present any points of view this afternoon, it will try to be that of the sociologist rather than that of the demographer. If you ask the question, "What are the prospects for doing something about motivating the world for family planning"; a sociologist looking at information now available, I think should

2 conclude that the results are excellent. This is in very strong contrast to the view that has existed for more than a century.

The results of recent experiments will show they are small -- not on a nationaal scale yet -- are now coming in. There are people in this room who are much more knowledgeable than I, including Dr. Derryberry, who would say that we now know enough to have reasonably good results almost anywhere so that in speaking before a group of AID and Government people, I think a sociologist should make the following basic principle, which I would like o to have as a topic of discussion, if there is any major disagreement about it.

This principle is, that at the present time there is no population anywhere in the world that is too illiterate, too steeped in tradition, or too backward to respond positively to a modern family planning program.

I think this is in sharp contrast to the pessimism that up until just a very few years ago was, that this should be the modern outlook. I think there are two corollaries to this principle. First, that everywhere the response to such a program will be sufficient in amount wo warrant the expenditure. Secondly, the more rural and more backward the people, the more important it is to start the program immediately because progress there will be slower.

Now this also is in very sharp contrast to the philosophy that has been popular. I think things are changing so rapidly you

cannot even hold the same person responsible for the attitudes and ideas he gives one year for what he will be thinking a few months later. For example, Dr. Berelson is presenting some points in this pamphlet that has been handed out in your materials. One of the points that he makes there is maybe there are some people that are not ready yet so you should start in the urban areas.

I am not sure that Barney feels that way anymore. Certainly I do not.

As a result of this principle and these two corollaries, it is my opinion that the U. S. AID program has an unparalleled opportunity to contribute to world progress through joining the private foundations and the other groups that have been working in this area. That the prospects are excellent. There is no population that can't benefit, from it and there is no population for which we need to say we have to wait a while before starting.

With such a rather strong assertion I think you deserve a little quick summary of some of the evidence upon which this is based. I will try to follow this with a very brief description of the kind of motivation program that might be successful from a sociological point of view. Here again I will defer to other people in this room who have had more experience than I, and I will end by saying what this might mean in terms of AID participation. And this I will say with the least confidence of all because I do not know the limits of policy and how you want to spend your energies in this area in comparison with other areas.

Before getting to you for the present situation and trying to make you think that the world population problem does not even exist, I should admit that at the present time there is no truly successful program now in operation anywhere in the world as a deliberately planned nationa program of fertility control.

Everyone of these programs, to the best of my knowledge, is stumbling along at a much slower pace than its friends and sponsors wish it were. Secondly, most of these resistances are institutional and bureaucratic; not from the people. The failure of these programs is more at the managerial and organizational level rather than from lack of response from the grassroots and the administrative details for making a national program work, in incorporating the results of these new experiments remained to be worked out.

If this is tree this also means that U. S. AID has a tremendous opportunity to make a contribution. That here we are gladly beginning to get the glimmerings of a breakthrough, of how to handle this problem which is of critical importance. And yet, nowhere in the world is this knowledge being applied in a systemmatic right-down-the-road rational way.

So if this is a mission of U. S. AID, to give help when we know something that needs to be distributed, this would be one field in which you could make a contribution. Especially since U. S. AID does work at the Bureaucratic institutional level where much of this resistance seems to be concentrated.

So that there is optimism on the one hand that it can be done, and pessimism on the other hand that we are failing, up to now, to utilize what we know. Much of this reason being because we notice it only recently.

Let's review very quickly some of the bases for this optimism. Why is it that we can say that the chances for conquering the population problem reasonably quickly are excellent. First, the motivational bases for fertility limitations already present everywhere in the world.

The public opinion holders or attitude survirors or whatever you wish to call them have performed this operation so often now that it has become monotonous. You march into an undeveloped population, ask questions that supposedly are not leading; "What do you regard as the ideal size of the family?"

The answer universally comes back that the typical couple in that afamily, couple in that country, desire significantly fewer children than they are having.

Now first we thought this was due to bias in our interviewing techniques or other hidden things, but it has happened so often and has failed to happen not once, that it suddenly or gradually as dawning on us that this is the case, that there is a strong motivational basis in these populations for family planning.

The people literally desire fewer children than they are having. In fact it is suddenly dawning on us that the answers that we get to this type of inquiry are biased because people

rationalize what they already have. So that people with four children tend to say that four is the ideal number. The younger people who have not had their families yet tend to give even smaller numbers than the current fertility rate.

Secondly, men as well as women give this response. Until quite recently the family planning movement was in the hands of suffragettes and other womens rights fanatics and they had built up popular image of the male as the kinds of beasts, the sexual beast that had to be satisfied, with absolutely no thought of the long run consequences, and the idea seemed to have escaped some of the early family planning movements, that the male was also a father and breadwinner and provider and the person who is socially and legally responsible for the total welfare of the family so that these surveys have shown that males as well as females want smaller families than they actually are having.

The enthusiasm for fertility control is less on the part of males than for females in many of these societies but it is not absent.

The basis for this popularity or this broad motivational basis for the adoption of family planning is not hard to find. The population explosion, or whatever you wish to call,it and its evil effects are manifest at the level of the family, not last.

It does not wait. The population pressure does not wait to be registered on some kind of a meeting in New Delhi or Djakarta or the capitol of one of these under developed countries

It registers itself first at the family level and at the village level and at the village level and gradually is manifest in the statistics of per capita real income or something like this.

So that subconsciously, unconsciously, the pressure that has been mounted -- death rates have fallen and birth rates have stayed high -- this pressure has manifested itself in maladjustment, discontent, and awareness that things were not right, within the individual family. So that it has become a matter of survival actually, in many of these rural areas.

These people may be uneducated, but they are not unintelligent, so that if you go into Latin America-sea places where the land has been subdivided and people are trying to live from cultivating 15 acres of land which can only grow wheat and they have to give one-third or one half to the landlord; it does not take a college degree for them to discover that if there is an additional member in the family, that the yield of the land will not allow them to eat satisfactorily during the coming year. So that the pressure of tradition and all of the things that we had thought -- and culture and religion -- all of the things we thought would be terrible barriers to ever getting poor and uneducated people to adopt family planning, seems to be crumbling as the pressure gets worse.

Also, this revolution in aspirations; the whole world has been fired by hope that they too will be able to share in the wealth of the technological revolution and this has crept into the back

woods and into the villages, so people who no longer hope for h themselves at least hope for their children and realize that fewer children given a better education, represents more progress than many children. This is not something that you found only in the drawing room of the upper class in these under-developed countries.

I think that it was mentioned this morning that we should try to get people in the under-developed countries to see this problem as a national problem and to participate in it for the nation's good. I think this is unnecessary. These people are experiencing this problem in a highly personal direct way and, although they will not quite comprehend the nation's good and the village good; the family good can be comprehended, and I think that the motivational basis is already there on this level.

I don't mean to maintain by this assertion that ever couple in every rural village in India or Pakistan is ready to accept family planning.

What I am asserting is that in every one of these villages there is a certain segment of people that is sensitized. It may be 10 percent. It may be 15 or 20 percent, but it is enough. So that no matter where you go in the world there is at least a part of the community that is ready. And the more rural and the more more backward the community, the longer it is going to take, so that we should get started everywhere at once.

Now to support this I will give you two small items of data, and I will put in a plug for a particular journal at the

same time. The Population Association of America Publishes a Journal called "Demography." The new issue of this journal is just now in press. The first article, the lead article in the Journal, when it comes out, will be called "Who are the Family Planners?" It is a study on people in East Pakistan.

As you know, East Pakistan is poorer than West Pakistan and if you searched around East Pakistan to find the nadir it would be not far from New Delhi. The Academy in Pakistan has been conducting experiments for family planning in rural villages in this area. They had a sample of 10 villages who have been participating in this program, and discovered that after two years they have not been using modern methods. They have been using methods that by current standards are rather primitive; the fuming tablet, vaginal tablet and the condom, which is supposed to be quite unacceptable to rural people.

Moreover they were selling these items rather than giving them away, forcing the villagers to pay for them.

Despite this the rate of adoption was quite high, and persistant, and this article then goes on to ask the question, "Who were these people?"

According to the traditional theory they should have been that segment of the village most educated, that on the land, and that segment of the village that had contacts with the outside world most often or was able to get away from the village culture.

Quite the reverse happened. The people who were the most

avid adopters and the most persistent users were those who were less literate, the landless and the poorest segment of the village.

Now this is the kind of thing that can happen when the level of life gets down to this survival basis.

The other item that I would like to present is a study that I participated in in Latin America, a little village of Colina, just a short distance from Santiago. We took a measurement of the birth rate and found that the average size of the family was almost eight children in this little agricultural town. We were using the area surrounding the village and we were systematically excluding anyone who owned land.

This was just a sample of tenants and farm day laborers. We discovered that in this little agricultural community over 80 percent of the couples had made efforts to practice contraception, despite any religious scruples or any other factors. These efforts of course were completely uneffective because the people had very little information. The methods they were using were folk methods of low effectiveness; and even such a simple and obvious thing as withdrawal, coitus interruptus was practices with amazingly high frequency in an effort to avoid conception.

When asked if they wanted to learn more about family planning the answer universally was yes, and there was a great dealy of anxiety to get started with it.

It makes the surveyor feel guilty to ask questions like this because they think this is an offer of assistance.

11 These are only two instances. Incidentally the Colina experience is also written up in this journal of demography, this next issue that is coming out. So I would like to emphasize that it is an universal fallacy to believe that rural folk are tradition bound, especially with respect to this population problem.

As we have discovered in mainland China, rural people can be just as revolutionary as urbanites in the modern scene. When you look at the reasons why they should have big families in these attitude surveys to try to assess the motives for having big families, you discover that they are rather diffuse, sentimental and rather weak and destined to become even weaker as time goes along.

Perhaps the most powerful one, aside from the need to have one sonein Asia, is the desire to be well taken care of in old age. And our attitude surveys in this area show that the villagers are losing faith in the ability of this system to work any more.

That the younger generation of children are more individualistic; their children are as poor as they are; so that having a big family is not a very good bet after all. And the idea that fewer children, better education is better security in old age is not at all a difficult idea to propagate.

So that this is the first point on the motivational basis. All of the major ingredients for success are there, and they are everywhere, no matter how poor or how illiterate the society.

The second point I would like to make is that motivating

the people is much easier than anyone thought it would be. This is a topic that defies many of the old and well established principles of mass communication. The well established principle upon which advertisers and businessmen in this country work is that you use mass advertising and if you can attract attention of one percent of the people you are doing well, and if you get 3 percent you are in clover and you hope this one percent or 3 percent that is sensitive will then talk about it to their colleagues, and through this, stimulating these very few people to spread the word, you will finally communicate with a much larger segment of the population. The first step is to reach a very tiny group of people who, because they are sensitive will spread the message on and provide the second step.

Everything that has been tried in mass communication with respect to family planning has discovered that in the first step the response is very great. You publish something about family planning and the readership, or the listenership is just fantastically greater than it is if you talk about cancer or diabetes or boiling water or many of these other health programs that have helped public health educators to become discouraged with respect to family planning or with respect to mass media. So that populations are very sensitive to this and the direct response is very great.

Secondly, the second stage is even greater than you could hope for with the two-step flow of influence. When people read

13 or see or hear something about this, they talk at a rate -- and I know of no comparable other area in mass communication that r reaches this fantastic level. We had thoughtttthat people would be shy, modest, that this would be something that even if you did manage to contact them, communicate with them, they would clam up and not continue the two-step flow of influence.

The exact opposite takes place,. It tends to behave more like rumor and flows wildly through the population at rates that you would not begin to think about if you were an outsider looking in.

Just as an example in Taiwan, Freedman and his group had a communication program with respect to family planning just inside the city. It was comprised mostly of social workers or nurses visiting in homes, but they did have a small mail campaign to people in the city. But within three weeks they were getting people traveling within 50 miles into a city, to try to get this service.

In Hong Kong the population council sponsored a minor program of providing coils on an experimental basis. It was just a small thing that was started in one clinic. A small note was put in a Chinese newspaper and the queue began to form at 7 o'clock the morning before the clinic was open and I think that the program wasout of supplies almost on the first day.

It could not have possibly been that many women reading the newspaper to get the word. It had to be a mass, private communication program. So that it is much easier to inform the

14 people about family planning than at first we thought. The first didirecon response is very great and the direct infusion from person to person communication is very great. As a result of this the job is much easier. There is no need to contact every household and sit down and try to counsel them into family planning. If

If you do every fifth household or every tenth -- I do not know the extraction -- and let good old-fashioned neighbor backyard fence do the rest, you can go farther, faster, with less money.

Another thing that we have discovered is that the opinion leader is of very minor importance in this particular area of communication. In other areas where they attempted to adopt a new practice or new idea, it was learned that if you want to make o the most mileage you would contact the people who were the natural leaders in this community and get them to adopt the practice or to sponsor it and this would cause it to spread more rapidly.

For example in getting farmers in Iowa to adopt feed corn it was discovered that once the biggest farmer in the area adopted it, all the little farmers would have quickly fall in line.

We have done so experiments in the slums in Chicago this opinion leader business and the Comilla experience in East Pakistan seems to bear out the same idea; that an informed person, rather than a leadership person is the one that is followed. So that any informed person who begins to talk is automatically a leader, almost by definition.

The idea that we had to somehow go searching through the villages to find the natural leaders and convert them to family

family planners and then it would spread, seems to be needless.

You can pick a group of couples at random, without reference to their leadership status, inform them, and on the law of probability you will get a certain percentage who will immediately take it upon themselves to become missionaries for the cause and spread the word among the villagers.

So that we can mass produce. We can mass produce opinion leaders by mass methods easily. We discovered in Chicago that even the ignorant will talk on books and will do this, that, and the other.

This constitutes a quick "Bird's eye view" of the empirical basis for this sociologist saying that the prospects for family planning are excellent.

Now the other two points I will go over quickly because there are other people here more knowledgeable than I. What kinds of programs are effective in making use of this methodology. I think the first slogan that AID should paste on its wall, if it is going into a population control program is "No missionaries allowed."

These things work and they work well when all of the steps, from information, recruitment of people, to the program and service, are carried out by the natives, so to speak. The more you can get done by the residents of the community itself, the better.

The less advisable the foreign motivator is, the better. So that any ideas of going in with sound trucks, with the American cab

eagle on the side -- I am saying this symbolically of course, in an effort to promote family planning - the less effective it will be.

The trick seems to be to do pretty much as they did in Comilla. They asked the villagers to appoint a leader from their village who would come to a central place and learn about this. It was usually a lead. Sometimes a midwife, sometimes the wife of one of the people who had risen quite rapidly in the cooperative movement that this organization was sponsoring.

But this lady took the supplies and the information back to the village and did the whole thing herself. And the program moved just as fast as the villagers were willing to move.

Another technique is to simply put information inthe hands of the few people that are literate. In Chicago we like to use booklets that are written in very simple language, that could be given to a school teacher or any literate person and helcan read and talk informally.

After this there is a problem of recruitment. There has to be person to person contact to get rapid effects and then there has to be a national or a high quality service program. I think in terms of U. S. AID operation, that this might mean that there could be a tremendous program of simply helping the country to inform itself about its population problem and the methods by which it might resolve it.

One of the first musts, I think, is a good demographic

analysis of that nation's present status. Almost all of these under-developed countries now have two censuses which are un-analyzed. So that the full implications of population growth in those countries, in terms of their own statistics and their own figures broken down into regions, individual cities and so forth, still has not been done.

So there is a tremendous demographic job of informing the country in detail about its population problem.

Secondly, a mass media program to inform the literate segments of the population what the various methods of birth control are and that are available, and the possibilities. By this I mean getting it into every village.

In India they recently had an experiment -- perhaps Dr. Derryberry can tell you more about it -- where they simply bundled up a little kit of mass communication stuff and shipped it off to villages to see what would happen.

This consisted of a few posters that could be put in public places, some little leaflets with picto-grams that would be useful for illiterate people, and then a little -- a little more ambitious booklet to be given to the school teachers and people who could read.

The impact to the village in setting the whole village afire to discuss the whole problem of population, family planning, birth control, seemed to be quite dramatic. In just a very short time entire villages were discussing the matter rather freely n

and openly, as a controversy to be sure, but with the ball, after the discussion, always tending -- as it does -- in the favor of contraception.

This type of aid then I think, -- first in getting the demographic facts out and available, and secondly getting knowledge; how to practice contraception, if you wish, getting this widely diffused and getting this process of discussion started, is somethig that can be done very quickly, very early and without too much apparent international interference.

Following this I think is this process of recruitment which gets into the kind of thing public health educators know a great deal about. We probably have the most, the best endowed schools of public health education in the world, and we have a wide variety of experience, furthered by AID assistants in training up large groups of people, either as students in this country or in special workshops abroad.

To help in this person to person type of contact, group dynamics training, is a contribution that could be made from the socialogical point of view.

Well, that is all I have to say from the point of view of the sociologist. I will end by simply repeating. In my opinion, the prospects for doing something dramatic and effective about this program are excellent. Many of the things that we know now we know only on the basis of very small experiments. It is

The process of finding out what this means, organizing

it into major programs, administering it in a wise fashion around the world so it has minimum political implications; I think could be undertaken with great success by a national organization such as AID.

The only word of advice I would give you is before you rush out, please look up the population council and the Ford Foundation who are in this business for several years and can give you a lot of words of wisdom on what to do and what not to do in this area.

DR. BAUMGARTNER: Thank you Dr. Bogue.

Now that you have heard Dr. Bogue, I will tell you, he is Professor of Sociology at the University of Chicago and we have worked together to several occasions, so I felt free to use the sort of informal introduction with him that I did.

I am sure, since it is all so easy, as he indicated to you that it is, that you will want to ask why is it that you are having, why you hare having problems or something of that kind. So are there some questions from the Floor?

Dr. Hudson;, Johns Hopkins. I don't know how I am going to say what I want to say with sufficient respect. I am an anthropologist and we are bound by different conventions, I guess. I feel to the confusion, and I am wondering if we have both been working in the same parts of the under-developed world, because if I read you right, there really is sort of no population that is unable to respond and if they are not they are of a bureau-

20 cratic kind and not a grassroots kind and by "grassroots" I imagine that you mean something that we speak of as cultural opposition, and so on. I am baffled, I really am. My experience has only been in Eastern and Northeastern Africa and perhaps among unrepresentative groups of tribal kinds the anthropologists are so fond of.

For eight years I have been living with people that I place a high importance on fertility. These are people, however many children they have, they they would like more. They propose to have more, and they are doing a very good bjob of having more.

I think you know that one then has to say, they do this in the context of say, infant mortalities, in regional 50 percent, between zero and two and so on. But basically, these are societies that, if they want any big people, they have to continue to produce little people at a phenomenal rate. So then really what I am trying to do, I think, is to call for responses in the hope that some of them will indicate that I have not been living in a peculiar limbo of my own all this time; where I have been seeing societies where there is every specific desire for maximum fertility, where cultural and social institutions exist to promote maximum fertility; where even though one can get enthusiastic responses of a bureaucratic kind, that perhaps it would be a good idea to have family planning -- this really is not going on at the "grassroots."

Now, let me say I can see readily that whatever people's educational level, they are capable of rational action, so if you

21 are given an expanding population firmly affixed to a land of visibly delinquent resources, then people themselves, as you say, without benefit of a college degree, are going to work out the m implication for them, and by whatever means, do something about it.

But I don't know how typical such a situation is of he the under-developed areas in general. And, I still am stuck, I suppose, with a simple-minded empirical anthropologist's view that the population problem does not exist in fact. It would be serious if it did.

One is still stuck with a large number of particular population problems in particular areas that have to be approached in particular ways. I make this plea not just because there are a large number of anthropologists that are supported by a particular scheme and if it turns out there is no problem at all, we will all be out of a job, but because that has been my experience over several years and I am baffled to see how such a kind of polarity of w views could arise.

DR. BOGUE: I have not worked in Africa so in making this rather broad sweeping statement I was including Africa without having actually worked there. I would still suspect that the r groups that you are discussing are the atypical rather than the typical under-developed group; that the typical under-developed population of the world is one which has reached the end of its resources or is rapidly approaching it. Where death rates have been conquered so that 50 percent or 20 percent of the infants

don't die in the first year of age; so that the group is experiencing a very rapid population rise where programs of natural development have led the people to hope for something better for themselves.

I think that the picture that I am painting of the under-developed situation of the under-developed world represents in itself 100 percent -- maybe 90 or 80 -- but it is the typical, and the thing that you are saying is the atypical situation in the world. I think in most of Latin America it is only a myth that there is a frontier. Much of Latin America has been agriculturally over-occupied, as in Northeastern Brazil, where the migrants rushed out and discovered there was not enough water to grow crops and so was the process of farm consolidation and back movement had.

I think in the cities of Africa the picture that I have painted in the areas that are undergoing economic expansion, this might probably be true. But I believe certainly from much, if not all of Asia and of Africa at least, that the picture I paint is essentially correct.

DR. ROSA: I did not understand how far along you have gotten in Comilla. Have you done some assessments there on how much influence on fertility has ruled?

DR. BOGUE: One of the problems of this experiment is to measure the impact on the birth rate. Birth statistics are no good, unusable, the official ones. So that the only way that I can assess how effective a program has been in terms of measuring the decline on the birth rate is to yourself personally go out and

23 measure the birth rate before the experiment, and go out, you yourself, and measure it personally after the experiment.

The only way you can do this is to set up your own birth registration system and it has proven very difficult to do a lot better than the official systems. We have come to the point where we can do reasonably well. The Comilla situation is one like so many of these others, where you have to say, "Among the people who took this, adopted this method and used it for "X" number of months, the conception rate is thus and so. Among the general population the conception rate is thus and so."

In Comilla, among the group who had ever adopted it, even those who dropped out, but of the group of women who had ever adopted it, the conception rate was around 20 per thousand years of exposure -- per 100 years of exposure -- and it is well above 70 in the regular population. So that you can say that among the people who adopted, conception was significantly lowered; but when you get down to the claim, "Did you or did you not lower the birth rate," it is very hard to make this test because it is hard to measure the birth rate in such populations where there is such low literacy.

I was talking earlier about the situation in Korea and they are inquiring there. They have not yet been able, in spite of a massive program, to be able to tell from the official statistics that the birth rate has been lowered, but this is a dish of the statistics rather than dish in the experiment.

DR. WRIGHT: In agreement with Dr. Hudson, I would say that with what little evidence we have, and it is very little, we tend to support what Dr. Dyson Hudson said as far as Africa is concerned. In Laos, which is the largest, has the largest native population of any site in Africa, there has been a family planning clinic for four years. One, we now have four in the last six months. But we had one for four years, and in those four years, the total attendance for the whole four years was 385 people.

Now, this would certainly indicate to me -- this was without any advertising at all -- but it would indicate there is not much of a chain reaction going on there yet.

DR. BAUMGARTNER: What about your four clinics? What is ahappening there?

DR. BOGUE: I think we are going to tend toward the pattern you have outlined for the rest of the world. But these clinics are so new that I cannot give you any figures on what has happened except that we have people in all of them.

DR. DERRYBERRY: One more question.

FROM THE FLOOR: I just wanted to comment on the Comilla project. I want to share the optimism. I like what is going on there is simply not putting family planning into an otherwise unchanged population group. This is an area where many other changes are being brought about.

In West Pakistan which is very different from East Pakistan, in the project we were working on there, the pregnancy

rate of those using the foam method was 110 per 100 woman years of exposure for, for what it is worth. I don't know if that is because they were not using it right or what, but it may be that you need something more than just presenting people with the method and the information about it. And I think maybe what is going on in Comilla in terms of community development is basic and essential to the success they have had there, which I think this point to, needs to be studied from a sociological-anthropolotical standpoint.

DR. DERRYBERRY: Since the sociologists have been so good in getting motivation for people tp practice family planning, and the problems rest with the administrators, could they now turn their research to finding out how to change the administrators and the next time we meet I hope they will give us a prescription for that.

Thank you very much.

DR. BAUMGARTNER: The next three people involved are going to be from the Population Council. I think there is probably nobody in this room who knows as much about this subject, for as long a time, as Dr. Balfour and it gives me a great deal of pleasure to call on Dr. Marshall Balfour , who for many years, was on the Rockefeller Foundation staff in Asia and then he came to the Population Council. We are going to get down to what some of us think of some of the nuts and bolts of population programs for the rest of the afternoon.

26 Dr. Balfour?

DR. BALFOUR: I have had three minutes of warning that I was to be drafted as chairman at this point and mostly to perform the function of introducing the next two speakers who I am happy to say are my esteemed colleagues in the Population Council.

We now move to consideration of methods of contraception and Dr. Segal who is the director of the Biomedical Division of the Population Council. He will be the first speaker.

I dare say, many of you know as much about Dr. Segal as I do. I have heard Dr. Segal speak on many occasions and as you will discover he is one of the most well-informed persons in the area of research on reproductive physiology.

I don't know whether this title is appropriate for what he will say, but I believe he is going to talk about new developments in contraceptive work and he will take it up from there, and let us hear from him now.

DR. SEGAL: Leona, I can't help think that if we are down to the nuts and bolts, and if "Bal" is the bolt, I am the nut.

I would like to retain a certain degree of informality in this ession because it is a subject that lends itself best, I think, to a response in questions and answers. I am sure all of you had had questions about contraceptives; how they work, which are better and so on, and I would like to have most of the information

come out of an exchange of that sort.

But for a start let me say that I will outline briefly the background to where we now stand in methodology.

There have been some historical events. At a cocktail party this week end I mentioned I was coming to Washington, someone said, "What are you coming for?" I tried to explain what this is all about, and my friend said, "Those people from AID are coming from all over the world to talk about contraceptives?" And I said, "Yes, a bunch of dirty old men."

Actually I think it is important to know what methodologic developments have occurred, because in my judgment wone of the bases for the kinds of optimism Don Bogue spoke about is that the kind of methodology is different now than it was ten years ago certainly, and even within the last few years. This kind of optimism one hears all over.

You go into a national family planning program, you go to India, and the same people who three or four years ago were just going through the motion of whatever the Govermment told them to do because they did not have any confidence in what they were doing, now are smiling and moving with more vigor and they think something can happen, because they now feel they have a method in hand that can make a family planning program work.

Now, historically, and I mean really historically, back to antiquity, man has known how to prevent birth, and almost all of the methods were based on the very simple and direct

28 principle that if you stop the sperm from meeting the egg, you have achieved your goal. This does not take a great deal of knowledge about physiology. It does not take a great deal of knowledge about the reproductive process. For generations no real intellectual advnace in contraception took place, and with due respect to those who developed even such modern innovations as foaming tablets or aerosol foams, and so on, these procedures really are based on this simple antique concept, that if you prevent the sperm from meeting the egg, this is contraception.

Since such a method was required, there were certain things that you had to accept. One was that the method could not be disassociated from the coital act. Secondly, that whatever you do requires continuous motivation and continuous repeated use.

You have to do something over and over and over again. You have to use supplies over and over and over again. You have to make sure that the channels for distribution are kept open so that they can be replenished over and over again and so on.

So really it is quite a complicated legal problem, for any country, whether it be an official program or not, to keep open the supply channels so people continuing a continuous use method will be able to continue to use the method successfully.

One thing about contraception is that it is not like

horseshoes. Close does not count. You really have to use the method.

In the last ten years, two very important developments have occurred. One has been the development of an oral pill for contraceptive purposes, which for the first time begins to invoke some of modern medical advances in developing a contraceptive methodology. For the first time the birth control engineers you might call them, looked toward the findings of the basic laboratories, invoked some of the principles of endocrinology and said, "Now we have a new way of getting at this matter of stopping pregnancy. If we can prevent the egg from being released and at the same time do this without causing any serious damages or side effects in the woman, this would be a new principle that goes one step beyond the age-old process of preventing egg and sperm from meeting."

And the oral pills work in that fashion. They were developed in about 1955 and very simply the procedure is something like this.

At the base of the brain is a small gland called the pituitary. The normal woman produces hormones which abbreviated are FSH and LH, which act on the ovary and they must act on the ovary in order for this normal cycle to occur to cause the development and release of an egg; this egg is eventually picked up in the Fallopian tube where it is fertilized.

This is the norm cycle. In every woman every month this preparation for pregnancy occurs. The pituitary releases

30 the hormones. The hormones act on the ovary, the ovary releases an egg, the egg is fertilized in the Fallopian tube and eventually make its way down.

The way the pills work is to prevent the production and release of these hormones. Now once that happens at the pituitary level, the egg can no longer be developed in the ovary and therefore it is not released. So every month the woman's norm physiology goes on but she does not have an egg produced, obviously, no egg, no pregnancy.

There are some other aspects to the pill which makes this thing possible, but I do not think we need to go into this now unless you have some specific questions.

Now as I said, this represented a dramatic and very important breakthrough. It was the first time that one was able to invoke a physiologic principle other than preventing sperm from meeting egg in order to effect contraception.

Now in the developed parts of the world there was a immediate acceptance of this method and in fact in the United States today, more women it is estimated, are using this kind of contraception than all others combined. I would be hard put to doubt this.

This is data that one gets from drug company reports and I think if it is not true, it is almost true. There are millions of women using oral progestins as they are called, for contraception in the U. S. The intake has been equally dramatic in

England and Austria and also in Canada. Western Europe has been slower in adopting the method but the important point, now that we have complimented the method -- all I can do is to point out that I know of no place in the under developed or developing regions of the workd where oral progestins in spite of their historic importance, have had any impact whatsoever in contraception.

There are a number of reasons, but irrespective of the reasons the fact is true. My colleagues in the drug industry say that if the Indian Bureaucracy was a little faster in getting unwound, maybe India would be using oral contraceptives today.

I doubt it but even if that is the case, the fact is that is Indian, and that is the way the situation is.

The pills are expensive. For a country like India they require -- the purchase of the pills require foreign exchange -- so to begin with there are complications.

Now, in addition to the expenses and the complication of importation, there is the very practical complication of use. Until now, methods of contraception, based on these oral pills require almost daily pill ingestion.

If the method is not used faithfully, as soon as some pills are missed, every month there is going to be a gradual loss in the effectiveness of the method. Once one begins to miss as many as five pills out of the month's cycle, the effectiveness

is down to be four or five pregnancies per hundred years of use which is a far cry from the near perfect safety that can be obtained when the use is 100 percent.

Now, about 1963 I guess it was -- excuse me -- about 1961 there developed a new interest in a completely different type of contraception that is hard to call new. It is a very historical method. This is intra-uterine contraception. There have been reports on the use of intra-uterine devices to prevent pregnancy for decades and decades, perhaps even over a century.

But serious reports in the medical literature gone back perhaps three decades.

Back in the 1930's a German obstetrician named Grafenberg published very extensively on the use of a silver ring for contraceptive purposes. But for a variety of reasons the method was abandoned just before the war and there was no rumored interest in the method until as I say, about the early 1960's or late 1950's at the earliest.

There were a few reasons why all historical events lead to a renewal of interest in intra-uterine contraception about thatttime. Perhaps one of the most important developments was that we were now in an antibiotic era so that people, obstetricians, physicians in general were a little less traumatized in the face of infection than they were 30 years ago.

Secondly there developed a whole new field in medicine and that is the development of plastic prosthetic devices and their

33 use in medicine. People suddenly realized that you could put plastic heart valves or artificial blood vessels into patients and this was not disastrous; skull caps and all sorts of prosthetic devices, which violated what had been an old principle of information of foreign body reaction.

This was suddenly new in medicine and it made people willing to experiment once again with contraceptives made of inner plastics that could be used as were the old metal rings.

Thirdly, a very important principle evolved that helped to reawaken this interest in intra-uterine contraception and that is the realization that it would be possible, with these plastic devices, to invade the uterus through the cervix without a serious dilation of the cervix. This could be done in parents, women who have had children, without any cervical dilation at all, by using a thin plastic straw-like inserter.

An obstetrician or gynecologist could insert this as quickly as he could do a uterine sounding and the whole insertion procedure could be much simplified over what had been true back in the old Grafenberg ring days when dilation of the cervix was necessary.

Now with these three facts developing and serving as the background, extensive testing was undertaken within the last five or six years on these new intra-uterine contraceptive devices. I think by now you have all heard of the new dramatic suggestion that has resulted.

34 Let me just briefly review a few of the salient features, but it will be repetition for so many of you that I am not going to give a 30-minute talk on intra-uterine devices.

First, the effectiveness at best, it can give a life of effectiveness that far exceeds all of the classical methods except of oral pills. The effectiveness is somewhere in the range of one to two pregnancies per 100 women years of exposure.

This is a very effective kind of contraception if you don't know what it means in practical terms, one of the demographers for statisticians will explain it to you, but it means something like 100 women for one year, only 1.2 of them will get pregnant.

Now the point is, this is extremely effective. Continuance of use; let me try to describe this in a kind of a capsule form instead of the broad statistics. While I was in India Dr. Scutham was there too from the obstetrics department at Columbia. We started a little project for our own information. These were all women who lived on the compound in Delhi. They were not rural women, far away and hard to reach. None of them was more than a stone's throw away from the clinic.

One hundred were given oral pills free and one hundred started on intra-uterine devices. At the end of the year 82 of the women on devices were continuing to use the devices, effectively of course, and only 12 of our pill users were still around.

We did not make an effort to find them. We wanted to know how many of the women really continued to use the method.

So that 82 percent of the coil users were continuing to use the method for a full year. Now this happened to be a little higher than what is now in the global experience proving to be the reliable figure one can count on. It turns out that if you start a massive number of women on this method you can expect somewhere between 75 and 80 percent of them to continue to be using the method at the ends of the year.

This experience is based on over 20,000 women studied in a cooperative statistical study here in the United States. There are similar data from Korea and from Taiwan. The Taiwan figure for the first year is somewhat lower than the 75 percent I mentioned but there are special reasons for that that I need not go into.

I think it is safe to say and safe for you to say in discussing intra-uterine devices that three out of four women will continue to use the method for at least a year.

Now, what happens to those who cannot use the method? About 10 percent will involuntarily extrude the device. No matter who puts it in and how far up you put it in, it will just come out.

Another 12 percent or so will have symptoms which would lead either the woman or the doctor to wish to remove the device. That is pain, cramping, or continuous bleeding. But don't get the image of a woman bleeding out in front of your eyes. I don't know of any such case yet. But bleeding means a continuous flow

36 from the uterus which requires use of pads or rags, day after day, if that is the procedure used in the country involved, until there is a concern on the part of the woman or on the part of the midwife or on the part of the doctor and the device has to be removed.

Then of course there are the few who become pregnant. But if you add all of these up you end up then with the expectation of somewhere between 65 and 80 percent continuing to use the method with protection for at least a one-year period.

The device does not have to be removed after a year. It can be left in place, as far as we now know, indefinitely There are women wearing Lipus loops, one of the forms used most widely for as long as eight years, now and these women are being continued under observation.

Now I will answer any questions about the devices that come up, but let me point out before passing from discussion of the devices, some of the advantages and some of the disadvantages that we have to keep in mind.

It is a one-time only method. It is inserted once and for those who can use it effectively, there is no additional motivation requirement in a sense.

As a matter of fact, the picture is now completely reversed. Now if the woman wants to have a child she has to do something positive. She has to go to a doctor or herself decide to remove this device.

It has a little coil coming out of the cervix and it can be removed.

Now you have a large group of women who will not have a baby unless she herself decides to do something positive to change this state of affairs, as opposed to the usual situation where you have to do something positive to not have a baby. So that this is a great advantage in my thinking. The other advantage is that it removes the act of contraception from the coital act.

The couple has to do nothing at the time of coitus, nothing extra-curricular that is in order to effect their contraception.

Now, the method has a couple of additional advantages obviously. One is that at least until now it is a very much doctor-involved method of contraception. This I think has two edges to this. The fact that a doctor is more involved I think is good as well as bad. This means of course that there may be a limitation in any particular country with respect to how much this kind of contraception could be introduced because of the limitation, based on available medical care.

Now this is terribly exaggerated at first blush. When one looks at it one thinks a doctor has to put these devices in and these countries have hardly any doctors. It is not all that time-consuming a job. The real job is to have the woman motivated, prepared, ready, organized -- the administrative problems that

38 Don Bogue talked about.

Once you have done this foot work I submit that you will never have a bottleneck resulting from a shortage of doctors. I think this can be overcome in any country.

You can calculate -- and I won't do it for you -- that one doctor can do 100 insertions a day without any problem at all, if everything is organized properly, so that a task force of 100 or 500 or 1,000 doctors can make a considerable impact. I am not being naive about the question of "How do you get the hundred women at any one place at one time," but I am taking it for granted, you understand, this is the real problem. If you do that, then you will have the doctors to make the insertions.

Now the other, the real medical difficulty, the real medical problem with this method, I believe, is not the question of having doctors to do the insertions; its having medical care of some sort for the post insertion, the follow up care of these women. There are, as I indicated, some complications which lead to or should lead to removal. Someone has to make that decision.

Someone has to tell women "X" that she had better have this device removed or better yet, remove the damn device and if the midwife can do this, then I think the method has a long way to go, even in rural situations.

If the midwife cannot be trained to do this, then some alternative plan has to be worked out. Fortunately now, in in many countries, that problem of "How do you use this method

39 in rural situations," keeping in account the need for medical follow-up, is now playing a role as one of the key research topics in family planning. In Egypt, in India, in Tunisia, in Turkey, little pilot projects have evolved to try to work out the best kinds of major plan for introducing this method into rural areas, keeping in account the need for medical follow-up of insertion.

In those countries where there are now hundreds of thousands of insertions or over 100,000 insertions, like Korea and in Taiwan, there is now a certain amount of backtracking going on and people are getting in there and trying to figure out how can the medical back-stopping best be remedied. It might be worthwhile to point out however that even in these countries which are in the over the hundred thousand hurdle as far as insertions are concerned, where things went rapidly without a great deal of attention to medical follow-up, I know of no real disasters that have occurred. Maybe there have been some bad situations develop but they have not been reported, but it certainly has not been epidemic in proportion.

Now, after this enthusiastic burst about intra-uterine contraception let me hasten to add I hope this method will be archaic in ten years. I hope we will develop better ones. Certainly there is a great need for better methodology even allowing for the terrific advantages of the intra-uterine contraceptive device.

First it is obvious that you have 25 percent of potential

40 users unable to use this method. I think that is a motive in itself for additional research toward better methodology. Secondly, I have talked lightly to about 100 women, to women at a given time, yet we know very little about what percentage of the total potential acceptors will really accept this method.

There is certainly a significant percentage of women who just will turn their back to method of this type which involves a doctor doing something that seems like an operation, even though it is not, and involves the use of a foreign body internally.

I cannot tell you what percentage of Moslem women, for example, may be unwilling to use this method or what percentage of tribe women in sub-Sahara Africa might be, for some anthropological cause or another.

I think there needs to be some research to try to work out these figures, but I feel safe to say, even before this work has been done, that we will find a very significant percentage of women in almost every cultural situation for whom the presently available methods have some shortcomings.

The need for adding additional methodology is, to me, very self-evident. Now what prospects do we have for additional methodology? There are various procedures now at the laboratory level of investigation, any one of which may become available for clinical use almost immediately. Probably the most advanced type of research is with slightly different types of use for the oral progestins which are involved here.

41 The oral progestins, the compounds used for the suppression of ovulation, are now being used in a slightly different way, and I think in a terribly interesting manner. In order to effect suppression of ovulation with oral progestins most of the compounds used require a dose of five milligrams or 2.5. Five milligrams or two. Five milligrams depending on the commercial preparation-but it is up in this magnitude. Now people are beginning to use 250 micrograms or that would be something like .25 milligrams.

It is a whole different magnitude. It is one-tenth the doses that have been currently used. They are using this level of the compound, the same compound, and continuously, not just 20 days, but start and just keep going, in a sort of homeopathic prescription that is to give a very low dose of a natural compound or almost natural compound. It

It does not bluntly change the physiologic pattern, as occurs here, but it just throws things out of sequence slightly. The exact mechanism by which this does of an oral progestin is effective as an anti-fertility agent is not yet clear, but it apparently is effective and I can make several suggestions as to why it might work. And it eliminates a disadvantage, a disadvantage, that most of you will be facing in your countries; that is the medical profession still gest a little horrified at the thought of high doses of high steroid compounds to suppress ovulation.

The extent of horror is probably proportionate to the

42 size of the dose. So you lower the dose and people are not ui quite as horrified, and I think you would get greater medical acceptance and therefore greater willingness to use a method of this sort.

It is still experimental and I expect we will see the rapidlpromotion of a method of oral progestins, a low dose oral progestin method within the next few years.

It will probably be used first in the urban areas n and in the western world. How would it work? One suggestion is that it would change the nature of the cervical mucous in such a fashion as to make the cervical mucous impenetrable to sperm. This is an easy thing to test, research-wise, and I think we will know in a month or two if this is the case.

You simply look for sperm up here, in the Fallopian tube in women and see if the sperm have actually penetrated. This type of work is actually going on now in various centers I am aware of.

Another possibility, and one incidentally which I think the laboratory work bears out as being the more likely, is that a low dose of progestin of this sort alters the endocrine balance controls the rate at which ova pass through the fallopian tube.

Ordinarly when the egg leaves the ovary and makes its way to the uterus, it takes about four days for it to pass throught the fallopian tube. It is during this four-day period, usually very early within the first 18 hours, that fertilization takes place.

43 It takes four days to make its way down through the tube. In the meantime down in the uterus itself all kinds of changes are taking place, so that the timing is just right.

When the egg gets down after four days, the uterus has been under a whole barrage of endocrine influence for four days and the synchrony is perfect and the fertilized egg can implant. If for any reason that egg swims down much more rapidly than normal and gets to the uterus a day or two days early, t it is not going to implant.

You can be certain of that. The preparation of the endometrium of the wall of the uterus is not right and this will be an infertile cycle even if fertilization took place up here at the beginning.

Now it is possible that a small dose of progestin would have this effect on tubal transport. We know that it happens in laboratory animals. While I am mentioning this, let me add that the current work on mechanism of action of the intra-uterine device favors this possible mechanism.

The intra-uterine device does not act as a barrier to sperm penetration. We know very well when a woman is wearing an intra-uterine device, she has her natural coitus, intercourse, and the sperm penetrate and reach the fallopian tube normally, in non normal numbers and morphologically they appear normal.

Now, we don't know if fertilization takes place. We will find out soon. There are lots of experiments in humans now

underway trying to answer that critical question. It certainly is critical for a Catholic region of the world.

Does fertilization actually take place? No one can yet say that it does, anymore than we can say it does not. There is just no evidence. It remains an open question.

stein
c-1

notes
7

DR. SEGAL: (continuing) Now, the next question is if the egg is fertilized, or if the egg is not fertilized, does it pass normally, at a normal rate of speed through the fallopian tube. Now about this question we have some evidence that is derived from Rhesus monkeys. In the case of the Rhesus monkey, it is certain that the presence of the inter-uterine device in the uterus hastens the passage of ova through the Fallopian tube. Such experiments are difficult to repeat in humans, but there are attempts now to repeat them. I know of one very important investigation. In the human, you cannot tell how long it takes the egg to go through without doing some rather unethical experiments, but we could find out how long it takes something else to get through the tube. One experiment that is being done is the insertion of starch granules in the cul de sac or into the abdominal cavity. There one places starch granules. Eventually these granules will make their way into the open end of the woman's fallopian tube and eventually find their way into the cervix and the vagina.

Starch, fortunately, is something that is very easy to use for a color test. We can use the sort of test used to test urine for diabetis, and you can tell how long it takes for this starch to make the passage through the fallopian tube. This is a method now being used to test the rate of speed of passage of substances through the fallopian tube in cases of women wearing intra-uterine devices.

Now, briefly, three or four other types of experiments are underway toward the development of new methods, such as the development of a possible innoculation--innoculation, meaning to prevent pregnancy. This is at the laboratory stage. All I can tell you without going into too lengthy detail is that it is possible in animals. In fact, it has been done. You can prevent sperm-production in males completely. You can seriously limit the fertility of females if not obliterate it completely, in guinea pigs, rats and rabbits, that is.

The principles upon which this type of work is based, would apply also to the human. However, I would say, considering the present state of this work there is no prospect of even a serious extensive clinical study before three years. There may be some very carefully-controlled probing trials in a shorter period of time, but this would be nothing concerning a national program. This would be one medical center taking a half dozen cases and watching them very carefully. Something like that. The use of the same type of oral progestins which I mentioned, again as injectables has recently been suggested. In fact, it has been tested up in Boston, and they work as anyone would have guessed they would. How great an advantage this is over the oral pill remains to be seen. My personal opinion is that it is not much of an advantage, that as long as you still have to have your patient come back every month or every three months for an injection, you have not taken an important step forward.

However, you may expect to hear more about that, and I am sure you will read a lot about it in the Wall Street Journal. Now, there is another area of research that should be reviewed from time to time, and this is the question of the use of indigenous plant products for fertility control. One hears all sorts of reports about how the Bombay water has a secret anti-fertility agent. All one has to do is extract it and the answer is there. The Navajo Indians of our great West had a plant. There was a pea extract from India. The pine needle of the Ponderosa pine is supposed to have an anti-fertility agent in it, and so, on and on. It may well be that this will produce a new source of anti-fertility therapeudic agents, and although I may sound a little sarcastic about the work, I don't really mean to. I think this kind of work should be much encouraged, because if for no other reason, it prevents a stirring up of a lot of political problems in a given country. There will always be legislators who will stand up in Parliament and say, "Why are we using this evil machinery of the white Devil when we can extract our own pine needles for an anti-fertility agent, and we ought to have more research on indigenous plant products." I think that research is great and we should have some people doing it sometime or other so you can answer the question properly in Parliament.

Now, I think there is another item, and I will be serious about it. I think there is another reason for this

type of work going on in many countries. It is a natural kind of involving of scientists in an anti-fertility work. This involvement is, in my judgement a very important factor. I think that AID should not overlook the importance of involving the medical and scientific communities of all countries in the research development toward new contraceptive agents. I think that the involvement of a country's scientific personnel will greatly hasten the time required to introduce any new methods in a country. The fact that a country like India and Pakistan too to a certain extent--if these countries were not involved in the early development of the oral progestins it would have resulted in at least a five-year delay before they were even tested. In India they are still being tested and not used. The fact that these same countries were involved in the early development and testing of intra-uterine devices, hastened very much, in my opinion, the time when the decision was taken to adopt these methods.

I think that--if I can cite India as an example, that there was probably no better development in our family planning program than the creation of some groups of people who could do some of the work on intra-uterine contraception in the early days. It meant it took only two and one-half years for India to test the method and have a meeting of the Research Council, which got up and said yes, this is a safe, acceptable method. "The Government is advised to use it in the family-planning program."

I dread to think how long this would have taken had there been an India scientist to make this decision and if it all depended on a few enthusiasts in India to say, "We will look at what the Americans are doing." It would have been another ten years before India would have accepted intra-uterine contraception, in my judgment.

I have taken more of the time that I was allowed, but I know Harry Levin talks faster than I do. I promise to leave most of the time for discussion, and I am willing to fulfill this promise even though it will take all of Levin's time.

Thank you.

DR. DERRYBERRY: I am sure you have benefited by the brief presentation, and after dealing with the history and research behind the two newest methods of contraception, we are glad to observe and recognize the many practical considerations which need to be recognized in using either of these methods in the underdeveloped areas. I am going to allow at least 10 minutes for questions and answers. I am sure you all have some questions for Dr. Segal.

FROM THE FLOOR: Do you have any figures on the two and three-year usefulness of the IUD?

DR. SEGAL: No. Dr. Robinson has been using IUDs for many years.

FROM THE FLOOR: It was reported 70 per cent in Seoul with a drop of 1 to 2 per cent during the second and third years.

DR. SEGAL: I think the question brings out an important point. The highest percentage of dropouts occur withinthe first three months of use, so once you get past the first year, you have had the largest proportion of dropouts and the second year you have had a few more. By the time you get to the three-year users you can feel confident most will continue.

DR. BAUMGARTNER: Do you want to relate that to the size of the loop?

DR. SEGAL: I am not certain yet whether there is a size relationship to population. I have never believed it but you keep hearing these complaints from physicians in India and Korea, to a certain extent that the biggest loop is too big. Everyone agrees that the littlest loop is too little.

DR. BAUMGARTNER: I thought there was evidence on this that was going to be available by now.

DR. SEGAL: As far as the United States is concerned, there is evidence. There are four sizes loops. One is 31 millimeter, the longest horizontal dimension. There are four sizes, 31, 30, 27.5, and 39.5. There is no difference in the results obtained from 31 and 30. Definitely the 25 millimeter device, irrespective of population in which it has been used, gives a pregnancy rate that is double these two, and I think it should be scratched and I think everyone agrees. Whether there is any difference between 27.5 millimeter device and these two remains ambiguous. There may not be. The India physicians who have been

using the devices insist they like these better. I think it is just a clinical impression, but it may prove there is an advantage.

DR. DERRYBERRY: I have reports of the best results with the 25.

DR. HALL (JOhns-Hopkins): In terms of the sizes and shapes of the devices, the population council cooperative study shows that both of the 30's, if I understand it correctly, have the lower expulsion rate and the lower pregnancy rate. No, I beg your pardon, the lower expulsion rate and lower removal rate. However, the higher pregancy rate.

DR. SEGAL: There is no statistical difference in the difference between the two pregnancy rates. I think one was 1.8 and one was 1.2, or something like that.

FROM THE FLOOR: Are there certain cases that indicate the use of one device against another? For example, in women who have had a child as against women who have not, and might there be an indication where one cannot be introduced because of the cervix, whereas another one could?

DR. SEGAL: Apart from the fact that no one now recommends the larger size devices, and that includes the bow and the coil, and the loop; or nonipparous women. There is no particular meaningful classification. Dr. says he increases the size of his device, depending upon the number of children a woman has had, but this is kind of intuition rather than based on evidence. One has to make a decision at this point of which de-

vice in general gives the best results and use it without trying to work out an elaborate matching system. There is no basis, in my opinion, for an elaborate matching system. If one does this, personally, in my evaluation of the data, it means that you discard the coil and the bow completely.

Now, you point to the fact that the pregnancy rate is about the same with the loop, but the pregnancy rate is only one of many considerations, as you know. One consideration which is extremely worrisome about the bow is the high incidence of perforations when that inserter is used. The inserter is used for the bow, for the uninformed in this area. This is a bow-shaped device. There is something shaped like a watchspring, then there is something that has a soft tail here. This is a loop. Which one you use for which patient, I think it depends on what inventor gets to you first. If you meet the inventor of this first you use this. If you meet this one first, you use this. But there has not been good comparative studies, both in single clinics and on the basis of combined data.

In my opinion an evaluation of these data gives much to suggest that that loop is the most favorable device. You see, each of these has a different type of inserter. This has a solid metal inserter with a small plastic tip. Yet, the perforation rate or how often does the doctor not get into the lumen of the uterus but out into the abdominal cavity, how often does this happen with this bow as compared to the others—an

interesting figure--8 times for 400 in this as compared to 6 times per 4,000 for some of the others, or something in that magnitude. Or to put it another way, the perforation rate is something like 1 per something under 2,000 insertions and one per something under 200 here, in that area. So that this consideration alone makes one go no further in evaluating the comparative merits. There are disadvantages of this one too, which we need not go into now.

FROM THE FLOOR: Would the reduction in the progestin under this experimental technique also represent a 10 per cent price breakthrough?

DR. SEGAL: Yes, that is another reason why people are looking toward the lower doses, for the purpose of reduction in price. The main cost item, curiously enough, is still the material, not the packaging. These compounds are rather expensive to make. They require steroid synthesis procedures, highly skilled steroid chemists, even at the plant batch level. Therefore, they are expensive compounds. When you reduce the compound you put into any given pill, you reduce the cost proportionately. It is not quite linear, but it is close to it.

DR. BAUMGARTNER: I think it is important for this group to realize that the IUD is widely used also in this country. You pointed out the pill, but in India, one of the most useful things we could say was, that 50 per cent of the patients at Presbyterian Columbia hospital now get loops inserted after pregnancy. I would

10 not want the group to go away thinking IUDs were used only in the developing countries. How many have we had in this country?

DR. SEGAL: The number on follow-up examinations is over 25,000. If you take into account the number that are being used in private practice it could be as high as one million, and I would not be surprised if it is that high. It is hard to get data from the one major drug company that has an IUD product. There are several smaller ones now that are selling them. But the Ortho Company, Johnson & Johnson, have a marketable IUD. At any OBGY meeting you will find their booths and they take orders. This is true all over the world.

One of my colleagues was recently at the Obstretics and and Gynacology meetings in Egypt and Iran, about a week apart, and she reported back that at both of these meetings Johnson and Johnson had booths with their intra-uterine devices on display and they were taking and getting orders, selling them in Iran at the equivalent of $8 apiece.

FROM THE FLOOR: Also the Philippines.

DR. BAUMGARTNER: This is also very popular in the United States. Also we did not talk about contraindication and how sterile you had to be in inserting them, but I think it is interesting that both Pakistan and India have developed good manuals for doctors that would be available for doctors.

DR. DERRYBERRY: It would be good to mention costs.

DR. BALFOUR: That is coming up.

DR. SEGAL: Anyone who thinks that this is a method for the poor indigent really is behind the times. Park Avenue physicians are now getting their patients queueing up as in Hong Kong, saying "How come you have me on this old-fashioned method where there is a new method?"

Now only do the women complain about not having devices but if they read in Time or the Wall Street Journal about a new type of device, like about the Hopkins loop, they go in and they want to switch. They say "I don't want to be old-fashioned". It is not a group that would rather switch.

DR. DERRYBERRY: Regarding the number of IUDs in use in foreign countries, in Korea more than 175,000 have been insertedunder the National Family-Planning Program, while in Taiwan, I think the figure is now between 70 and 80,000 insertions. I think now we'd better not take any more time on this.

DR. BALFOUR: We now have Mr. Levin, who is a successful businessman. Actually his background is Yale, where he majored in the social sciences. Then he got into business for some reason or another. Perhaps because of the influence of his father, but he reached the point that he made all the money that he wanted and he decided he should do something of public significance, so he got in touch with Population Council through Dr. Berelson, who will be here in a day or two, and Berelson recognizing ability and capacity, even when it is well-camouflaged, decided Levin could do what needed to be done by the Council. So

about a year ago he joined our staff and I believe had an assignment to study the problem of supplies and distribution of contraceptives with special reference to the less-developed areas. He has made one trip to the Far East and some of you have met him. Recently he went on a special mission to India to visit the government in India about the manufacturing of the IUDs.

So without further ado, it is my pleasure to introduce Mr. Levin, whose topic seems to be the "Costs, Production, and Procurement Problem with Respect to Contraceptive Methods".

MR. LEVIN: Thank you, Bal.

The first thing I would like to tell you is that my mother-in-law is very pleased I am here. Bal just explained to you about my background in business. A year ago this time I was vice president in charge of marketing for a very substantial firm. When I took this position, about the middle of the summer I had to explain to my family what was going to happen when the money tree got cut down. I spent a great deal of time explaining to my mother-in-law, who is a proper Bostonian who I must confess never wore her sneakers to the Boston Symphony, but she has arrived at a boy's camp in Maine wearing her hat and long gloves, so it took me a great deal of time to explain to this mother-in-law how it was that I was going to be involved in condoms and IUDs and pills and all those things that she had not been reading about all these years.

One day I heard her talking to one of her friends, and

when she said, "What business is Harry in now?", my mother-inlaw answered, "He is in education". It is great to be legitimate finally and be here at Johns-Hopkins.

I notice that one of the things in the program says I am going to be concerned about procurement problems. I don't think she is going to be so happy hearing about that turn of events.

I thought I would, for the sake of the topic which has been assigned to me today, assume there is a fairly-limited knowledge about the various major methods of contraceptives which we are talking about, the IUDs, pills, condoms, and then bulk in the others, meaning foam tablets, aresol foam, and one which Loona reminded me of today, liquid and spunge.

Let me tell you what I know about the costs and production and distribution of IUDs as such. I won't belabor the point. Shelburne has given you a pretty good background on what the thing looks like. I just thought I would describe what it takes, because it is conceivable that in the work you are doing, someone will say, "What does it take to make that?" and "What does it take to make that?".

What does it take to make this or any other IUD which is made out of polyethylene material of the same general nature? The things which I have in this bag are pellets of polyethylene which has been mixed with barium sulphate. Now this is a technical thing. It is not important for you to know about, but I

felt at some point in time somebody might want to know how the thing starts. This is it. Clear plastic is blended with barium sulphate for the x-ray opaqueness. This material requires an injection molding machine so it can be made into this shape. An injection molding machine is rather a simple device. It can be very complicated however. You will find small injection molding machines in FAO Schwartz, for example. It consists of a hopper into which you pour this material. The hopper then has below it a heated cylinder. The cylinder heats this material until it melts and flows. At that point a piston comes back and takes a measured amount of this material, forces it through a tube similar to the barrel of a gun into a mold. I don't think I have to describe what a mold is.

At that point, of course the mold is in that shape; at that point the plastic is then in the mold. A cooling action takes place in the mold, usually by the placement of water. Then you separate the two halves of the mold and out falls four, eight, or twelve, depending on how many of these you make in the machine. This can be done on a simple hand machine, with no fancy equipment, no cooling cycle, except sitting and waiting a few seconds for the plastic to take its shape. It is in this shape (indicating).

As you know, it has a "memory" and that fundamentally is all that is required for the basic manufacture of the IUD itself. If it has a thread such as you see here, this must be for the moment, hand-tied on. This is a fairly-tedious operation,

although simple and just a matter of labor.

Now, the inserter which is used to introduce the IUDs. This happens to be one for the lipus loop. The Berenberg(?)is quite different. It requires a different machine. The machine basically is an extruding machine. An extruding machine is, again, a very simple machine. It has a hopper you put material into. There is a screw inside the barrel of a tube that continually forces the molten plastic out through a die. The die has the shape of the tube, so you have a continuous piece of putty-like material going through a machine. It runs through a water bath to cool it down. That is how you make tubes. These are made on the injection-molding machine, which made this. You can put it together by cement. So to get into business to manufacture IUDs is really relatively simple. The cost of the machine can vary from $50 for a small hand-injection molding machine up to $25,000 or $30,000 for a very complicated injection molding machine.

The molds themselves can vary from $50 for a simple-hand-mold up to as much as $3,000 or $3500 for a fancy mold which goes on a very complicated piece of machinery.

The excruding machine which we talked about, to make these, can vary anywhere from 8 to 20,000 dollars, again depending on how you want to--how complicated you want to be. There is probably no country in the world today, and I don't care at what stage of development or underdevelopment they are in, which does

not have a plastic capacity which is able to produce either or both of these items. It is relatively simple to do and it requires simple technology. And as I say, there is no place in the world where this cannot be done on a negative basis.

The pills are quite a different problem. I thought I would add to what Shelly said; there are about 5-1/2 million people on the pills in the world today. These figures are pieced together from government reports from import licenses and from some of the companies themselves. Of this 5-1/2 million, the United States has over 3-1/2 million which will give you some indication of the magnitude of the market here. This is big business. And one of the reasons of course why the pills people are so anxious to maintain it or to bury the IUD perhaps is because, at the moment, the pill business is in the vicinity of $100 million worth of business a year, and growing rapidly. So you don't give up a market potential like this with a repetitive product which somebody takes every year for perhaps 20 years, without a good hard fight.

And you are going to find you are going to have real education and irresponsible comments about much that relates to the IUD and other devices from the pill people. To answer the question about the cost of the pills, the cost of the pills as Shelly indicated to you, is exactly proportional to the amount of projestine that goes into it. However, that has absolutely no correlation with the price in the market place of the pill.

The price, in the market place, of the pill, is quite likely to stay at the same level as the original pill, or as close to it as the manufacturers can maintain.

Two weeks ago there was a meeting in White Sulphur Springs, Virginia, and I would be very much surprised if this were not a subject of serious discussion, and I would be very much surprised if there were any break in the price of the pill in the near future.

Now, there are some things which you can do to the pil which I am going to tell you about later, but you can, for example, as Egypt has done with its limited foreign exchange, take a bulk shipment of the commodity itself and it has processe the compound within its own factories. In other words, they hav taken the compound and made tablets from it. They made efforts to do whatever they could do with their own resources in their own country. This is something anybody interested in pills, can of course, duplicate. I don't think you will find many of the American companies, at the moment, very much interested in selling you compounds, and I hesitate in a meeting of the AID, to indicate there are competitors in the foreign markets who might condone such a thing. But the Italians particularly who thumb their noses at a patent are very responsive to any kind of business deal on which they can make a profit. On the present rate of the market price for pills, they can make a very good profit.

I would like to go back for just a minute and talk to you about the cost of the IUD. I would like to go back for a minute. These are being made in many parts of the overseas world for approximately a penny and a half apiece. I did the placing with the people in India when they figured out their penny and a half price, and it leaves them a substantial profit to pay for their machinery and their plant and other things. So this is not an expensive item to manufacture overseas. This is very expensive if you buy it from the United States. It is about 60 cents apiece. However, they are coming down the pike in other parts of the world, take Taiwan and Hong Kong. I don't think there is any limit on our ability to suggest they can buy the inserters for about 18 cents and I think there are some things on the drawing board now that will put this thing in the under five cent place range in the immediate future.

FROM THE FLOOR: Is that disposable?

MR. LEVIN: There is a part in this which we are testing which will be part of a disposable inserter. Shelly and I were talking about that this week. A disposable inserter is under development, and it will not only be disposable, as the indications are at present, but it also will be boilable so that those who choose to dispose ot it can do so, and those who do not can re-boil it any time they want to.

I would like to returnnow to the pills, the placing structure of the pills. As you in this room are aware, the best

price we have ever had on pills is approximately 42 or 43 cents for a month's supply of pills. This was the price that Egypt paid. This was the price that Egypt paid. This was the price which Schering in Berlin, is offering the pill to the Korea wholesaler. Unfortunately, in Korea, by the time the government gets finished tacking on taxes and import duties it is substantially higher. But the prices are beginning to come down. I will discuss how we can bring them down, better, later on.

I could not help but think, when Shelly was discussing the pills, and he was talking about the Indians, about the guy who was driving through the Navajo country and he saw a woman standing there with about 20 small children. He stopped his car and being interested in family planning, he asked her if the children were all hers. She said, "Yes, we are just one big Hopi family."

Now, let me tell you about condoms. Condoms are more widely used and are a bigger dollar item than any other item I know of. The current production of condoms in the United States is at the rate of 4-1/2 million gross per year. There are about 10 million users in the United States, based on my own calculations of frequency of use, and from what the condom manufacturers indicate they suspect the use is. They had a doctor who did a research project several years ago. How valid it is, I don't know. This is $120 million of business in the United States. This is big business and big profit. Very big profits. Around

the world, Japan is turning out about 1 million and 1/2 gross. They have about 4 million users. Koreans are capable of turning out about a half million gross at the present time. India's factories are capable of turning out condoms, but are not, and I would hesitate to even hazard a guess as to what their production is or can be.

England and South Africa and South America are the only three other places that I know of--I have not been to Europe on this investigation, yet, or have I been to South America or Africa, so I am not very conversive on that, but to my knowledge those are the only people manufacturing condoms.

The latex condom--let me tell you what it takes to manufacture it. If you go to an American manufacture you will see a machine which is about the length of a football field, in a very fancy factory with very careful humidity control, air-conditioning, cleansing of the air and so forth, and this tremendous long machine is being run by two people on each of three eight-hour shifts a day. It is really an incredible thing. It is so completely automated.

The basic technology of course requires raw material latex which is treated with a solvent and some other chemical additives to make it uniform, and it is put into a big tub. There is a continuous conveyor belt which looks like a line of marching lead soldiers which takes the shape unfortunately, of condoms, instead of soldiers, which come down and dip into this

rubber material. Then it goes up through this long machine which is nothing more than a heating oven. Much to my surprise, I thought all kinds of things were going on inside this machine, but it is only a vulcanizing problem. At the end of the half length of the football field, it comes out of the curing oven and a little brush rolls down about a half inch at the top to make the rim of condom and then it goes back through the machine and is dipped again, and then it is rolled off. That is all it takes to make it, but the machine costs about $350,000 and the air-conditioning and the humidity control and so forth and so on--the magic which is supposedly required to manufacture these things, make it quite expensive.

You are not through, however, when you have a finished product, because then you have to powder it, and most importantly you have to inspect it.

Each inspection machine currently in use in the United States costs about $25,000. The Julius Schmidt Company has 65 of these machines that they run all day long, so you can see this is no small business for anybody who does not mean business. They test the things rather simply. There are three tests which you can use.

They put these on a metal form which is the shape of a condom. They take two sides of electrical current, negative current on the inside, and positive on the outside. If the volt meter indicates there is a passage of current, you know you

have a defective condom. They do this also by dipping it in a water bath and the same process is used. In the United States, the condom cost is the cheapest price I have seen. It is about a penny apiece, about a dollar and a half a gross. The cost for condoms in Korea is about a dollar and 10 cents a gross, at the factory. However, until very recently they did not use any type of mechanical testing. They were using girls who would inflate, semi-inflate the condoms, and then squeeze them in front of their lips to see if any air was being pushed out in the process, so I recommend that anybody that considers condoms from Korea make sure that the inspection technique has been improved.

The Japanese are in the vicinity of 70 to 90 cents a gross.

Now, foam tablets, and aresol foam, jelly liquid, sponge, and so on, I am not sure how much you want to know about foam tablets, but there is a foam tablet which I picked up which is actually of a different shape and size than many which you have seen. The Japanese ones look like a life saver. In marketing they decided they had to have something quite imaginative so they took out the center and provided less material and a less safe method but it has a better look and it seems to be more salable than the one they had before.

A rather simple technology to produce them. The chemistry is not complicated. You only need a tablet machine and that is all that is required. There are difficulties in the packaging

because they are terribly hydroscopic, and that is one of the reasons they have not been effective. They run from a half cent in Korea to a penny or penny and a half apiece in the American and British markets. There is not much production of them around the world and they are not being widely used. I would gather that approximately 250,000 users in Japan probably represent half to 40 per cent of the total world users.

Foam, aresol foam,—do all you know what aresol foam is? The EMKO product. I have here the EMKO product. There is now a Japanese product which is identical to it. It is rather simple to use. This is an aresol foam. It is interesting to note that the spermacidal ingredient used in this is most widely used as a detergent, This is an acid and it is not appropriate to indicate that, but as a fact of the matter, that is what happens. This looks like a very complicated and sophisticated type of product. The fact of the matter is it is quite simple, and I thought you would be interested, in the event that anybody asks you about it and asks you what it takes to get in business to manufacture this thing, you will know.

This bottle is about half filled with the various chemicals and various materials which have been prepared in a big steam kettle, like you see in fancy restaurants or any pharmaceutical company. After it is put into it, about two thirds of the way up in the bottle, this top cap is put on. This has a valve and Freon(?) gas is inserted into the whole mixture. A

four-ounce bottle of this material will give you 100 applications. And a four-ounce bottle of this should cost, in the overseas market, in the vicinity of 15 to 25 cents. So that, in terms of per unit cost of contraception, this is something that has not been very widely used, although it is not very expensive. The people who manufacture this, the EMKO people and Mr. Joseph Sunnen (?), who is the inventor of the product, has indicated to me that for any government program which wants to utilize this product and does not offer it for public sale or for profit they will be happy to provide all of the technology and their formula and whatever help is required. Possibly you might even be able to get some funds for the building of the factory to produce this, but I am not sure of that.

You can build a factory to make these things, in a room this size. In fact, that would be about four times as much as would be required. You need a coating machine, a kettle, the Freon gas container; that is all you need. Freon gas is a refrigerant.

Four men can turn out 3,000 four-ounce bottles a day. A four-ounce bottle gives you 100 applications. Do the multiplication yourself and you will understand that perhaps this does have rather a great deal of market to offer. I won't speak for it's authenticity. I am not qualified to discuss that.

Dr. Baumgartner reminded me about liquid and sponge. There are any number of types of anti-spermacidal agents which can be used. I am not too familiar with the exact costing of

them, except to indicate that the sponge which is generally used with all these types of material is literally so inexpensive that it does not even warrant concern, as far as cost. Rubber was usually used as a sponge and polyethylene which we now use in our automobiles as upholstery is now coming in.

I have an idea which I would like to present to you. This is something I cannot domuch about and which perhpns you can do something about, politically, Don Bogue. It is a political problem which is perhaps the thing that you can handle relative to the purchase of supplies. Now you and I both know that in mass purchasing power, there is great bargaining capacity with manufacturers. The significant reason that we have not been able to bring down the prices of many of these items is the fact that we have been fragmenting our purchasing power. Bill Boynton comes in from Pakistan and Dr. Wright comes in from Africa, and each one of them negotiates—I am just using this as a hypothetical case. Each one negotiates for 15 or 20,000 dollars worth of a product. If we were to add up all the negotiations, including the projected $2 million a year that Pakistan is anticipating in their next five-year plan, we may end up with as much as 3 or 4 or 6 hundred thousand dollars worth of purchases every year for each of the various types of items.

Now, I suggest that perhaps you people in AID could encourage a purchasing cooperative to be formed which would have as its Board of Governors perhaps one person from each of the

government which you represent. This purchasing cooperative would then negotiate with manufacturers for contract for a standardized product, for a recognized product, and then, lumping together this purchasing power which they would have, they would undoubtedly be able to get better prices than each one of you is able to get individually.

Now, I realize this is a political consideration and it is very hard to get people to understand this concept, but as a practical matter, if it operates as a true cooperative, each country would doing business with a cooperative. Now they are doing business with a manufacturer. There is no reason why they cannot do business with a sales agent. The cooperative could take a little bit of profit every year as an operating overhead expense and at the end of the year they could reimburse the various countries that made purchases from them in direct proportion to the amount of business they provide and give them back any excess profit which they had. This is the only way that I know of that we will be able to bring to bear any significant change on the price structure of these items. We have done it. You don't have to do it on this. This is so low in price now it does not bear talking about. But condoms, pills, and all the other items are placed, generally speaking, at levels which do not reflect the true significant state of the market but reflect the nature of the marketing companies which generally work on a cartel type of understanding among each other.

I would like, because I know the time is running short, to tell you briefly about one thought I have regarding something which Don Bogue spoke about, regarding Comilla. One of the most significant things that happened in Comilla, as they talked to these village people they did undertake to encourage village midwives to act as sales agents for the various types of contraceptives which they were attempting to promote. If you think about the village midwife and you look at her status and her situation in the community in which she exists, you realize she is the person who is most threatened by any population control problem. We are, in essence, putting her out of business. We are reducing her income. At the same time, she is probably the most trusted consultant to the women in that area in terms of conception or family-planning or sex or whatever the subject you want to talk about. They talk about their problems with this woman. She also is the one who knows who the post-partum cases are because she delivered them. We are threatening her whole status. She can ruin our program, any program, if she recognizes that she is threatened and she understands what is happening. All she knows is regardless of the fact that the Prime Minister is telling her that she has to help this program, she is going to have a smaller income next year. It behooves us to utilize these people for good rather than for bad, in a situation like this.

The fact is they are trusted by the women. They are in the community. They know who the post-partum cases are. They

can circulate. They are the ones who are hooked, so to speak, and they are the ones who can get the pushers. This is very much like selling dope, I suppose, and I would like to suggest we should not overlook the native midwife.

Everybody in every village can point out who the native midwife is. They know who she is. You can find her. This is her business. Let us give her something to sell and let her make a profit on it. In a few instances where we tried this in a very limited scale, in Taiwan, they have been extremely successful in making sales of various traditional methods. The non-traditional methods--they have been offering coupons to users of IUDs. "Here is a coupon. Get an insertion for an IUD", and the coupon is reclaimed for so much money by the midwife. So she benefits no matter what kind of program you have going.

I remember from a talk that Dr. Balfour gave not too long ago. If I remember the figure correctly--last year Japan, using the midwives and workers who are employed in their clinics or for them, their extension workers, made $39,000 through the sales of traditional methods of contraceptives. Is that figure correct? I think that is it. And it supported most of the clinic activities and most of the IPPF work in Japan. So it has been proven that it can be done.

The network is there. It has been recognized. Let us get them on our team instead of somebody'else's team. The last thing I want to talk to you about is this thing I put up

here before. It was interesting. When I got off the plane today Shelly said, "I have to get a haircut." He said, "There is a barbershop." I said how do you know. He pointed out the barber pole. This is an IID, an Instant Identification Device. The fact is that we have been very fragmentary and we have been not making an honest effort to combine the various activities which are being applied in the field of family planning and birth control. If we can develop, and there are many suggestions about what the shape or form of the badge or signal or the sign can be--we should develop a sign that every person who is involved in family planning will wear, a badge or button, and every building where family-planning advice is given should have a symbol. Every product which is packaged should have the symbol appearing. Every movie film, every piece of literature should bear that symbol, and then certainly a person who is illiterate or who is embarrassed and who sees that symbol displayed over a store or building or a counter, will recognize that this is something, some place where they can get this type of help. It is like the red cross. The Red Cross means something different to everyone in this room, yet it has a universal application and you recognize it as something for good. You know you can get help there. We should do the same thing for all the family-planning activity in which we are involved. I notice a lot of grinning down here, so obviously I am hitting on something people have been talking about.

I will entertain any questions at this point about anything anybody would like to know on the price, cost production--you name it.

DR. BERRYBERRY: Thank you, Harry. I believe we should shut off here before too long. But just a few questions.

DR. BOYNTON: (Pakistan) In Pakistan they had a lot of trouble with the foam tablets disintegrating. Should they be stored in air-conditioned rooms, dry, and how long can they be stored? Is there any way to get information on that subject?

MR. LEVIN: Condoms, if properly made and packed, condoms can be stored--a reasonable shelf life is 2 or 3 years.

DR. BOYNTON: Is there any special temperature or humidity?

MR. LEVIN: Reasonably packaged--not any temperature or humidity. No. 1, this is a natural product, the condom, and it will react to the atmosphere. If there is sulphur or copper or other chemicals in the air it will ruin the condom. So when I say properly packaged, some of these things will go through paper, some will go through plastic, so it is hard to say. Some will go through lead or aluminum foil.

Another problem which is very important with all these products is the fact that white ants just thrive on condoms, for some reason or another, and I understand this is a bigger problem around the world than heat or humidity. The fact that they are so hydroscopic, for example, in terms of the foaming tablets, make them very difficult to store. Even the best of packaging,

once it is opened—very often you can maintain the complete package of tubes on the shelf, under reasonable conditions for a year or a year and a half, two years or three years in some climates. But as soon as you open it, the first time, and you let the air in, and it is a hot day and it is opened for any length of time, you have a disintegration problem.

The individual packages—you have probably seen foam tablets packed in individual containers, little sheets of foil, and each one packed in its own container. This is great except it is expensive and it makes for a more expensive packaging. I can't tell you more than that.

DR. MONSANO (Colombia): It is illegal to import anti-conception devices into Colombia. However, it is not illegal to manufacture them. I had a cocktail conversation in Colombia with a rich man. He is interested in manufacturing condoms. Perhaps you might have some information, in some packaged form, that would indicate what is necessary to manufacture condoms or any other forms of device, that would explain what is involved, the plant capacity, equipment requirements, the technology, manpower requirements, things like that which would be helpful.

MR. LEVIN: We are working on this now.

FROM THE FLOOR: The figure you mentioned on the foam, before, does that include the inserter?

MR. LEVIN: No.

FROM THE FLOOR: What does that run?

MR. LEVIN: About three cents.

FROM THE FLOOR: Extruded?

MR. LEVIN: Extruded or molded, depending on the country. It can take different shapes. Your plastic technology might dictate a different kind. This happens to be acrilic. You might use something different. Of course, you might need only one inserter for one woman for a lifetime, and these bottles are refillable. So the second time around you have less of a charge than the first time.

I would like to answer the question that the man from Colombia asked. We are working on this information right now and we also are working on some development things which perhaps will have some dramatic impact on the condom manufacturing so that if you can wait perhaps until the fall, you might have something rather startling, some rather startling innovations.

DR. BAUMGARTNER: Now he is telling you not to encourage a condom factory, and I think there are several other kinds of factories I would not start in a hurry.

FROM THE FLOOR: One comment on the foam tablets in the foil, in Pakistan. In going around villages and picking up the packages that had been there about two years, the foam tablets were completely degenerated inside.

MR. LEVIN: These were stored in houses or the depots?

FROM THE FLOOR: in the dispensary.

Also, in our follow-up of condom users, there was a large number of users that complained that the condom had broken.

Shouldn't there be a testing procedure on this?

MR. LEVIN: I did not cover that because it is a sort of extra test that is employed. The fill these with air and with water. They spot check certain batches to see what their bursting point is. Let me put it this way. With a tested American condom if you can show me somebody who has normal--a pair of normal organs, and this can be torn in the act of intercourse, I would be very much surprised. This stuff is amazingly tough and durable.

Again I might say that the manufacturers have not been exactly 100 per cent in that they have very often shipped their rejects out of the country and many of the complaints that you have been getting are valid complaints because they are defective to begin with. So I don't question that in your experience in Pakistan, that this is true, but this is one of the things that this cooperative could do. The testing standards could be set up, and they could be made to adhere to them. This would eliminate pakistan having to test their own, and they could be sure they were getting a tested product that would do the job on a continuing basis, regardless of who the purchasing cooperative did their purchasing with.

FROM THE FLOOR: EMKO was not effective in the village where we were using it. EMKO and other foaming products gave a pregnancy rate of 115 pregnancies out of 1100.

DR. RAUSCHENBERGER: The only reason I wanted you to say

that is, I don't think AID should get excited about things that are cheap. If people are not going to use them and they are not very good, even if they are cheap, there is no point in encouraging the use of them.

MR. LEVIN: I just wanted you people to have some understanding about these things so you would have some ammunition. I am not recommending one over the other.

DR. DERRYBERRY: Ladies and gentlemen, I think Mr. Levin will be willing to answer questions for anyone who wishes to write up a further point for discussions.

But to close the meeting, I think Dr. Baumgartner has some announcements for us.

(Whereupon, at 5:20 o'clock p. m., the meeting was adjourned.)

- - -