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POPULATION CRISIS

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HEARINGS

BEFORE THE

SUBCOMMITTEE ON

FOREIGN AID EXPENDITURES

OF THE

COMMITTEE ON

GOVERNMENT OPERATIONS

UNITED STATES SENATE

EIGHTY-NINTH CONGRESS

SECOND SESSION

ON

S. 1676

A BILL TO REORGANIZE THE DEPARTMENT OF STATE AND THE DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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MARCH 9 AND 31; APRIL 6, 1966

PART 3

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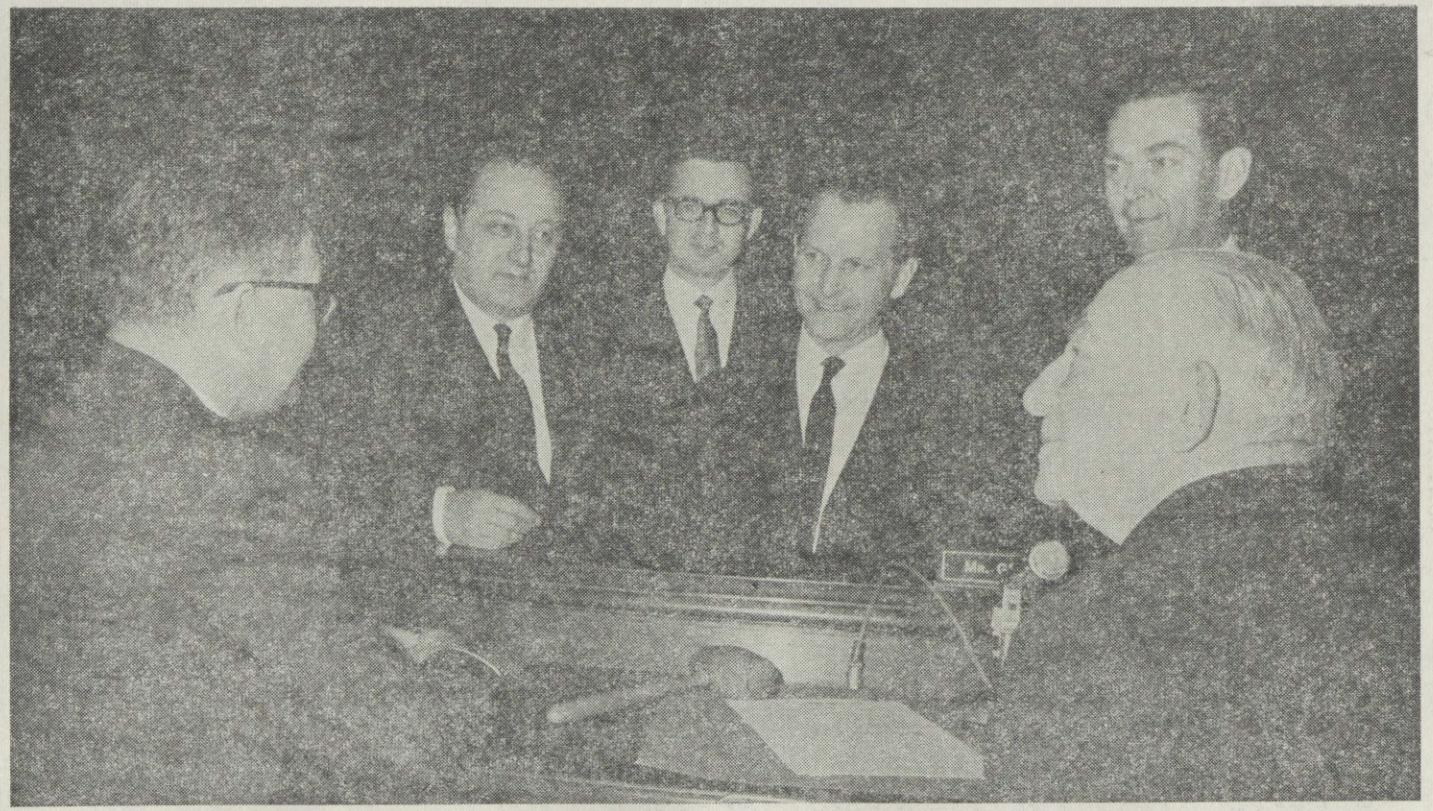

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The witnesses who testified on S. 1676 before the Subcommittee on Foreign Aid Expenditures, March 9, 1966, were: Mr. Ernst Michanek, Dr. Ulf Borell, and Mr. Carl Wahren. (Pictured, left to right: Senator Lee Metcalf, Senator Ernest Gruening, chairman; standing, the Honorable Hubert de Besche, Swedish Ambassador to the United States; Carl Wahren, Ernst Michanek, Dr. Ulf Borell.)

POPULATION CRISIS

WEDNESDAY, MARCH 9, 1966

U.S. SENATE,
SUBCOMMITTEE ON FOREIGN AID EXPENDITURES,
COMMITTEE ON GOVERNMENT OPERATIONS,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to recess, in room 3302, New Senate Office Building, Senator Ernest Gruening (chairman of the subcommittee) presiding.

Present: Senators Gruening, Metcalf, and Mundt.

Also present: Joseph Lippman, staff director; Mary A. Miller, clerk; Joyce Polk, assistant clerk; Carole Ransom and Harriet Eklund, editors, Subcommittee on Foreign Aid Expenditures; and Laura Olson, special consultant on population problems.

OPENING STATEMENT OF THE CHAIRMAN

Senator GRUENING. The hearing will please come to order. I now direct that the photograph taken today of our distinguished guests be placed in the record of this hearing.

This morning the Subcommittee on Foreign Aid Expenditures which has been holding hearings on the population problems will receive aid from a developed nation—Sweden. The aid is furnished freely. There are no strings attached.

The Swedish three-member delegation is here to share with the subcommittee what Sweden is doing to make family planning information available upon request overseas and at home. They have come at their own expense from Stockholm to Capitol Hill. We welcome them warmly and are extremely grateful.

Our Swedish guests are Mr. Ernst Michanek, the director general of the Swedish International Development Authority; Dr. Ulf Borell, professor of obstetrics and gynecology and chairman of SIDA's Advisory Group on Family Planning; and Mr. Carl Wahren, deputy head of the planning division of SIDA.

SWEDEN—FIRST NATION OFFERING FAMILY PLANNING ASSISTANCE AS FOREIGN AID

Sweden is making birth-control assistance an ever-increasing part of its foreign assistance program. Sweden has pioneered in this field, having undertaken its first effort to help a developing country initiate a family planning program in 1958 when Ceylon requested assistance. That was 7 years ago when Sweden was the first nation to offer family planning assistance to other nations. What has taken place since that initial request?

We are here today to listen and to share what we learn with all interested people.

As chairman of this subcommittee, I wish to express my appreciation to the Government of Sweden and to Ambassador Hubert de Besche and his able first secretary for political affairs, Mr. Lennert Eckerberg, for their assistance. I understand the Ambassador and Mr. Eckerberg are with us.

More than 7 months ago the subcommittee received testimony from Mrs. Birgitta Linnér, author, family counselor and teacher from Uppsala, Sweden, who with her husband, Sven, was visiting in the United States. The subcommittee invited Mrs. Linnér to tell about the Swedish family planning programs. In the course of her testimony she talked briefly about the research work at the Karolinska Institute where Dr. Borell is professor.

When I asked Mrs. Linnér specifically about the work of the Government of Sweden overseas as it related to population problems, she suggested that the subcommittee contact her Embassy for detailed information. We did, and the hearing this morning is the result.

BIOGRAPHIC STATEMENT: ERNST MICHANEK

Our first witness, Ernst Michanek, director general of the Swedish International Development Authority, was born in Stockholm, Sweden, on September 27, 1919. He majored in humanities at the University of Uppsala and was graduated in 1944.

He began his distinguished career as a journalist, and served as press relations officer for the Scandinavian Airlines System in 1946–47.

In 1948 Mr. Michanek was adviser to the Swedish Ministry for Social Affairs, subsequently becoming head of division in 1955 and the Under Secretary of State from 1956 to 1964. In 1964 Mr. Michanek served as Secretary General of the Swedish Agency for International Assistance and since 1965 has been Director General of SIDA.

He was a member of the Swedish delegation to the United Nations Economic and Social Council in 1951–53, and chairman of the Swedish Committee for Multilateral Technical Assistance from 1954 to 1961.

Director General Michanek has been a member of the Board of the Swedish Institute for Cultural Relations With Foreign Countries since 1954.

He served on the United Nations Social Commission from 1956 to 1959.

Mr. Michanek has represented his government at many international conferences. He has been Chairman of the Swedish Official Committee on Social Policies since 1958.

Since 1964 he has been chairman of the board of governors of the Dag Hammarskjold Foundation. He is the Swedish delegate to the governing council of the United Nations development program.

Ernst Michanek is the author of several handbooks on social and labor policies. He is a Lutheran. He and his wife Annika have two daughters and one son.

Mr. Michanek, we are very happy to have you and your colleagues here. Please come forward and proceed in your own way.

STATEMENT OF ERNST MICHANEK, DIRECTOR GENERAL OF THE SWEDISH INTERNATIONAL DEVELOPMENT AUTHORITY

Mr. MICHANEK. Mr. Chairman, we have come here to talk about the most urgent problem of the present-day world, the problem of hunger and overpopulation. This is, I submit, one and the same problem. The starvation in the developing countries is increasing because of the increase in population. The starvation and death of many millions of men, women, and children can be checked only if the enormous increase in population is checked. We can do something about this situation—and we must do it.

You have been kind enough, Senator, to invite us to appear before this subcommittee. Your invitation was addressed to the Government of Sweden and based upon the activities undertaken by that Government in the field of population and family planning. I am most honored to represent Sweden here in my capacity as administrator of the Swedish Government Authority for International Development. With me as has already been pointed out by you, are my chief adviser in the field of family planning, Dr. Ulf Borell, professor at the university and head of the department of gynecology at the Karolinska University Hospital in Stockholm, and Mr. Carl Wahren, administrator of foreign aid programs of health, family planning, and research.

"WE FIGHT FOR HUMAN RIGHTS . . ."

In the discussion on foreign aid we all speak of the vicious circle of poverty, ignorance, and disease, which prevents economic, social, and cultural development. In international and domestic policies we fight for human rights—rights concerning life, work, education, security for all, and so forth.

". . . FOR ALL PARENTS TO PLAN THE SIZE OF THEIR FAMILIES"

In Sweden, we consider it a human right for all parents to plan the size of their families—including the case of subfertility—and to be assisted with a view of getting the number of children they can provide for.

In Europe, and in North America, birth control has obviously been known and widely practiced since a very long time. This goes for people of all nations and denominations—only that in some countries and some parts of the Western society family planning is discussed more openly than in others.

"WE HAVE NO RIGHT TO RESERVE THIS KNOWLEDGE FOR A FEW"

We have no right to reserve this knowledge for a few. On the contrary, we are under obligation to disseminate it—for ethical reasons, for reasons of morale, for social reasons and—let us not forget—for economic reasons.

In the 19th century and still not many decades ago, Sweden, although very thinly populated, had a problem of overpopulation. More than a million Swedes emigrated to America for economic reasons. People even starved to death in years of crop failure. Sweden's population problem today is rather one of underpopulation, in spite

of the fact that we now have twice the population of a century ago: We have a shortage of manpower. Sweden is now an immigration country.

". . . ALL CHILDREN BORN SHOULD BE CHILDREN WELCOME . . ."

In my country, sir, we would never think of trying to deprive our people of their right to knowledge in questions of human reproduction. If I may speak in my former capacity as Sweden's Under Secretary of Labor and Social Affairs: We try in every way to see to it that all children born should be children welcome and should have a right to affection, adequate care, and education.

We think the rest of the world should have the same opportunities. This is why in our foreign aid program we have entered the field of population control.

Swedish foreign aid, sir, is not large. However, our aid program, which totals $65 million this year, represents five to six times more than only 5 years ago. All parties in Sweden are agreed that we must move still faster toward the goal of 1 percent of our gross national product being used for aid purposes. Our official foreign aid today financially represents one-third of that target figure, and our gross national product grows at the annual rate of some 4 percent.

SWEDEN SECOND TO UNITED STATES AS CONTRIBUTOR TO U.N. DEVELOPMENT FUND

As an ardent supporter of the United Nations, Sweden devotes half of her foreign aid funds to the multilateral assistance programs of the U.N. and its specialized agencies. In fact, this year, Sweden—a nation of 8 million people—ranks second to none but the United States as contributor to the United Nations development program, carrying some 8 percent of the total costs against 40 for the United States.

SWEDEN'S FOREIGN AID PROGRAM ENCOMPASSES AREAS OF NEED

Our foreign aid includes bilateral programs in a few countries. We are financing and running some institutions for vocational and professional training, for instance, in the field of agriculture. We have entered the field of financing food purchases for starving nations. We give credits for grain storage projects, agricultural water supply, and the like. And we are working in the field of health, preventive medicine, nutrition—and family planning.

SWEDISH FOREIGN AID IN FAMILY PLANNING TO BE INCREASED

Swedish public opinion demands that we devote more of our efforts to family planning. But for reasons of lack of experience, and particularly of shortage of personnel, financially only a modest part of our aid budget so far has gone into family planning. We are increasing this part, and eager to increase it more, but until such time as we have found ways of attracting badly needed experts—experienced doctors, demographers, sociologists, and the like—a strongly hampering factor will remain.

We are in no doubt regarding the interest and motivation among the population of the developing countries in such an increased ac-

tivity. This is borne out by evidence from research activities reported to this committee from many competent quarters. Swedes abroad report back how they are approached by local citizens from all strata of the community begging for information: "How do we go about having as few children as you have?"

In an increasing number of cases we are now being approached by representatives of foreign governments requesting assistance.

SWEDEN: A PIONEER IN LIFTING BAN ON FAMILY PLANNING ACTIVITIES

As in other cases of requests for aid, because of our limited capacity, we would have liked to refer such questions to the multilateral programs which we support so strongly, that is to say, to the United Nations. But for many long years the intergovernmental organizations have not been in a position to assist. This is why Sweden has felt compelled to try on her own to give foreign aid in the field of family welfare—including family planning. Indeed we would have liked to cooperate multilaterally with other governments—but for many years we have had to pioneer among the industrialized countries for lifting the ban on family planning activities as a part of the official aid programs.

Sir, I speak of governments. Before mentioning more about the official activities, I wish to stress what has been done by nongovernmental institutions. The largest and most active private institutions working in this field are the Population Council of New York and the other American institutions working with the support of, above all, the Rockefeller and Ford Foundations. They deserve the highest praise for truly historic achievements. What they have done by way of research, investigations, planning, training, and pilot schemes in many developing countries—and in this country—is in my opinion without comparison the most important international effort so far to meet the requests from the developing countries for assistance in formulating and carrying through population programs.

These American institutions need no financial assistance from outside—but we have been happy to share with them—problems, findings, and experience.

SIDA AND IPPF WORK TOGETHER

For many years, the pioneering International Planned Parenthood Federation, IPPF, with headquarters in London, which is a nongovernmental federation of national or local organizations all over the world, has been devotedly working on family welfare programs. The Swedish International Development Authority has taken up cooperation with the IPPF in order to pool experiences and resources, and Swedish financial assistance toward the budget of the IPPF has recently been granted.

SWEDEN ACTIVATES AWARENESS IN U.N. IN 1950'S

In the United Nations the Swedish activities aimed at creating awareness of the problem of overpopulation began in the early fifties. There were indications of an awareness among leaders of some developing countries, that problems were arising as medical science and international efforts helped decrease the death rates rapidly, while

birth rates remained unchecked. A Swedish demographer in the Population Commission of the United Nations brought up the issue of population policy in 1951—and was invited to India to study that country's situation and to advise the Government on family planning measures. But from the same year, sitting as a Swedish delegate to the United Nations Economic and Social Council, I remember being warned not to mention this question in official interventions at the risk of being brought to silence by procedural moves or otherwise.

DISCUSSION ON FAMILY PLANNING WAS FIRST PERMITTED IN U.N. IN 1962

In the following years Swedish delegates tried many times in the committees of the General Assembly or in United Nations functional commissions, in UNICEF and the World Health Organization to bring the matter up for discussion. In 1960 Sweden and five governments from developing countries tried in the General Assembly to break the ice, but in vain. In 1962, 11 sponsor governments succeeded, though by a very tight margin, in getting the matter discussed—but the most important paragraph of the proposed resolution was defeated; the United Nations was not allowed to include family planning in its technical assistance activities, even at the request of governments.

In the meantime, world population reached an increased rate of some 80 million people a year.

SWEDISH FINANCES HELP CEYLON IN FAMILY PLANNING

In 1958, the Governments of Ceylon and Sweden agreed to cooperate in family planning, starting a pilot project for "action and research" on the island. Research, training, and individual assistance were undertaken. By now we seem to be able to state, that in the main research area the birth rate has gone down by some 30 percent. The Swedish project is, since last year, incorporated in the national program for family planning in Ceylon, in which the Government has engaged the whole health service system of the country. Subfertility cases are, of course, also treated. The project has now entered a "service cum training" phase. Under a new agreement between the governments, Sweden is also financing the supply of contraceptives for the national program.

For 4 years, Pakistan and Sweden have been cooperating in a family planning project. Swedish experts have helped in organizing a few pilot clinics, in training medical and paramedical personnel, in the preparation and production of audiovisual aids for the dissemination of knowledge in the field of contraception and in other ways. Last year a very ambitious family planning scheme for Pakistan, covering the 5-year plan period 1965–70, was prepared, as a result of cooperation between American experts, the Pakistanis and the Swedish team. My colleague has just handed you copies of this plan.

SWEDEN FINANCES CONTRACEPTIVE SUPPLIES FOR PAKISTANIS

And now the Swedish experts are involved in what I believe is so far the greatest effort in the world to introduce a large-scale national family planning program in such a large country as Pakistan—a coun-

try of 100 million people, in which we know that the number of inhabitants will become 200 million before the end of this century if present trends prevail. Financial assistance is now being given by Sweden to cover the costs in foreign currencies for purchases abroad (and not in Sweden, by the way) of contraceptive supplies to the Pakistani program.

SWEDES TEACH CONTRACEPTIVE TECHNIQUES IN TUNISIA AND GAZA STRIP

Other small programs aimed at linking the services in the field of maternal and child health with the teaching of contraceptive techniques have been introduced by Sweden in Tunisia, and in the Gaza strip as part of an assistance program for Palestine refugees.

A few other countries have made official or semiofficial requests for assistance in the field of family planning, and the Swedish International Development Authority is now considering how best to deal with them. During the last 10 months I have myself studied family planning projects in Japan, Korea, Hong Kong, Singapore, Tanzania, and Egypt, and my collaborators have been also in Turkey, Morocco, Tunisia, and Taiwan for the same purpose. We have also studied different activities at American universities in the field of research and training.

U.N. SETS UP EXPERT TEAM IN INDIA AT REQUEST OF GOVERNMENT

I mention this, sir, in order to stress in how many countries the governments are now aware of the problem and ready to take action, and many more could be mentioned. It was, therefore, late but very appropriate, that a number of United Nations bodies last year took a positive attitude to the population problem in general. In 1965 the first U.N. expert team was set up to study population programs in India at the request of the Government, and we are eagerly waiting its report.

We hope that soon the time will be ripe for operative programs to be undertaken by the United Nations. In the meantime the Swedish Government has made known that we are ready to support financially, by funds in trust and if possible otherwise, operative programs which UNICEF, WHO, or other institutions and organizations might be willing to start.

From our experience, although limited, I should like to draw some conclusions with respect to family planning activities.

"THE BULK OF THE JOB MUST BE PERFORMED BY NATIONAL PERSONNEL"

First regarding planning: A careful planning of field activities must precede operations and much of the planning must take place in the field. Planning teams should be composed of experts in various fields—medical, sociological, demographic, et cetera. Demographic surveys and sociological studies are particularly important for the planning and for the evaluation of results. The magnitude and the complex character of the problem indicates that foreign personnel cannot do very much of the real down-to-earth fieldwork. International experts have their greatest role to play as planners, research leaders, advisers. The bulk of the job must be performed by national personnel.

Second, some words on the role of women. In the planning and execution of programs, the central role of women in the family planning must not be overlooked. After all, one of the most important aspects of the population policy is to improve the health, not to say save the lives of the mothers, to give women a status in the family and the community, and to strengthen their possibilities of really contributing to development.

MICHANEK WANTS FAMILY PLANNING ACTIVITIES INTEGRATED WITH PREVENTIVE HEALTH SCIENCES

Third, it seems important to integrate, wherever possible, family planning activities in mother and child health promotion and couple them with the preventive health services. Indeed, it is important to include services for the subfertility cases in the program.

"TRAINING INSTITUTIONS . . . CAN SERVE AS INTERNATIONAL TRAINING INSTITUTES FOR PERSONNEL FROM ABROAD"

Fourth, a few words on the personnel and training. The problem of operative personnel is particularly complicated in the case of family planning. It is difficult already to make a job description, still more difficult to find suitable persons—each field project is partly unique and must be adapted to local conditions. Specialized field personnel is needed for information services and motivation, for distribution of information material and contraceptive supplies, for training in various fields, for clinical services and for followup studies. The personnel needed will in most cases be in need of special training. It is very important that training institutions get possibilities of taking up this special training, and that they can serve as international training institutes for personnel from abroad, from developing countries as well as from the donor side.

I think the United Nations ought to take up training programs for field personnel. What has been done already in this field and in population research by American universities is of utmost importance—I might mention the University of Chicago, Harvard, Johns Hopkins, the University of Michigan, and the University of California at Berkeley. Indeed, it is difficult to get proper training for field activities in industrialized countries—but I have been very impressed by what I have seen myself of practical fieldwork in Chicago, undertaken by a university institution and the Planned Parenthood Association there.

The pioneer experiences of the Population Council of New York, the Ford Foundation, the International Planned Parenthood Federation and others must be taken care of and utilized by all parties concerned—and may I say, Mr. Chairman, that this subcommittee is doing a great contribution by putting together so much useful information through this dialog.

OVERALL INTERNATIONAL COOPERATION AND PLANNING IS NEEDED

My fifth point is on research. A lot of research remains to be done. My colleague, Dr. Borell, will elaborate on this question a little later. In regard to contraceptive methods—there is not yet a final answer to

the question of methods; which are the most safe—pills or the intrauterine device or some other—and which are the simplest for women and men in various cultural and social environments? May I mention in this context, that the programs should include several kinds of contraceptive methods to be in keeping with individual needs and cultural beliefs. We have found, for instance, that in cases of inconvenience or failure of one method, a set of others should be at hand in order to counteract the tendencies of women in such cases to resort to abortion. The institutions in the United States have already played a great role in research, and institutions all over the world must cooperate continually and if possible under some kind of overall planning.

MICHANEK BELIEVES $1 PAID INTO FAMILY PLANNING CAN SAVE $300 IN COSTS FOR EDUCATION

Research in other fields—demography, sociology, methods of communication, economy, et cetera—should also aim at assisting in a proper evaluation of the impact of human reproduction to the individual, the family, the nation. If it is true, and I believe it is, that $1 paid into family planning services can save $300 in costs for education, such facts should be given and disseminated more widely.

My last point deals with coordination. International coordination is badly needed in family planning. We need a center for information and discussion and we must try to achieve a rational division of labor between different parties and institutions.

Aid-giving agencies have to consult each other and coordinate their investigations and operations. In other fields the United Nations bodies, consultative groups or consortia are available for international coordination. In this field it is particularly important to get the private institutions involved in a coordination machinery which they can accept.

Mr. Chairman, 3 years ago I appeared in this building of the U.S. Senate as a witness invited by the Subcommittee on Employment and Manpower, under the chairmanship of Senator Joseph S. Clark, to speak about Sweden's labor market policies. On that occasion I said that I and my colleagues had not come here pretending to carry with us solutions or even suggestions. We confined ourselves to tell how we have tackled certain labor market problems in Sweden—and we hoped that our hosts would find the information useful in their efforts to meet problems confronting the United States.

This time I cannot be quite as modest as that. I am talking this time of a problem confronting the whole world, a problem of equal concern to all nations. This is a field of activity in which a concerted international action is necessary. Small countries like mine can do little more than speak of it, undertake some pilot projects, finance some subsidiary activities as a part of a great program.

U.S. MUST MAKE A GREATER CONTRIBUTION

The problem requires action on the part of all nations—and not least the leading nations of the world. The U.S. Agency for International Development has taken up important activities in this field recently. The United States has started the engines—and we are hopeful. But I daresay that we are waiting impatiently for the take-

off. We understand now that the U.S. Government is aware that this country must make a greater contribution to the solution of the world's greatest problem. I am sure it can do it. I trust it will do it. But, sir, time is running short.

I thank you.

Senator GRUENING. Thank you very much, Mr. Michanek, for a wonderful presentation and such a striking and stimulating demonstration of what your country has done, being really a leader, a world leader in this important field and pointing the way to others, including the United States. And I am happy to report that finally there is a breakthrough here in public opinion and related action. I think the Government of Sweden cannot be congratulated too warmly for the enlightenment it has shown and the actions it has taken. Considering the relative resources of our two countries, Sweden is to be greatly commended.

You have said many things which invite comment but perhaps we had better reserve some of the questions until your other associates have testified.

Senator Metcalf.

". . . FAMILY PLANNING AND POPULATION CONTROL . . . A WAR THE WHOLE WORLD IS CONCERNED WITH"

Senator METCALF. I concur, of course, in complimenting you on the fine statement and I also concur in congratulating your Government for pioneering in this very important field. I remember reading a recent article in one of our foremost magazines where it was suggested there was a decade of war, a war against facism and nazism and then our concern with communism, but we are entering into an era where we are having a war against hunger and unless we do something about family planning and population control, this is a war the whole world is concerned with.

I would like to comment on some of your statements, but I am interested in hearing your colleagues and I am going to have to leave at 10 minutes to 11, so I am going to ask the chairman to put the next witness on so I can hear as much of it as possible.

Senator GRUENING. Senator Metcalf has to leave because he has to preside over the Senate when it convenes at 11 o'clock.

Mr. Michanek, which of your colleagues would you like to have testify next?

Mr. MICHANEK. Professor Borell, please, sir.

BIOGRAPHIC STATEMENT: ULF BORELL

Senator GRUENING. Dr. Ulf Borell, professor of obstetrics and gynecology, is chairman of the Swedish International Development Authority's advisory group on family planning.

Dr. Borell was born on July 25, 1916, in Visby, Gotland, Sweden. He was graduated licentiate in medicine in 1943 and received his M.D. in 1945. Dr. Borell received postgraduate training in 1946 as a resident of the department of gynecology, radiumhemmet, Karolinska Sjukhuset, Stockholm. From 1947 to 1949 he was a resident at the department of surgery at Danderyd Hospital. From 1950 to 1958 he was a resident at the department of obstetrics and gynecology at the Karolinska Sjukhuset, Stockholm.

In 1959 and 1960 Dr. Borell was head of the department of obstetrics and gynecology at the Sahlgrenska Sjukhuset, Gothenburg, and professor at the University of Gothenburg.

Since 1961 he has been head of the department of obstetrics and gynecology, Karolinska Sjukhuset, Stockholm, and professor at the Karolinska Institute in Stockholm.

Dr. Borell is the author of more than 100 scientific publications in gynecology, obstetrics, and endocrinology. He is married.

STATEMENT BY ULF BORELL, M.D., PROFESSOR OF OBSTETRICS AND GYNECOLOGY AND CHAIRMAN OF SIDA'S ADVISORY GROUP ON FAMILY PLANNING

Professor BORELL. Mr. Chairman, as chairman of the Swedish International Development Authority's advisory group on family planning and as professor of gynecology and obstetrics at the Karolinska Institute in Stockholm, I wish to thank the Subcommittee on Foreign Aid Expenditures for this opportunity to describe the methods and research in family planning in Sweden.

My remarks today are prepared to tell you more about the family planning methods used in Sweden, the Swedish legislation as it concerns abortion, present research in human reproduction in Sweden, and the need for international cooperation in demographic research projects.

". . . SUBCOMMITTEE HAS PROVIDED A PUBLIC FORUM . . ."

If you should wish me to expand on a particular portion of my testimony, I will do so. This subcommittee has provided a public forum from which the population problems which affect all of us may be discussed and, perhaps, some new light will be directed toward the problem areas.

Let me begin by discussing family methods used in Sweden.

Already in the 1930's the birth rate was very low in Sweden, being 14 to 15 births per 1,000 inhabitants (now it is roughly 16). Oral contraceptives and intrauterine devices were not available at that time, but the conventional contraceptive methods were widely used. Legal abortions were only few, illegal abortions—although statistics are not available, of course—were too many.

150,000 SWEDISH WOMEN TAKE PILL TODAY

As Sweden has no problem of overpopulation there was no urgent national need for new contraceptive methods, all work done within the field of birth control being designed to help individual couples or families. It is only recently that the Swedish National Board of Health has sanctioned the use of oral contraceptives and intrauterine devices, except for cases of gynecological diseases in Sweden; in such cases they have been long used. The effectiveness of the pills is superior to any other of the available contraceptive methods. Today, out of approximately 1.8 million women aged 15 to 45, about 150,000 take the pill which can be obtained only on a doctor's prescription. This measure has been taken to follow up users of these drugs in order to enable early diagnosis of possible serious side effects.

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For a long time objections have not been raised against giving advice on family planning on a large scale. Swedish physicians, in general, are not inhibited by ethical or religious reasons for prescribing contraceptives.

The possible side effects of oral contraceptives have been much discussed by physicians and laymen on television, on the radio, and in the press.

SWEDISH DOCTORS ASKED TO REPORT COMPLICATIONS FROM ORAL CONTRACEPTIVES

The Swedish National Board of Health has instructed the members of the medical profession to record and report any unusual complications suggestive of being due to oral contraceptive therapy. Cases of thromboembolic disease including thrombophlebitis have been reported, but there is no convincing evidence of a relationship between oral contraceptives and these diseases. Our experience concerning this point agrees with the observations made in other countries.

On the other hand, we have found that a slight risk of hepatic dysfunction, that is to say, disturbed liver function, was associated with oral contraceptive therapy. Following cessation of oral contraceptive therapy, however, the disturbed hepatic function promptly returned to normal in all cases found. We have now made it a rule not to prescribe oral contraceptives to women with a history of hepatic disease or gall bladder trouble. The facts involved in the causation of hepatic dysfunction are unknown. It has been suggested that this complication was due to drug allergy or genetic factors. It is rather surprising that little attention has been reported to this side effect in other countries as it is easy to detect.

Because hepatic disease is quite common in developing countries, special attention should be given to a possible increase in its incidence in users of oral contraceptives.

Swedish doctors engaged in family planning in Pakistan have tried to introduce oral contraceptives in several clinics in that country. Unfortunately, discouraging results were obtained. The majority of the women who had been given the drugs free of charge discontinued taking them after 1 or 2 months, probably because they had not been informed by the Pakistani doctors that they might experience initial side effects such as nausea and vaginal bleeding. In my opinion it is not expedient to give oral contraceptive therapy on a nationwide scale in developing countries because the routine work of doctors and their assistants is so exacting that they have no time left for giving detailed directions for the use of oral contraceptives. This is a very time-consuming task, particularly in the case of illiterate women.

SOUTH KOREA AND TAIWAN USE IUD

A few developing countries such as South Korea and Taiwan appear sucessfully to have checked population growth by the use of intrauterine contraceptive devices. These are easy to apply, and the risk of complications appears to be negligible.

Scientific surveys from different countries would indicate that increasing motivation for family planning brings in its wake an increasing incidence of abortions until an efficient family planning pro-

gram has been implemented. I suggest that governments embarking upon national family planning should be aware of this possible interrelationship.

INDUCED ABORTION VIRTUALLY UNKNOWN AMONG USERS OF ORAL CONTRACEPTIVES

The high degree of effectiveness of oral contraceptives, however, has meant that induced abortion is virtually unknown among users of oral contraceptives as unplanned pregnancies occur seldom, if ever. The intrauterine devices are less consistently effective than the pill due to the expulsion rate of approximately 15 to 20 percent. Thus, the widespread use of these devices might tend to increase the demand for abortion.

Then I would like to come to the second point, the Swedish legislation on abortion. Prior to 1938 in Sweden, an artificial miscarriage was always regarded as a punishable offense. It had nevertheless become an accepted practice that abortion should not be punishable if childbirth would be likely to endanger the woman's life or health. In this purely medical indication for abortion it was required that two physicians should confirm in writing the necessity for an operation. The number of illegal abortions apparently was high at that time, roughly estimated at 20,000 a year.

Under the 1938 act the interruption of pregnancy was permitted in some well-defined cases, where there were strong medical, medico-social, humanitarian or eugenic reasons. Of great importance was that a legal abortion could be performed if—due to the woman's illness, physical defect (medical reason) or weakness (medical-social reason)—childbirth would seriously endanger her life or health. The law, however, hardly led to the anticipated reduction in the number of illegal abortions.

In 1946 a new indication for legal abortion was added, abortion being allowed also if the woman's living conditions were such that "her physical or mental powers would be seriously impaired through the birth or care of a child." Thus the advisability of abortion should be evaluated on the basis of environment, social, and financial conditions, as well as medical considerations.

In the beginning of the 1950's, the annual number of legal abortions was around 6,000, to compare with about 100,000 live births annually. During the second half of the decade, the annual legal abortion figures gradually dropped and reached the level of around 3,000 per 100,000 live births in 1960. In later years again the figures have increased to around 4,000, now to compare with 120,000 live births per year. My personal conviction is, that the number of illegal abortions has decreased very substantially since the 1930's—due to better contraceptive techniques, improved social welfare measures, et cetera.

LEGISLATION, SOCIAL SECURITY, WELFARE MEASURES—FACTORS IN LOWER ABORTION RATE

Other preventive measures have been taken with a view to counteracting abortion. Legislation has been passed which prohibits dismissal from employment on account of pregnancy or childbirth. Services for the support and advice of pregnant women have been es-

tablished. A number of social security and welfare measures have been added in order to improve the living conditions of children, to support the natural desire for raising a family, and to increase the feeling and the actual state of security of expectant mothers.

In view of the injury to the fetus caused by thalidomide, the Abortion Act was again revised in 1963. Abortion is now allowed if the child might be assumed to suffer from a serious disease or physical defect due to injury during its fetal life.

ONLY 3 PERCENT OF 700 FOREIGN WOMEN GRANTED ABORTIONS FROM 1962 TO 1965

The Swedish Abortion Act of 1938, as amended, makes no distinction between Swedish and foreign citizens. In the last years, an increasing number of foreign women have come to Sweden to get an abortion, particularly since the reporting of such a case in the world press 3 years ago. From 1962 to 1965, more than 700 foreign women applied for abortion at the Karolinska University Hospital, 292 of whom came from the United States. Only in 3 percent of all these cases an abortion was granted under our law. Legal abortion was performed in only 13 of the 292 cases from the United States (4.5 percent), upon decisions by the National Board of Health. In approximately 65 percent of the cases considered there was no indication at all for abortion according to the Swedish law; purely socioeconomic reasons were given, unmarried status referred to, et cetera.

SWEDISH LEGISLATION AIMS AT BETTER ALTERNATIVES TO ABORTION

To a large extent foreigners lack knowledge of the preventive emphasis in the Swedish abortion legislation, which aims at finding better alternatives than abortion by various relief measures. Since those who come to Sweden in these cases normally cannot be given social aid, the long journey often results only in disappointment and money spent in vain. In practice it is only on medical grounds that a foreign citizen can gain permission for abortion in Sweden. But as a rule in such cases abortion can be obtained in the applicant's homeland as well.

About 25 percent of the women to whom I have referred who came from the United States had been advised to come to Sweden by a physician in the United States in order to get a legal abortion. The remaining 75 percent had been misled by newspapers and magazines.

SWEDEN STEPS UP RESEARCH IN HUMAN REPRODUCTION

Then I come to point 3: present research in human reproduction in Sweden.

Swedish research in human reproduction is characterized by the philosophy that whenever possible, basic information on these processes should be obtained in clinical experimentation. At the Karolinska University Hospital in Stockholm, research is concentrated on the study of endocrine regulation of reproductive processes in the human female.

The present research work at my department has two major directions; namely:

(*a*) Studies on the endocrine regulation of ovarian function;
(*b*) Investigations of the endocrine regulation of gestation in the human being.

The mode of action of oral contraceptives and intrauterine devices is incompletely understood. We believe that an improved knowledge of the mode of action of these agents must result in improved methods of regulating fertility and sterility.

Present studies are directed toward the exploration of the mode of action of a new type of contraceptive pill method which is called low-level supplementation. This method is believed to interfere with fertility without inhibiting ovulation.

THREE-PRONGED ENDEAVOR PURSUES RESEARCH IN REPRODUCTIVE ENDOCRINOLOGY

The other line of research involves studies on the endocrine regulation of gestation in the human. These studies led to the development of a new concept, that of the feto-placental functional unit, and we think that as a result of these studies it will be possible to find specific steps in the hormone production which are vulnerable to exogenous hormonal or pharmacological influences.

These studies were made possible in part by a research grant of $500,000 from the Ford Foundation, but the work is also supported by the U.S. National Institutes of Health (just now a training grant of $350,000 is pending), and the Medical Research Council of Sweden ($12,000 yearly). In addition, the international pharmaceutical industry has also shown a great interest in supporting the basic research conducted in this laboratory.

During the past 3 years, 25 postdoctoral fellows were trained in reproductive endocrinology at the laboratory; 11 of these came from the United States.

It is hoped that this training program can be extended in the near future to include fellows also from South America and from the developing countries in Africa and Asia.

Engagement in the population problem in the economic development of developing countries requires adequate methods for analysis of the situation and trends and for the evaluation of the efforts. As for the population aspects, research is now carried out at the Demographic Institute, University of Gothenburg, Sweden. The purpose is to develop so-called demographic models as a scientific instrument for studying the interrelationships between the population changes and the economic and social development in various types of populations and economies.

It seems desirable to establish international cooperation in this field both through a suitable international body and through direct teamwork between individuals and institutes in various countries, developed as well as underdeveloped.

Thank you.

Senator GRUENING. Thank you very much, Professor Borell.

We have joining this Subcommittee on Foreign Aid Expenditures, Senator Karl Mundt from South Dakota—a member of the subcommittee, who is otherwise engaged and cannot stay very long. But he is certainly welcome here.

Senator MUNDT. Thank you very much.

BIOGRAPHIC STATEMENT: CARL WAHREN

Senator GRUENING. Before we start the question period, I think I would like to call upon Mr. Carl Wahren who is deputy head of the planning division of the Swedish International Development Authority.

He was born in Norrkoping, Sweden, on April 28, 1933. He and his wife, Catharina, have one daughter. He is a member of the Lutheran Church.

Mr. Wahren graduated from the University of Uppsala in 1955 and the following year received his diploma at Collège des Sciences Européens, Paris. In 1960 he was awarded his M.A. in international relations at the University of Southern California. One year later, in 1961, he earned the equivalent of a Ph. D. at the University of Uppsala.

He was first secretary of the Swedish Agency for International Assistance in 1962, assistant head of division in 1964, and was named to his present post in 1965.

In 1957 he was Secretary General of the Swedish Liberal Students Organization. For the past 4 years he has been a lecturer in international politics at the University of Uppsala.

Mr. Wahren was the Swedish delegate to the working group on science aid of the committee for scientific research in 1965–66 for the Organization for Economic Cooperation and Development. He was a member and secretary of the working group on educational assistance to the underdeveloped countries in 1962 and 1963, and was a member of the working group on science aid of the Royal Swedish Academy of Engineering Sciences in 1964–66.

I have read an interesting reprint from Science, written in 1962 when Mr. Wahren was secretary of the Swedish Agency for International Assistance. It discusses Mr. Wahren and the Swedish program that was being carried out in Ceylon at that time.

I shall direct that a copy of this article be included at this point in the record of this hearing.

EXHIBIT 87

BIRTH CONTROL: SWEDISH HELP TO UNDERDEVELOPED NATIONS

(By D. S. Greenberg, reprinted from Science, Vol. 137, pp. 1038–1039, Sept. 28, 1962; from the book: "The Population Crisis and the Use of World Resources," edited by Stuart Mudd (Dr. W. Junk Publishers—The Hague: 1964), pp. 359–362)

Sweden plans to make birth control assistance a major part of its rapidly expanding foreign aid program. The program has grown from $10 million to $25 million over the past year, and the Swedes are committed ultimately to channel 1% of their gross national product—about $17 billion at present—into various types of foreign aid.

Officials of the recently formed Swedish Agency for International Assistance are not overly optimistic about what can be done to decelerate population growth in the underdeveloped nations, but they realize that Sweden is the only aid-giving country that dares touch the subject. The Swedes, in determining where their relatively limited resources could be most effective in the underdeveloped countries have decided to emphasize birth control. It will by no means be the Swedes' only or principal contribution to foreign aid; their excellent work in vocational training, among other things, is also being made available to these countries, but the prospects are that Sweden, alone of all governments, will be willing to devote relatively substantial sums to promote birth control in any country that wants its help.

It is already conducting small programs, totaling $350,000 a year, in Ceylon and Pakistan and, on the basis of the results achieved there, has been asked for similar assistance by the Tunisian Government. A number of other governments have also made detailed inquiries, leading Swedish aid officials to predict that within 3 or 4 years family planning assistance will comprise the largest single item in Sweden's country-to-country foreign aid effort. Two-thirds of Swedish aid funds are channeled through the U.N. technical assistance program, but plans call for an across-the-board expansion of all activities.

The Swedish interest in promoting birth control, or family planning, is not accompanied by any comforting illusions about the enormous problems involved in decelerating population growth among illiterate, impoverished people. But the Swedes consider it close to futile to attempt to promote economic development without an accompanying effort to reduce births. And from their experiences in Ceylon and Pakistan they are cautiously hopeful that Western family planning techniques can be taught to the underdeveloped nations.

"There is no assurance that we will succeed," Carl Wahren, secretary of the Swedish aid agency, said in an interview, "but the problem is so urgent that it is utterly irrational to do nothing about it."

THE CEYLON PROJECT

The Ceylon project, which was Sweden's first effort to assist family planning in the underdeveloped countries, was started in 1958 by the quasi-official organization that ran Swedish foreign aid until the Agency for International Assistance was formed last January. The Swedes report that the Ceylonese showed no timidity in requesting assistance. One gets the impression, however, that Swedish planned parenthood groups had something to do with stimulating the Ceylonese request. The Swedish response was tiny by American foreign aid standards. One physician was sent to Ceylon to determine whether it would be possible to develop a program that would rely on existing Ceylonese public health personnel. Two districts, each with a population of about 7000 persons, were selected for the project: one, a village area about 25 miles south of Colombo, with an agricultural population that was about 20% illiterate, had a 1959 recorded birthrate of 31.2 per thousand; the other, a tea-estate area in a mountainous region, inhabited by Indian Tamils, a migratory people who are virtually at the bottom of the Ceylonese social scale, was 75% illiterate and had a recorded birthrate of 39.5 per thousand.

By 1960 the birthrate in the village area had dropped to 27.1, and last year it was down to 23.9 per thousand. The Swedes say that because of the second area's transitory population they have been unable to gather reliable statistics, but the results there appear to have a great deal to do with the tempering of optimism. Swedish aid officials also concede that the apparently favorable results in the village area may be deceptive. They note that many of the inhabitants commute to Colombo, where it is not unlikely they have picked up some birth control information; the village population had a relatively high literacy rate, and, perhaps most significant of all, no figures are reportedly available on the population trends prior to the start of the program.

In the absence of contrary evidence, however, the Swedes are acting on the assumption that the program played a decisive role in pushing the area's population growth sharply downward, and they feel they have picked up some important lessons that may be applicable elsewhere. The Ceylonese Government was sufficiently satisfied to request extension of the program to still another district.

Wahren, whose duties include administration of the family planning program, said that one of the principal conclusions drawn from the Ceylon project is that more stress must be placed on using and improving educational techniques and devices such as audiovisual aids. "We found that we first had to get across the fact that it is not an inexorable law of nature for women to bear children every ten or eleven months," he said. "The women in both districts were astonished by this information, and found it rather difficult to accept. But once they grasped this fact, they wanted to know more and we found that they were hungry for information."

"The whole basis of our approach," Wahren explained, "was to make it perfectly clear that our desire was to promote family planning and not merely to suppress births. We have helped infertile couples to have children. We are in this program to help the people have a better life for themselves and their children, and any other goal will not succeed."

The Ceylon project, which may well be the pattern for future Swedish family assistance planning, stuck very carefully to the original aim of training local public health personnel. "This is absolutely necessary for us," said Per-Erik Rönquist, who is chief of the aid agency's planning and budget division. "Sweden does not have manpower to export, our principal asset is technical know-how and if we are to succeed, we must find ways to use our limited manpower to transmit that know-how to local personnel as quickly and as efficiently as possible." Under the guidance of the lone Swedish physician assigned to the project, Ceylonese personnel quickly became integrally involved in the program. The initial approach in the inhabitants of the district was usually made in a fairly casual manner, often during a pre- or postnatal checkup at a public health clinic. This first contact was followed up by a visit to the home, Rönquist and Wahren explained, where additional information was offered but in doses no larger than the couple seemed willing to accept. Finally, contraceptive devices, principally condoms provided by the Swedish Government, were made available without charge.

"The project has cost only $50,000 a year and has employed only one physician. We feel there are a lot of questions that remain to be answered, but we are encouraged," Wahren said.

While the Ceylon project has been entirely under Swedish direction, the Swedish work in Pakistan has been integrated into the country's large scale family planning program. With an initial annual budget of $300,000, the Swedes have sent three medical teams to Pakistan, each consisting of a physician and a nurse. They also have provided a mobile clinic and have brought three Pakistanis to Sweden for training in the production of educational films and other visual aids. "The educational aspects are critical," Wahren explained, "since we keep running into such superstitions as that contraception will make you impotent or will produce sickly children."

WIDE POLITICAL SUPPORT

While the American foreign aid program annually produces a major battle between Congress and the Administration, Sweden's expanded foreign aid program appears to have the nation's blessing. Swedish aid officials point out that there has been some opposition to the plan to commit 1% of the gross national product to foreign aid but it has come from those who feel the contribution should be greater.

Senator GRUENING. Mr. Wahren, we are very happy to have you here. Will you please proceed?

Mr. WAHREN. Thank you very much, Mr. Chairman, but I have not prepared any statement.

Senator GRUENING. Do you want to make any comments on the previous testimony or do you just want to start the question period?

Mr. WAHREN. I think I prefer the latter, thank you.

CONTRACEPTIVES CUT ABORTION RATE IN SWEDEN

Senator GRUENING. Dr. Borell, I would like to ask one or two questions of you. Your testimony clearly indicates, does it not, that making contraceptive information available has tended very definitely to decrease the number of abortions? Is that correct?

Dr. BORELL. Yes, that is right.

Senator GRUENING. So that really you have saved women from the costs, worry, pain, and risk and in the cases of illegal abortions, possible infection and death. Is that correct?

Dr. BORELL. Yes.

BORELL SAYS CONTRACEPTIVE USE AND KNOWLEDGE BENEFICIAL TO SOCIETY

Senator GRUENING. So your testimony would add up to saying that contraceptives and knowledge of contraceptive techniques is both of

personal and of social benefit to individuals and of social benefit to society.

Dr. BORELL. Yes, it is.

Senator GRUENING. In the first part of your testimony you say "the effectiveness of the pills is superior to any other of the available contraceptive methods." Do you think it is superior to the intrauterine device?

Dr. BORELL. Yes, it certainly is because the oral pill is virtually a foolproof method for preventing conception if the instructions for use are strictly followed. When using the device there is a failure rate which is not very great. Several factors are involved in the failure rate. One is that the intrauterine device may be expelled. This happened in about 20 percent. In some of these cases the woman was not aware of the expulsion. Another important factor is that even in the cases in which the device remains in position it does not afford 100 percent contraceptive protection.

Senator GRUENING. What do you think research to develop other types of oral contraceptives might produce that the present oral contraceptives lack? In what way could they be superior?

Dr. BORELL. Although we know quite a lot about the mode of action of the oral pill, our knowledge of the details is still incomplete. We know that it inhibits ovulation, but we do not know what happens if a woman takes the pill over a prolonged period; that is, we do not know the late effects. It would be desirable to have a drug available, which has an effect other than ovulation inhibiting and causes only minor changes. Such a drug is now in fact available. Its advantage is that its hormone content is much lower than that of the pills now used, and it does not inhibit ovulation. This drug has proved to be nearly 100 percent effective.

Senator GRUENING. I think that is a very satisfactory answer. Do you feel that the birth control program that your government has adopted is well received now by the people of Sweden?

Dr. BORELL. Yes, it is; probably for the following reasons. In Sweden nearly every pregnant woman is delivered in a hospital; that is, in approximately 99.9 percent of all cases. All pregnant women are carefully followed up during their pregnancy and after delivery. They are instructed to attend again, after about 2 or 3 months. They usually all turn up and then we give advice on contraceptives which are now used by nearly every woman. Naturally, we suggest and discuss several methods and leave it to the woman to choose the one she likes best.

SUBFERTILITY STUDIED IN SWEDEN

Senator GRUENING. It is interesting to note that your program also includes aid in cases of subfertility; that is, in cases of parents who are unable to have children and would like to have children. I think that is a very important contribution. In other words, your program is also designed to assist families in planning whether for more children or fewer children, depending upon the circumstances. Is that correct?

Dr. BORELL. Yes. It is certainly very important to advise also the women, who are childless, and try to solve their problems which often are very heavy burdens to the family.

Senator GRUENING. Your experience in Ceylon and Pakistan is important to us because of the growing demand that the United States introduce contraceptive aid in the foreign aid program. Do you find that in these underdeveloped countries where many women are illiterate there are problems that do not exist when dealing with a literate and intelligent population?

Dr. BORELL. Yes, sir. I have tried to explain that the method of choice in those countries should be the intrauterine device. It is the only available method that requires medical supervision on one occasion only. With the pill one has to follow up the woman rather carefully for a long period of time, and this is a very time consuming task for the physician.

Senator GRUENING. We had testimony last week from the professor of obstetrics and gynecology at Tulane University in Louisiana to the effect that some of the more ignorant, illiterate people with whom clinical contacts had been made actually had no knowledge that the sexual act was connected with childbirth. Has there been a like experience in Ceylon and Pakistan, that the people have to be educated in the elements of human reproduction?

Dr. BORELL. This is quite unknown to me, sir.

Senator GRUENING. That has not come to your knowledge?

Dr. BORRELL. No.

Senator MUNDT. I would like to inquire—I understand that you are, through the Swedish foreign aid program, helping with population control in Pakistan and Ceylon. Are there other countries, too.

PALESTINE REFUGEES TO START FAMILY PLANNING PROGRAM

Mr. MICHANEK. Well, as I said, sir, we have started a smaller activity in Tunisia and one is about to start in the Gaza strip for Palestine refugees.

Senator MUNDT. Were you invited to those countries originally, or did you suggest that you had this service available?

Mr. MICHANEK. It is difficult to say really from where the questions have come originally. I know that in the case of Ceylon the voluntary Planned Parenthood Association was very active in trying to get the government to understand that it had to start operations in this field, and as a result of, as it were, a tripartite dialog this proposal came forward from the Government of Ceylon.

With respect to Pakistan, the government certainly was influenced by its neighbor country, India, where a family planning program had started quite a number of years before any contacts were taken between the Governments of Sweden and Pakistan.

Senator MUNDT. Is this run by the government as it was in India or by a local association?

Mr. MICHANEK. The Indian program is a government program run with the assistance of voluntary associations.

Senator MUNDT. What is the longest period of time that you have been making your services available to any foreign country? Is it 5 years?

8-YEAR SWEDISH PROGRAM IN CEYLON EVOLVES INTO GOVERNMENT PROGRAM

Mr. MICHANEK. No; it is about 8 years since we started the program in Ceylon.

Senator MUNDT. Eight years?

Mr. MICHANEK. Yes, sir.

Senator MUNDT. So you have a pretty good experience table in Ceylon?

Mr. MICHANEK. Yes; pretty good.

Senator MUNDT. Is it a program gaining in popularity and gaining in use and operation or is it increasingly difficult to get the cooperation of the people?

Mr. MICHANEK. It is increasingly easy to get the cooperation of the people. The Ceylon program was started as a small pilot project working in three different pilot areas. It is now incorporated in a national program covering the whole island under the direction of the government.

CONSULTATIVE CLINICS TO PARENTS OFFERED ON LIMITED SCALE

Senator MUNDT. One other question: Is your program strictly limited to the training of doctors and nurses or do you provide direct consultative clinics to the parents, and so on?

Mr. MICHANEK. To some degree only we are able to provide consultative clinics. This is so because of the shortage of Swedish doctors able or willing to go to serve in these countries and to the very great lack of experience in the whole field of family planning in developing countries, which is a characteristic of Sweden as well as of other industrialized countries.

Senator MUNDT. Well, you have a very limited sphere of activity in these consultative clinics but you also, I presume, train nurses and doctors in addition to providing these direct services to the parents?

PAKISTAN PROVIDING "GREAT TRAINING PROGRAM"

Mr. MICHANEK. In certain pilot areas direct services to the parents have been given in Ceylon. The program has been mainly a training program in which medical and paramedical personnel has been involved. In the case of Pakistan, such activities have been left to the government which is now undertaking a great training program in the country.

FOUR HUNDRED PARTICIPATING CEYLONESE PARENTS OF PRODUCTIVE AGES LOWER BIRTH RATE 30 PERCENT

Senator MUNDT. Back to Ceylon; do you have any statistics, either charts or records or what we call over here guestimates of the number of parents that you have had come to your clinics altogether in Ceylon and also the number of doctors and nurses who have received training?

Mr. MICHANEK. I should like to ask Mr. Wahren to reply to that question, sir.

Senator MUNDT. That is good because he has not made any statement.

Mr. WAHREN. Thank you, Senator Mundt. I think you can say roughly half of the families are steady customers in our main research area which is situated some 30 miles outside of Colombo.

Senator MUNDT. You say half, half of about how many families would be what?

Mr. WAHREN. Well, the total population is roughly 7,000 to 8,000 people and we figure that there are about 800 families in the productive ages.

Senator MUNDT. That would be roughly 400?

Mr. WAHREN. Yes, roughly. And I think perhaps the question could be answered the other way around indicating, as Mr. Michanek mentioned, that the birth rate has gone down roughly 30 percent during the period 1960–65. Statistics from the first 2 years of action are incomplete.

Senator MUNDT. Is the drop in the birth rate something unique to the area in which you served or was it over the country as a whole?

Mr. WAHREN. This is a difficult question to answer because of the lack of firsthand statistics in Ceylon as well as elsewhere in developing countries. We are now performing a final analysis of the material, including an analysis of material from the test area, and within a few months we shall be able to provide a better answer than is possible at the moment. However, it is clear that there is a tendency for a drop in the birth rate all over the island but not as fast as in our research areas.

Senator MUNDT. Now, as to the other part of my question, in this test area, how many doctors or nurses would you say you have trained, or I think you said you trained other people to carry on in the absence of the Swedish personnel?

FOUR HUNDRED CEYLONESE ACTIVE AS TRAINED FAMILY PLANNING PERSONNEL

Mr. WAHREN. Well, the Swedish personnel has been extremely limited, as our principle has been to try to work as much as possible with local personnel. As a matter of fact, we only had one Swedish doctor as permanent foreign personnel since 1958. For shorter periods of time, however, we have attached a statistician, a demographer, an educational specialist, and another doctor to the project. Now the whole project is centered around the local health personnel that does already exist in this subdivision of the islandwide national health scheme. So actually we are using the local personnel for all services while the Swedish doctor is administrating, training, and advising. The training activities have not been limited to our research areas, of course, but have included the surrounding districts. By now roughly 400 health people such as doctors, male health inspectors, female health visitors, nurses and midwives have received family planning training.

Senator MUNDT. I think that answers my question. If I understand it, there are now between 350 and 400 people in Ceylon who have become knowledgeable technicians in the field of population control as a result of the Swedish aid program; is that right?

Mr. WAHREN. Yes.

SENATE INTRODUCED RESOLUTION RECOMMENDING FOREIGN CONTRACEPTION INFORMATION AVAILABILITY

Senator GRUENING. I think you should know that Senator Mundt is a member of the Foreign Relations Committee of the Senate and I know this question has been discussed before that committee. There has been an increasing feeling that something must be done and I believe—you will correct me, Senator Mundt, if I am wrong—that a resolution or amendment was introduced in the Senate foreign aid bill draft recommending some action in this field, but this was watered down in the House version. I think the Senate version was for a specific action to make contraceptive information available abroad where it was sought, but the House version watered it down.

Senator MUNDT. I think that is approximately correct. At least some action was taken to give our American foreign aid program some capacity in this area.

S. 1676 COULD BE MANDATE FOR GOVERNMENT ACTION

Senator GRUENING. And, I think it is pretty clear that something more will be done if this legislation, S. 1676, is enacted as I hope it will be. There will then be a definite mandate for our Government to act. There has been a great change in public opinion in very recent months. On the eve of our first hearing we had a letter from former President Eisenhower who when President expressed the view that the Government should not participate in this activity. This was something he felt at that time that the Government should not touch. But in this letter written less than a year ago he expressed the view that he now considered that this was one of the most pressing problems of our time and that it was certainly the duty and function of the Government to participate. And President Johnson, since his inauguration, has made not fewer than 19 statements urging something be done to check the burgeoning population. So I think we can reasonably expect that we shall shortly follow the enlightened example of Sweden along this line.

I have one question to ask you, Mr. Michanek. On page 551 you say: "Financial assistance is now being given by Sweden to cover the costs in foreign currencies for purchases abroad (and not in Sweden, by the way) of contraceptive supplies."

Could you tell us where these contraceptive supplies originate?

JAPANESE CONDOMS PURCHASED BY SWEDES FOR PAKISTANI PROGRAM

Mr. MICHANEK. They are being purchased in Japan. We had discussions going on with American companies because of a finding that probably the Japanese condoms were not good enough for storing in Pakistani climatic conditions, but having consulted a well-known American specialist on this we found that the Japanese quality was good enough, and as the supplies were cheaper to buy there we are now buying them in Japan.

Senator GRUENING. There is no manufacturing of contraceptive devices in Sweden?

Mr. MICHANEK. Not at this time.

Senator GRUENING. Not at the present?

Mr. MICHANEK. No. Not in the field of condoms, which was the kind of contraceptive needed in Pakistan.

Senator GRUENING. Is the Government of Sweden planning to expand its program to other countries on request?

Mr. MICHANEK. Yes, it is.

MICHANEK LAUDS WIDER ATTENTION POPULATION PROBLEMS RECEIVE

Senator GRUENING. We have a number of other bills pending in the Senate now, some introduced by Senator Tydings of Maryland, aiming to use the counterpart funds which are accumulating in various countries for the population program and I suspect that will be of great aid in bringing this program to wider attention.

Mr. MICHANEK. I am sure it will be, sir. And it has already been the case in a couple of countries, as I have understood from the discussions we have had with representatives of the U.S. Agency for International Development.

U.N. MAY SOON UNDERTAKE OPERATIVE POPULATION PROGRAM

Senator GRUENING. Well, we are very grateful to you. You indicate that there will be an operative program undertaken shortly by the United Nations which, in your testimony you pointed out, has not been the case here, too. Your efforts have not been received until very recently in the U.N.; is that correct?

Mr. MICHANEK. Yes, it is. There has been a general difficulty to get resolutions carried in the United Nations accepting services in this field—but we are very hopeful now.

Senator GRUENING. You say the Swedish Government is ready to support financially, by funds-in-trust, and if possible otherwise, operative programs which UNICEF, WHO, or others might be willing to start.

SWEDEN TO SUPPORT UNICEF PROGRAMS IN DEVELOPING COUNTRIES BY SPECIAL FUNDS-IN-TRUST

Mr. MICHANEK. Yes, sir. We have indicated, for instance, to the Board of Directors of the United Nations Childrens Fund, or UNICEF, that we are willing to support by way of special funds-in-trust to that organization, programs which they will undertake in developing countries.

Senator MUNDT. What was the reaction of the Board against that? Was it affirmative?

Mr. MICHANEK. Last year at a meeting of the Board of Directors of the UNICEF, we found to our great satisfaction we could cooperate very well with the U.S. Government representatives on this occasion proposing that the UNICEF Board should undertake an investigation into the actions possible under the UNICEF programs in the field of population. A positive position was taken in the Board and the Director General of the UNICEF was called upon to report to the Board meeting which is going to be held within a couple of months this year on his findings. We are now waiting to hear the results. And in the meantime, if I may repeat it, we have told UNICEF that we are interested in financing the operations if they are willing to undertake them.

SWEDEN GIVES CONTRACEPTIVE INFORMATION TO WED OR UNWED MOTHERS

Senator GRUENING. Now here in this country there are efforts to give contraceptive information as part of various aid programs, but there is a great resistance to giving this to unwed mothers. Is there any similar attitude in Sweden or do you give it alike to married and unmarried women?

Mr. MICHANEK. We give it alike.

GRUENING ACCLAIMS SCANDINAVIANS AS "ENLIGHTENED PEOPLE"

Senator GRUENING. Can you tell me if there is legislation similar to that which Sweden has enacted in this field which has been enacted in the other Scandinavian countries such as Norway, Denmark, and Iceland?

Mr. MICHANEK. The attitude to these methods is much the same in the Scandinavian or Nordic region.

Senator GRUENING. They are all very enlightened people.

Senator MUNDT. You may have read this before I came into the room, but I am wondering, in your experience in Sweden, has there been a sharp change in the birth rate since you have inaugurated this program?

Mr. MICHANEK. There was a gradual change in the birth rate in Sweden over a long period of years, already before Government services in this field had been undertaken. Already during the 1930's the birth rate dropped to something like 13 to 14, and since that time it has been pending between 14 and 20.

UNDERPOPULATION A PROBLEM IN SWEDEN

Senator MUNDT. Your population problem in Sweden—is it one of overpopulation for the size of the land or is it primarily one of families who lack proper economic background to support a family?

Mr. MICHANEK. There is no problem at all about overpopulation in Sweden. There is rather a problem of underpopulation.

Senator MUNDT. Something motivated you besides the fact you are underpopulated to install a birth control program?

SUBFERTILITY INFORMATION—A HUMAN RIGHT

Mr. MICHANEK. This is a question of freedom of choice and of the human right to knowledge, and we feel that everybody should have knowledge of contraceptive means as well as knowledge of how to increase the number of children in the family in case of subfertility. This is a question of human rights, as I said, and of social welfare.

Senator MUNDT. Is there a tendency in Sweden for the families of the largest number of children to be in the high-income levels or the low-income levels—do you have the problem that is sometimes reflected in this country where people who might be able to clothe and educate and support a family of 3 may have a family of 10 and lack the opportunity to support their family—does that prevail in Sweden?

Mr. MICHANEK. Certainly in the earlier days there was the tendency that the largest families were in the lower income brackets. Nowadays in all income brackets the average number of children is small, the

number of children in the family only being between two and three. I have heard about certain tendencies of well-to-do families to increase the number of children a little bit over the average, but I cannot give you statistical evidence on this.

Senator MUNDT. You said in Sweden the well-to-do families are inclined to have more children than the families living in the marginal incomes, is that right?

Mr. MICHANEK. I do not think so, sir. I think it is not possible to make such a statement as a general finding.

IS ILLEGAL ABORTION SOUGHT WHEN LEGAL ABORTION IS DENIED?

Senator GRUENING. Dr. Borell, you indicated in your testimony that there has been certain broadening of the legislation on the matter of abortion. That is, originally abortion was legalized under the 1938 act for medical, medical-social, humanitarian, or eugenic reasons. In 1946 you broadened it somewhat by permitting abortion when the woman's living conditions were such that her physical or mental powers would be seriously impaired by giving birth or by the care of a child. Now there are still a considerable number of cases which do not come under this law. Do those women who cannot get legal abortions under Sweden's laws resort to so-called illegal abortions when they do not find justification as prescribed by law in 1938 and 1946? In other words, does a woman who is pregnant and just does not want to have any more children, resort to what is called an illegal abortion?

ILLEGAL ABORTION INCIDENCE IS VERY LOW IN SWEDEN

Dr. BORELL. No, I do not think so, because we try to help her in another way in such a situation. It is, of course, extremely difficult to determine the incidence of illegal abortion among the women who have been denied a legal abortion. The inquiries which have been made into this point have shown that nearly every one of these women went to term and had a normal delivery.

Senator GRUENING. In other words, you think there are very few illegal abortions performed in Sweden?

Dr. BORELL. Yes, sir; that is my personal opinion. The incidence is now, indeed, very low in Sweden.

ILLEGAL ABORTION PRACTITIONER PENALIZED

Senator GRUENING. When a woman who is pregnant comes to you or to the appropriate clinic for abortion and is told she cannot have it because there is not justification, is she then advised about methods of contraception so that pregnancy may be the last? Is there any penalty for the illegal abortion for either the recipient of the abortion or the physician who performs it?

Dr. BORELL. The physician who practices the illegal abortion is certainly punished.

Senator GRUENING. What is the penalty? Is his license to practice revoked?

Dr. BORELL. Yes, for a certain time, but he can get it back. We have had some doctors whose license had been withdrawn for 2 or 3 years but then they got it back again.

Senator GRUENING. Now, in the case of illegal abortions which terminate fatally—which I suppose must happen at times—would not the post mortem examination reveal that?

Dr. BORELL. If illegal abortion is suspected and the woman dies, the physician in charge of the case must report it to the police. They make a very careful investigation and try to trace the person who has done the operation. However, it is rarely a physician. It usually is a layman. The death rate, associated with legal abortion is a very important point. Statistics have shown that if the operation was performed late in pregnancy—it is generally not allowed in Sweden to do it later than the 24th week—there were a few deaths due to complications of the operation. If the operation is carried on early in pregnancy the mortality rate is almost nil. This suggests that it would be safer to perform legal abortion early in pregnancy; that is to say, within the first 12 weeks. A committee has now been set up in Sweden to inquire into the possibility of broadening the abortion law; that is, to widen the indication so that legal abortion is less restricted in the early stages of pregnancy.

Senator GRUENING. I think it will be helpful for the record if you will supply the subcommittee with copies of the legislation dealing with both contraception and abortion so we will have them both in the record. They will be inserted after your testimony, which has been very helpful and for which we are very grateful. Thank you very much.

(The following memorandum regarding the Swedish law on abortion was supplied to the Subcommittee on Foreign Aid Expenditures by the first secretary of the Royal Swedish Embassy, Mr. Lennart Eckerberg. Within the parentheses of the following text appear the title and the date of the law, as well as specific references to certain paragraphs of the law.)

(The documents referred to follow:)

EXHIBIT 88

MEMORANDUM REGARDING THE SWEDISH LAW ON ABORTION

(Lag 17 Juni 1938 Om Avbrytande Av Havandeskap)

Abortion in Sweden is permitted by the law on the following grounds:

When because of disease, deformity or weakness in the woman the birth of the child would endanger her life or health; (1 §:1)

When the woman was impregnated under certain conditions set forth in the penal code, as in rape or if she was impregnated before the age of 15; (1 §:3)

When there is reason to believe that the expected child will inherit a mental disease, mental deficiency, or a severe disease or deformity of another nature; (1 §:4)

When in view of the woman's living conditions and other circumstances it can be ascertained that the birth and care of the expected child will seriously undermine her mental or physical health; (1 §:2)

When there is reason to assume that the child will suffer from severe disease or deformity because of injury during fetal life (1 §:5)

Abortion may not be performed after the 20th week of pregnancy. Exceptions may be made by the Royal Medical Board up to the end of the 24th week. (1 §:5)

Authorization by the Board is required if abortion is made on the grounds of hereditary defects. Otherwise the authorization of two doctors is sufficient. However, most cases are submitted to the Board. (§ 4)

The Swedish law on abortion does not make any differentiation between Swedish and foreign citizens. However, in practice the chances for foreign women not residents of Sweden to get abortions there are almost non-existent.

Only if the abortion is to be performed for purely medical reasons would it be possible for a foreign nonresident woman to get an abortion in Sweden. If the application is founded on other grounds, it is impossible to carry out the investigation in Sweden that is required. The Board will not consider certificates from a foreign physician attached to a petition.

It should also be mentioned that Swedish hospitals do not have to perform abortions on women not residents of the country. At present, hospital facilities are fully used in taking care of the general domestic demands, so applications for hospital accommodation for abortion of non-residents usually have to be rejected.

In view of these circumstances it is obvious that foreign women who go to Sweden in the hope of getting an abortion risk serious disappointment and difficulties.

EXHIBIT 89

THERAPEUTIC ABORTION AND THE LAW IN SWEDEN

(By the Swedish Institute for Cultural Relations With Foreign Countries)

As soon as a country reaches a certain level of culture, some of the pregnancies among its population will be deliberately prevented from reaching term, regardless of the law in the country. The problems of birth control and abortion have to be faced by every civilized people.

The law on abortion in Sweden goes back to the 13th century, to the old Västergötland law which forbade any form of induced abortion. During the 15th century severe penalties were introduced for breaking this law, and during the 17th century violation was made punishable by death. The legal code drawn up in 1734 preserved the death penalty. Not until 1864 was the law liberalized, the penalty being then reduced to penal servitude for a maximum of six years. The law was further liberalized in 1890 and still more in 1921. The act of 1921 still did not sanction abortion under any circumstances, but by this year abortion for undisputable medical reasons had been unofficially sanctioned for some time.

During the 1920's the number of criminal abortions performed in Sweden began to rise rapidly, and during the first half of the 1930's about 70 women a year died from the sequels of abortion. This caused great alarm among responsible citizens and, as it was assumed that fewer criminal abortions would be done if doctors were given legal sanction to perform abortion under certain circumstances, in 1931 a proposal was made in Parliament that the law be changed to provide for legal abortion. The proposal also emphasized that the new law should distinguish clearly between lawful and unlawful abortion, to prevent what might lead to greater laxity in morals.

In 1934 a commission was appointed to work out a plan for new legislation on abortion. The commission submitted their bill in 1935, and the present law on abortion took effect on January 1, 1939.

Under this law, therapeutic abortion is permissible under certain medical, humanitarian and eugenic conditions, as follows:

> When, because of disease, deformity or weakness in the woman, the birth of the child would endanger her life or health.
>
> When the woman was impregnated under certain conditions set forth in the penal code, particularly if she was made to submit to intercourse against her will, as in rape; or if she was impregnated before she was 15.

Some of the felonies accepted as grounds for termination of pregnancy must, if possible, have been tried before a court of law, or proceedings must have been started for such trial. This proviso was included to prevent abortion being authorized on the grounds of a trumped up crime. It is also stipulated that a woman cannot get an abortion because she was under 15 when she was impregnated, unless the persons in charge of her give permission, provided no reasons exist for waiving such permission.

> When there is reason to believe that the expected child will inherit a mental disease, mental deficiency and/or a severe disease or deformity of other nature, either from its mother or its father.

These eugenic indications for abortion sanctioned by the law correspond to a large extent with the eugenic indications for sterilization. In fact, if permission for abortion is granted because of the risk of the woman transmitting unfavorable genes to her offspring, she must be sterilized at the same time, unless there

are special reasons for not doing so. For instance, the woman might be in such poor health that it is not advisable to have her undergo sterilization as well. Or there may be no point in sterilization; thus she might be approaching the menopause, or she might be going to be permanently institutionalized. In other words, when abortion is authorized provided that the woman is also sterilized, she has to choose between abortion plus sterilization (provided she can stand sterilization) or no abortion at all.

The commission also suggested that abortion be made permissible for social indications, but no indications of this kind were provided for in the law.

In 1946 the law was amended to broaden the medical indications into sociomedical as well as purely medical indications. Thus, in addition to the medical indications from 1939 covering disease, deformity and weakness in the woman, with the new sociomedical indications,

> abortion is also permissible when, in view of the woman's living conditions and other circumstances, it can be assumed that the birth and care of the expected child will seriously undermine her mental or physical health.

While it is clear from the law that abortion is still not permissible on purely social indications, these broadened medical indications provide for circumstances that might undermine the woman's health in the long run. Thus it is no longer required that the disease, deformity or weakness be present at the time of abortion, or that the anticipated loss of strength be caused by the actual birth of the child. Abortion can also be granted if it is probable that the woman's health will suffer from having to rear the expected child.

It is also specified in connection with these indications that if a woman is so severely diseased mentally that abortion is justifiable, permission for abortion should be granted on the grounds of her mental disease, not on any circumstances that might have caused the disease. Thus, if a woman was impregnated by rape and became mentally diseased afterward, and the disease itself is grounds for abortion, it makes no difference whether or not it can be proved that she had been raped; the decision must be based on medical grounds.

In June of 1963 an act was passed providing for another form of indication for therapeutic abortion:

> when there is reason to assume that the child will suffer from severe disease or deformity because of injury during fetal life,

for example, injury caused by infection (e.g. German measles), drugs (e.g. thalidomide), roentgen rays and Rh-sensitization.

Today a Swedish woman considering abortion will go to one of the special advisory centers on abortion. These centers are sometimes independent institutions but, as a psychiatric evaluation of the applicant is usually advisable, many of them are associated with psychiatric departments. There the applicants are also given a thorough gynecologic examination to check on the state and length of the pregnancy and the advisability of an abortion in their particular case.

Authorization for interruption of pregnancy can be obtained from either the Royal Medical Board or from two doctors in combination. In some cases of disease or deformity, a doctor may perform the operation on his own initiative, but this is only permissible when waiting for authorization from the other two sources would lead to grievous harm to the patient, and, provided he sends in the required documents to the Board.

In the case of a two-doctor authorization, one doctor must be the surgeon who performs the operation and the other the head physician of a hospital, a medical officer or a physician of equal rank. After the operation the two doctors must send in a written statement to the Board affirming that there were acceptable reasons for the operation and describing the reasons.

The great majority of abortions are authorized by the Board. The Board alone has power to authorize abortion on eugenic grounds, or because the child may suffer from severe disease or deformity because of injury during fetal life. Likewise, it alone has the power to authorize abortion when the woman is mentally incapable of giving valid consent to the operation.

Applications to the Board must be accompanied by a birth certificate, a biography of the applicant and a certificate from a licensed Swedish physician.

The biography should cover all the circumstances in the woman's life bearing on the application for abortion. It can be written by her husband or some other close relative, or another person. Nowadays most of them are worked up by social workers, either ones working in the abortion counseling centers or other social agencies, or in some instances by the district nurse. It sould contain data on the woman's family history, parents, childhood environment, education, work-

ing conditions, sexual development, children, finances, dwelling-place, sexual life, former and present state of health, and other circumstances in her personal life. It should also contain extracts from the records of hospitals where she has stayed, and reports from social agencies with which she has been in contact.

The social workers usually make home visits to assess the applicant's living conditions, and they interview many people. If the woman is legally competent, however, no one may be asked for an opinion or statement unless she agrees. Otherwise the law says that the father of the expected child should be heard if it is advisable, the persons in charge of the woman if she is under 21, her guardian if she is legally incapable of managing her own affairs, her husband if she is married, and the physician and superintendent at the place she is staying if she is institutionalized.

At the conclusion of his biographical document, the writer should give the main reason for asking for authority to interrupt the pregnancy. When abortion is applied for because of hereditary taints in the father of the expected child, a similar biographical document must be made out for him.

The obligatory medical certificate must come from a licensed Swedish physician, and be based on personal examination of the woman. The main purpose of this certificate, besides that of giving information not contained in the biography, is to supply the Board with a medical opinion on the statements in the other documents, and a picture of the woman's present physical condition. Often the medical certificate contains an opinion from a gynecologist on how far the gestation has proceeded and on whether or not abortion should be induced. If the woman has been treated by other physicians, reports from them are generally attached to the application. At the conclusion of the certificate, the physician states whether or not he thinks the pregnancy should be interrupted, and why.

If the pregnancy has resulted from a felony, and the case is to be tried before a court of law, the preliminary police report must be attached to the application, preferably with a statement from the public prosecutor on the legal aspects of the case.

The Board nearly always deal with applications within a week of receiving them. They turn them over to their special Social-Psychiatric Committee which meets regularly once a week. This Committee also acts for them in matters concerning sterilization, castration and marriage (exemption from regulations prohibiting marriage, and annulment and dissolution of marriage).

The Committee consists of three persons: the Chief of the Bureau for Social and Forensic Psychiatry at the Royal Medical Board, and two other persons appointed by the Government. Because of the large number of cases coming before the Committee, the Chief of the Bureau is assisted by two part-time psychiatrists who present the cases to the Committee. Four persons, generally gynecologists, take turns acting as chairman for the Committee. Four other persons, generally women with experience in social welfare and politics, take turns being the third member of the Committee. When abortion is sought on eugenic grounds, and when the Committee do not agree on a decision, the Board's specialist in genetics joins the Committee. The decisions then rest on the vote of the majority of the four; if the votes are equally divided for and against, the decision rests on the vote of the chairman.

If something is lacking in an application, the Board must ask for the missing information or document. When the Committee feel they need more data on a case, they may ask medical specialists for an opinion, or arrange to have the woman examined at a special institution, or ask for an opinion from the Board's specialist on the subject in question.

Applicants have no right of appeal if they are not satisfied with the decisions of the Committee. But they can ask the Committee to reconsider the case in the light of further evidence; re-applications are generally accompanied by further biographical data and a fresh medical certificate. If an applicant writes to the Board complaining about their decision, the Committee refers the case to the physician who wrote the medical certificate, asking for a new certificate describing the woman's present state of health. When this report comes in, the Committee reconsiders the case.

Women often send applications to the Board though the persons writing the certificates are against her having an abortion. This is one of the main reasons the annual reports from the Board show such a high rate of refusal—about 40 per cent.

When permission for abortion has been granted, the operation must be done in a public hospital by a surgeon on the staff. On special request, the Board may permit the operation in another hospital by a surgeon appointed by them. This holds good both for abortions authorized by the Board and by two physicians.

As a rule, the abortion must be induced before the end of the 20th week of gestation, reckoning from the first day of the last normal menstruation. When it is done because the mother is mentally or physically disabled (for purely medical reasons), no limit is set; it is then up to the surgeon to decide what is best. Otherwise, the Board has the power to extend the limit to the end of the 24th week in exceptional cases, as when the pregnancy is detected late in an insane or retarded woman, or when a prescribed investigation has delayed the case.

All documents dealing with therapeutic abortion are confidential. No one in any way concerned with the applications, decisions or operations may needlessly disclose anything they know about the cases. The replies to applications for abortion are privileged against disclosure in accordance with the law restricting the right to obtain public documents. All the documents connected with applications are kept in the files of the Medical Board where they are stamped with the seal of secrecy. Usually only the woman herself may give permission for anyone else to read her documents.

Analysis of the statistics from 1930 through 1946 revealed a rapid decline in the frequency of criminal abortions. In the first half of the 1940's there were 35 deaths a year from the sequals of criminal abortion, as opposed to 70 in the first half of the 1930's before the new law on abortion in 1939.

After this law went into effect, the number of sanctioned abortions rose steadily with each year, particularly after 1946 when the legal indications were broadened. After 1951, they began to decline, and in 1955 they came to almost a standstill. The figures are shown in an appended table. It has not been possible to explain the peak in 1951.

In conclusion, a few words about the possibility of foreign citizens getting an authorized abortion in Sweden.

Aliens registered at the annual census and liable to taxes in Sweden come under the abortion law and may seek permission for abortion through the counseling centers. Other aliens have little chance of getting an abortion in Sweden. Every application must be drawn up according to law, and must include a certificate from a licensed Swedish physician. The Board will not consider a written petition with a certificate from a foreign physician attached. Nor may the Board direct an alien to a Swedish physician or institution for help with an application. If the woman comes herself to the Board, all the Board can do is to recommend her to ask the representatives of her country in Sweden for the address of a Swedish physician or to try to get hold of one herself. When a foreign woman applies in the regular way on the purely medical grounds of disease or disability, the Board sometimes gives permission for abortion in Sweden. When she applies on other grounds, they are generally prevented from doing so, mainly because they are unable to get a true picture of the conditions under which she lives.

1964

This article was written partly by Dr. Inge Oster, Chief of the Bureau for Social and Forensic Psychiatry at the Royal Medical Board of Sweden, and partly by the Swedish Association for Sex Education.

Translated by Helen Frey.

Therapeutic abortions in Sweden, 1946–62

Year	Number of births	Number of applications for abortions received by medical board	Applications granted		Number of legally sanctioned abortions done				Grounds for abortion				
			Number	Percent	Authorized by medical board	Authorized by 2 doctors	Emergency	Total	Disease	Weakness	Anticipated weakness	Humanitarian	Eugenic
1946	135,532	1,878	1,701	91	[1]	[1]	[1]	2,378	[1]	[1]	[1]		
1947	131,565				2,891	637	6	[2] 3,534	1,197	442	46	9	379
1948	129,195				4,131	450	4	[3] 4,585	918	717	51	6	295
1949	123,761	5,736	5,086	89	4,555	943	5	5,503	2,039	2,541	244	18	656
1950	117,754	6,361	5,149	81	4,786	1,096	7	5,889	1,790	2,965	565	18	544
1951	112,331	6,884	5,751	84	5,324	997	7	6,328	2,157	2,913	736	29	486
1952	112,244	6,023	4,790	80	4,509	811	2	5,322	2,087	2,503	373	28	329
1953	112,151	5,908	4,758	81	4,275	634	6	4,915	1,846	2,280	522	26	235
1954	106,907	6,079	4,792	79	4,488	599	2	5,089	1,855	2,533	542	47	110
1955	109,124	5,694	4,060	71	3,922	638	2	4,562	1,919	2,147	376	44	74
1956	109,796	5,229	3,583	69	3,265	582	4	3,851	1,754	1,690	268	39	96
1957	108,868	4,853	2,994	62	2,882	501	3	3,386	1,590	1,498	169	54	72
1958	107,203	4,366	2,830	65	2,376	445	2	2,823	1,528	1,432	188	60	67
1959	106,397	4,346	2,821	65	2,628	440	3	3,071	1,427	1,507	182	87	58
1960	103,255	4,085	2,552	62	2,377	414	1	2,792	850	1,479	139	63	21
1961	105,913	4,094	2,664	65	2,474	434	1	2,909	903	1,497	182	64	18
1962	108,179	4,257	2,957	69	2,772	431	2	3,205	948	1,581	151	80	12

[1] Information lacking.
[2] Only 2,079 included in breakdown to right.
[3] Only 1,991 included in breakdown to right.

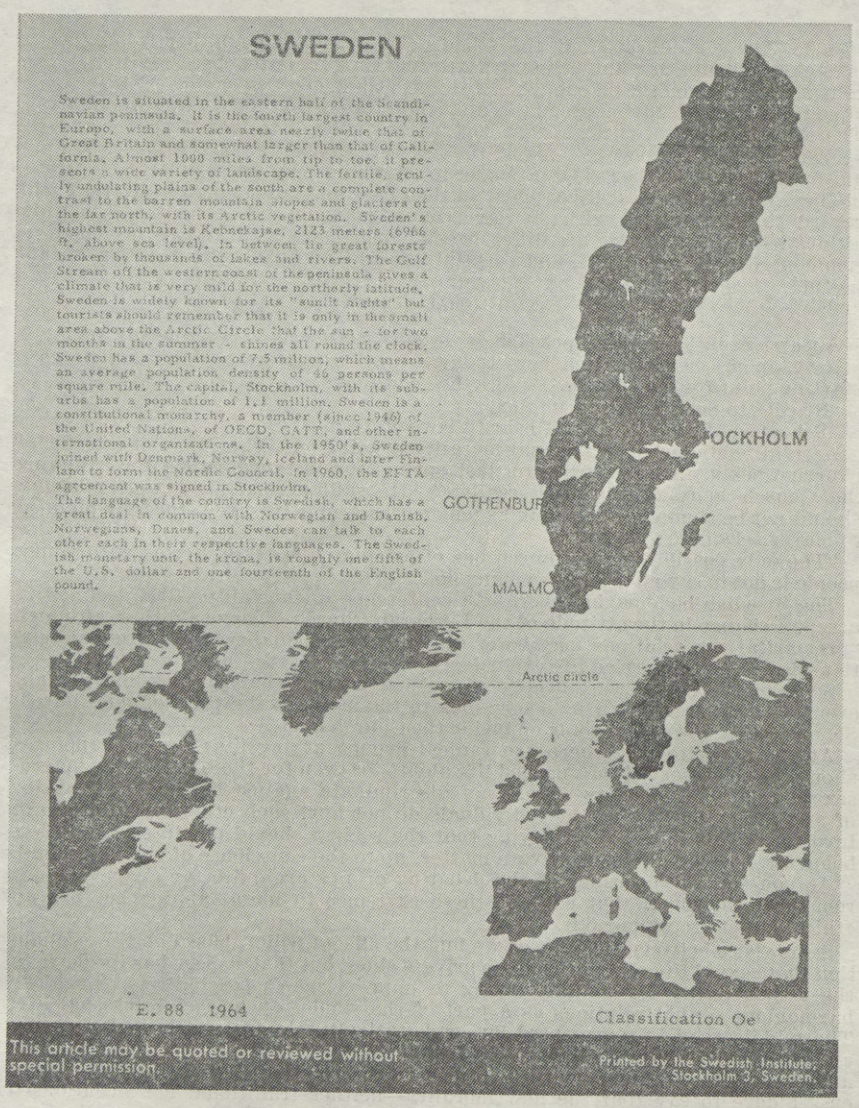

EXHIBIT 90

SEXUAL MORALITY AND SEXUAL REALITY—THE SCANDINAVIAN APPROACH

(By Birgitta Linnér,[1] a speech before the American Orthopsychiatric Association, March 19, 1965)

I remember how, at the meeting of the International Planned Parenthood Association in Stockholm in the summer of 1953, a small group of us sat discussing youth problems. Among us was Abraham Stone, and he asked us Scandinavians: "Why is it that you have so many unwanted pregnancies in the Scandinavian countries, when you have all this freedom, and sex education in the schools; anyone can buy contraceptives and the doctors cooperate." It just didn't make sense to him. It was not easy to find the answers to this question. We tried

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some. "The sex education in the schools is not good enough, partly because it is a new and difficult subject and partly because some teachers resist it. The contraceptives aren't good enough. Further, at a deeper psychological level some young girls want to be pregnant and therefore avoid protecting themselves. There are always people who are not mature enough to have freedom and responsibility." Those were some of the answers given. I don't think they were quite satisfactory, either to Dr. Stone or to those of us present.

These questions are still pertinent in the Scandinavian countries. Here, I will regard these countries with similar economic and social structure as a unit, although, of course, there are differences among them. Still, what they have in common is more important, and certainly to an American audience more meaningful.

THE MORAL DEBATE

An article in The New York Times in April 1964 was a contributing factor, I believe, in my being invited here today. I will therefore use this article as a starting point for my speech. I quote the headlines:

"Swedes to Scan Teaching on Sex."

"Schools and Church Move Toward Views of Young."

A vivid public debate on sexual morality is going on. The editor of the official church weekly, in a TV program last spring, for instance, called for "aligning the Church more closely with reality." He said premarital sexual relations should not be condemned as a sin as long as the couple involved sincerely planned to marry. I quote:

"The only possibility the Church has of getting on speaking terms with young people is not to say no to what so many do."

The Swedish bishops, however, at a conference in the fall of 1964 declined to accept a change in the attitude of the Lutheran Church. They said that, although "premarital sex relations may be of different moral quality," still "sexual relations do belong to married life exclusively."

Some of the clergy were deeply stirred by the fact that the possibility could even be considered of giving a new look to the moral evaluations of the Church. So, one sees a discussion going on inside the Church itself.

At the opposite pole there are radical groups urging that sexual happiness should not be reserved for married life alone—or even for those practising heterosexual relations. Society should not discriminate against the sexual behavior of any group, as long as the individuals do not hurt each other or children are involved. This is a way of saying that the society should not intervene in sex behavior, because this is a private matter, up to the conscience of the individual.

As you see, the positions of the debating groups are quite far apart. Let us remember, however, that each of these extremes in moral approaches has an ethical base to recommend it.

Somewhere between these poles we find the official policy, based on the assumption that sexual life certainly has its private sides, but that society has its share in the responsibility for morals, trying to improve man's possibilities to achieve harmonious sexual relations as a part of the whole psycho-social personal life. The middle road is represented by comparatively tolerant trends in legislation and by a general approach stressing frankness, knowledge, education to freedom and responsibility, and a mature outlook on sex relations in both men and women. I dare to say that the new morality—neither traditional nor licentious—is already established in large groups of the society. The basic fact this new morality has to cope with, is the possibility for men and women alike of using sexual life both for procreation and for individual and mutual pleasure—and, of course, also for frustration.

Thus, the Scandinavian countries represent not only *one* established morality requiring a single basic ethical code regarding sex, but also other sex moralities within a multiple value system. In this situation, many regard it as the goal of education to train our youth to accept the consequences of their choice of sex ethics. A psychologist from Finland said to me, when we talked about the tensions between ideals and reality: "We have too much of superego morality; we need more of ego morality."

SEX EDUCATION IN THE SCHOOLS

Although some of the Scandinavian countries have had a sex education program for about 20 years, it is assumed that only 50–60 per cent of the students get a thorough sex education. Many circumstances contribute to inadequate

treatment of the subject, among them the following: it is a new and difficult subject; the teachers' training is not good enough; some embarrassed teachers resist the subject; some teachers put off the teaching until the end of the semester, when there is little time left for this subject, which is of such importance to the students.

At present, there is a great deal of interest in improving the whole field of sex education. In Denmark and Sweden new Royal Commissions are working with the reforms. Sweden has a handbook for teachers on sex education, also available in English, which is going to be revised. Iceland has started an interesting program, where the School of Social Works has lectures and films every spring about marriage and family, planned parenthood and sexual ethics.

The Radio systems have broadcast sex education to the schools, and TV has had programs for educational purpose for both students and adults.

However, a heated debate has been going on about how much or how little the school should commit itself to the teaching of birth control, thus indicating the different and often irreconcilable attitudes to the moral question of premarital sex relation. In Denmark the debate started when a young girl suggested that contraceptives should be supplied by the schools. Many citizens wanted teaching about birth control to be excluded; other groups, liberals and youth organizations, were very strongly opposed to that point of view. In Norway, a large group of housewives demanded that sex education should remain the responsibility of the home and the family alone. 140 medical doctors in Sweden wanted what they labeled "firmer sexual norm" to be taught. On the other hand, a nationwide organization of students in secondary schools and junior colleges, maintained that in this field only facts and not evaluations should be taught the youth.

Some 20 years ago, those opposed to sex education, and teaching about birth control in particular, said it would encourage license, that young people would not like to marry, because they could enjoy sex anyhow, and that the young generation would not bother about having children. It seems, however, that none of these negative predictions have been confirmed by reality. As yet, there is no evidence that family life is being destroyed in the Scandinavian countries. People continue to establish permanent and stable relationships as adults, and they want to provide home and security for the young. Statistics show that a larger number of young people have married during the last decades than before; that the birth rate has increased, and that the divorce rate is quite stable—about one out of six of all marriages.

To sum up, there are those who have a superstitious belief that a good sex program will automatically solve all problems; others believe it encourages looseness and promiscuity. It seems to me that the reality lies somewhere in between. There is no doubt that what builds our psycho-sexual behavior pattern and our morality is more complicated than a mere sex program. Nonetheless, and however controversial the subject may be, we have a duty to support the young generation with the knowledge they need so desperately: sex education should be taught as part of the regular school curriculum.

PREMARITAL SEX RELATIONS AND CONTRACEPTIVES

We know that a very large percentage of the young people have premarital sex relations. (Incidentally, this is not quite as recent a phenomenon as it would seem. In the ancient rural society sexual relations before marriage were accepted to a large extent. It may partly be due to this tradition that today out of all first-born children within wedlock over 40 percent were conceived before marriage.) The latest investigation of students, in 1964, showed (although the results have not yet been completely collated) that at the age of 18 no less than 57 percent of the boys and 46 percent of the girls had premarital sex experience. (I would like to mention, in passing, the excellent cooperation between the Children's Psychiatric Clinic, the City School Board and the Parents' Association.) Concerning the relation between the behavior of these young people and their moral values the connection seems to be fairly close in most cases. One group, however, had a considerably stricter moral code than the rest, but still showed much the same behavior. The wide gap thus found between their philosophy and their behaviour pattern worried the investigating doctors as a highly negative factor. They felt it is better for young people to have moral ideas and reality reasonably close to each other.

The general situation was summed up by a colleague of mine thus: "This young generation does openly what our generation did stealthily and with

guilt feelings. Their behavior must surely be much more healthy and emotionally maturing." Certainly, I am aware of the explosive materials in this view. But this is an important point to consider in trying to merge ethics and reality harmoniously.

Needless to say, good contraceptive information and facilities are available with public support. There is an effort to diminish both legal and illegal abortions through improving the facilities for birth control. The need for planned parenthood is on the whole accepted, even if some groups do not like having it taught in the schools. A recent interview among married women showed that over 90 percent of them try to apply child-spacing measures. The maternity welfare centers have the obligation of serving all mothers, regardless of marital status. In public places one can see posters bearing messages directed at young people. Such posters, sponsored by the National Association for Sex Education, affiliated with the International Parenthood, says:

"Both of you are responsible. Can she depend on you? Can you rely on yourself? . . . To be safe is important to both of you."

EARLY MARRIAGES

Generally speaking, early marriages are hardly recommended. It is felt that young people should wait to get married until they are mature enough for a lifelong relationship. I do not mean to speak against all early marriages. However, I believe—and so do many—that they should not serve the purpose of merely legitimizing a child or of merely making sexual intercourse legitimate. Thus, parents may say to their son or daughter:

"We would prefer that you have no sex relations until you marry. But if you choose to have sex relations, you should use birth control. If you get pregnant nevertheless, you are always welcome here, and we will support you."

The ethical alternatives can be formulated thus. If, on one hand we assume "sex-within-marriage" as the only permissible moral, we commit many young people to the possibility of unwanted pregnancies, unwanted marriages with all its complications, illegal abortions, and so on. If, on the other hand, we assume that some of the young people may have intercourse before they meet the person they want to marry, and that this may happen also with our own children, the best thing we can do is to teach them about birth control. It may turn out that they are able to handle their sex life in a much more mature way and not so destructively, as when they are unable to channel their emotions and sexual urges. Case histories often show that those girls who get into trouble are those who have not received a good sex education and do not know about birth control.

Obviously, whichever alternative one chooses here depends on one's own ethical approach to youth questions and the moral questions.

CHILDREN OUT OF WEDLOCK

We do not have illegitimate children in the Scandinavian countries. At one time, the laws referred to an illegitimate child, but that was changed some decades ago as part of a program to improve the status of the unmarried mother and of her child, born out-of-wedlock. Our legal provisions reflect a cultural attitude more concerned with the protection of the child than with punishment of the mother.

Every child born out of wedlock is assigned a "child welfare guardian," who has the responsibility of safeguarding the child's rights and interests, as well as to ensure that parentage is established and that the father agrees to financial support of the child.

It naturally follows that all family allowances and all maternity care are given without regard to the child's birth status. Unmarried mothers, with minor children, have the right, of course, to live in municipally built dwellings. An unmarried mother with a baby is also considered a family, and in school text books there is reference to one-parent families. Hospitals address unmarried mothers by the title "Mrs."

Thus, the basic attitude of society is to afford support for unmarried mothers, so that they can take care of their children, if they so wish. A recent investigation by the Child Welfare Board of Stockholm showed that among 500 unmarried mothers under the age of 20, the majority wished to keep their children. But there is also a careful procedure for adoption, as well as many opportunities for placement of children in foster homes.

An indication that an unmarried mother's action does not constitute a bar to a happy, normal life, either for herself or for her child is the current tendency among parents not to force a daughter into marriage, because she is expecting a child. Rather, the daughter is encouraged to keep her child, complete her schooling or vocational training, and perhaps at some later date get married to a man whom she really loves.

It might be of interest to note that the number of children born out of wedlock now is much less than during the 19th century. During the last decades, as a matter of fact, the proportion has remained virtually unaltered, being about 10 percent of all births.

THE SCANDINAVIAN ABORTION LAWS

The first law legalizing abortion under certain conditions was adopted in Sweden in 1938. (The laws are similar in the other Scandinavian countries.) The main reason behind the reform was the great number of criminal abortions, fatal in a great many cases, which caused considerable alarm among responsible citizens—concerned not only with principles of morality but also with the reality of people's lives.

The main grounds are five:

1. medical
2. social-medical
3. humanitarian, referring to cases of rape, incest, etc.
4. eugenic
5. and therapeutic abortions in cases where there is reason to assume that the child will suffer from severe disease or deformity because of injury during fetal life, an act passed as late as 1963.

Authorization for interruption of pregnancy is in most cases decided by a specially appointed Committee of the National Board of Health after an investigation. Too many women who come from other countries, including the United States, hoping to get a legal abortion, are completely unaware of the rather strict rules which I have just mentioned.

There is no general unanimity to be found in this field. The Lutheran State church, for instance, does accept legal abortions for medical and humanitarian reasons. In a heated debate which has been going on recently, certain groups have favored that a woman should be given her free choice whether she wants to give birth to her child or not. Further, if women are given abortion on demand, it is hoped that criminal abortions will eventaully disappear completely. Other groups feel that our present system of compromise on the whole is the best possible. As a matter of fact the questions are debated more violently than ever right now.

In spite of strongly diverging opinions, it seems that the fundamental principles established in the present laws are generally accepted. In other words, I believe that very few people would, if they had a chance, turn the clock back and make all abortions criminal and thus have the women exposed to abortionists again.

It is a matter of dispute, however, whether we should go one or more steps further.

THE WOMAN'S NEW POSITION AND ITS EFFECT ON THE SEXUAL MORALITY AND REALITY

The public policy in Scandinavia is to support the family life, and especially families with small children, while at the same time encouraging the emancipation and personal independence of women. Thus, marriage and family life are regarded as only part of the woman's life.

Mrs. Myrdal, wife of Gunnar Myrdal, well-known in the United States, recently gave a speech at the OMEP-conference in Stockholm. She pointed to the nuclear family with few children, the prolongation of the life cycle, to the general urbanisation and the growing number of women now involved in careers, and concluded:

"All these things will further strengthen the necessity for the woman to look upon her own life as an individual destiny."

This means, I believe, that women should no longer be considered as objects, but as subjects. Mature sexuality means that they are not exploited or used. There is a great risk that a woman may be exploited if she does not have a sexual awareness and consciousness. She must be allowed to cope with sexual relationships as with all other responsibilities in her life without over-protective morality.

It may seem difficult to reconcile independence and femininity. However, Scandinavia shows that they are certainly not irreconcilable. I quote a journalist about the Scandinavian women: "Their morals are unique, but they are not immoral."

I have asked myself to what extent this sexual freedom—meaning freedom and responsibility between mutually consenting and mature individuals—is publicly approved. Many persons and groups certainly will oppose my way of interpreting the situation. Perhaps I should say once more that the official approval is only indirect: it is shown, for instance, in the concern for the unmarried mother and her child. There is no attempt at humiliation or at castigation. Rather there is a realistic appreciation of the practical problems involved. One sees it in the therapeutic abortion laws, which try to help women avoid illegal abortion and the risks involved.

May I add some question marks: as the woman becomes more and more economically independent and has a professional life of her own, many ask themselves:

Will this also lead to security in her sexual life? How close are sexual life and procreation for the woman? Does her freedom of choice lead to more frustration and to more superficial emotional relations? Finally will the moral view that sees sex life not as a separate activity, but as an expression of the whole person, disappear? *Or*, will woman's new situation result in a self-evident, harmonious view on the interdependence and mutuality between man and woman?

Let me quote here Dr. Kirsten Auken, sometimes called the Kinsey of Demnark, who said to me when we recently talked about these matters: "We pay a price for the new independence and the new sexuality. How big is the price? We certainly do not know. We do know, however, that we cannot put the clock back again. Nor would we want to."

Traditionally, women have not been allowed to cooperate with men in forming the rules of morality, although, assuredly, they have always been a part of reality! But maybe this is precisely what is occurring in Scandinavia today: a new morality is being advanced by men and women together. May I quote here the words of Erik H. Eriksson in his latest book about a new equal partnership between the sexes:

"The amended Golden Rule suggests that one enhances the uniqueness of the other; it also implies that each, to be really unique, depends on a mutuality with an equally unique partner." (Insight and Responsibility)

SOME PERSONAL VIEWS ON THE SITUATION IN THE USA

The Scandinavian countries may be regarded as a laboratory provided by history in which certain experiments can be observed. One fact is immediately apparent: the gap between public morality and sexual behavior is less wide than in this country. What I call public morality is not quite the same thing as here. The laws and the various regulations imposed by society play a greater role in the Scandinavian countries in shaping, sometimes in leading, public opinion, than they do here. Thus we try to get rid of the concepts of shame, as far as unmarried mothers are concerned—certainly a crucial point. Society has taken the lead here, in legal and other efforts, and it is supported by public opinion—with exceptions, of course. This fact is closely related to another one: premarital sexual relations are—to a certain degree—accepted. That is, indirectly by public policy, and with varying degrees of agreement, by a large part of the population.

In spite of the State Church system in the Scandinavian countries, where most young people go to confirmation class and a majority prefer a church wedding to a civil ceremony, it seems fair to say that the influence of the churches on public morality is less than in the United States.

It should not be forgotten that the influx into the Scandinavian countries of ideas and behavior patterns from America is considerable. But it is not my task here to talk about this interesting phenomenon. Rather, I will conclude by pointing out what I as a Scandinavian feel when looking at the United States. Certainly, a more open and frank debate is to be desired. The cost for not teaching birth control to young people should be realistically weighed against the cost for teaching it. Further, what is the price for a system with teenage-marriages, often caused by unwanted pregnancies? A responsible discussion must face questions as these; regardless of how one evaluates the situation they cannot be concealed. It is amazing how sex books, family life books and human relations columns leave out many quite important matters. They often do not give enough facts, and often they do not discuss conflicting value systems. Let me give you

an example: In thirteen American sex books on my bookshelf I did not find a single word about birth control!

Assuredly, there is no simple solution for the American situation to be drawn from the Scandinavian countries. But, I should like you to import two things:

I. More open, serious discussions and debates about values and reality with both men and women taking part—both young and old.

II. More sex education in the schools as a part of the broader context of family life education for the younger generation.

EXHIBIT 91

SOCIETY AND SEX IN SWEDEN

(By Brigitta Linnér, the Swedish Institute for Cultural Relations With Foreign Countries, published by the Swedish Institute, Stockholm, 3; printed in Sweden)

INTRODUCTION

This brochure will present information about certain conditions that usually receive little attention in the reports of those who have visited Sweden. It concerns in the first place the educational policy that is followed by the Swedish schools; secondly, those laws and regulations that deal with sexual life and marriage; and, finally, some facts about the various measures taken by society to support family life in Sweden today.

The different regulations and institutions reflect certain basic principles: that young citizens should be given information on sexual questions and that, in general, this subject can and ought to be discussed objectively and openly; that all children are entitled to the same care and, therefore, that no discrimination may occur against children born out of wedlock; and, lastly, that husband and wife are to be considered equal partners in marriage. These democratic principles express an attitude toward sexual and family life that officially represents Swedish society. They also prevail, on all essential points, in other Scandinavian countries.

In Sweden there is, however, far from a unanimous opinion concerning the moral code. Certain groups hold an attitude that is considerably more rigorous than the official policy, while other groups maintain a position that is more tolerant. Values and norms sometimes clash, and from time to time a heated debate flares up. One can hardly say that at present there exists a generally accepted code for sexual and family life. And, indeed, all simplified diagnoses are misleading. Sweden currently is undergoing a process whereby both institutions and evaluations are being transformed, and it is difficult to predict the future. However, it appears quite certain that the principles already established by law and regulations will become a part of the new way of life.

Much of the material presented in this pamphlet is already part of the professional literature on the subject.

SEX EDUCATION IN THE SCHOOLS

Sweden is one of the very few countries in the world where sex education is compulsory in the schools. It has been included in the school curriculum because there is a definite need for knowledge on this subject.

The object of sex education in schools

The best thing, of course, would be for young people to receive suitable sex education in their own homes by their own parents. Experience, however, shows that a satisfactory education of this sort puts the home to such a severe test that the task, as a rule, proves too difficult. There are several reasons for this. Often the parents' knowledge is inadequate, their interest in this aspect of their children's education is insufficient and their own repressions are frequently pronounced. When the parents cannot give young people necessary guidance, it is believed in Sweden that the task belongs to the schools which, next to the homes, are the nearest authority. The ideal thing appears to be cooperation between the home and the school.

The basic aim of sex education is to provide knowledge in a subject that is of the greatest importance in the personal development of the students. One objective is to counteract less desirable sexual behavior, such as sexual intercourse

at too early an age. An urgent task of such instruction, says Dr. Gösta Rodhe, Chief Medical Officer of the Swedish National Board of Education, is to create the necessary conditions for a harmonious sexual life.

The first teachers' manuals on sexual education were published by the Swedish National Board of Education in the 1940's, and sex education became compulsory in 1956. The illustrated handbook entitled "Sex Instruction in Swedish Schools" states in its preface:

"The purpose of sex instruction in Swedish schools is to present biological information and to impart knowledge in a manner that will help not only in moulding ideals but also in building character. Instruction on these lines is intended to have a pronounced ethical basis. Sex instruction is compulsory in Swedish schools. This handbook on sex instruction has been published by the National Board of Education for the use of teachers. It contains, among other things, general views on sex education and instruction in what should be presented to pupils in different age groups. Suitable ways in which this can be done are outlined in suggested lessons on the subject." (Stockholm, September, 1957 Swedish National Board of Education)

The manual begins with an examination of the sexual problems of the preschool child. Instruction starts with the first school year. The scope of this initial school instruction is limited to how the sexes differ, where children come from and how they develop before birth, how they are born and in what ways they depend upon their mothers, fathers and homes.

Between the ages of 11 and 13, instruction continues with the structure and function of the sexual organs, puberty, menstruation, night pollution (wet dreams), masturbation, conception, pregnancy and "traumatic experiences" during pregnancy, development of the fetus, labor, determination of sex, twins, etc.

It is interesting to note that earlier only girls were given information about menstruation and menstrual hygiene. A step in the right direction was taken in 1956 when instruction in these matters was started for classes of boys and girls together.

During the 9th school year (age 15 or 16) occurs the most complete sexual instruction, since this is the final year of the compulsory school. Those pupils who continue with higher education are given a review and then more comprehensive information on various questions.

From "Sex Instruction in Swedish Schools":

SEX INSTRUCTION FOR AGES 14 THROUGH 16

Directions on the Scope and Method of Instruction Items

Review of previous items as required.

2. Structure and function of the sexual organs.
8. Development of the fetus and pregnancy.
9. Labor.
10. Sex and youth. Moral considerations. Abstention from sexual relations during adolescence.
14. Illegitimate children.
15. Spontaneous and induced abortions.
16. Veneral diseases.
17. Contraceptives.
19. Sterilization.
20. The climacteric or menopause.
21. Sexual abnormalities.
22. Moral and social aspects of sex.
23. Welfare measures to help in setting up a family.
24. Welfare measures during pregnancy, confinement and nursing.
25. Welfare measures for the care and training of children and adolescents.

Sex education is given chiefly in the biology lessons, but the National Board of Education recommends that it be touched upon also in lessons on religion, social studies and other subjects in which questions of sex may arise naturally. Then too, since 1954 the Swedish Broadcasting Corporation has broadcast sex education program to the schools. School television programs are being prepared.

The teacher's guide for sex education has been criticized by conservative groups as well as by radical groups. The former want strict and clear ethical norms to be taught and the information about contraceptives to be reduced, if not excluded altogether. In the latter group, some people feel that factual information alone should be supplied, leaving the question of norms to the individual. In 1964

a Royal Commission, with members representing different opinions, was appointed to revise the entire sex education program.

It is not remarkable that this program receives criticism. It deals with a difficult and in many aspects controversial subject. Remarkable, however, is the fact that we have compulsory sex education in Sweden, and that we constantly try to improve it.

A wide-scale investigation of the sexual knowledge and sexual habits of school-age youngsters in the fairly large industrial city of Orebro has been made by Dr. Hans Linderoth and Dr. Bengt Rundberg. The results, however, have not as yet been collated. Of interest was the excellent cooperation between the Children's Psychiatric Clinic, the Orebro School Board and the Parents' Associations.

Following is an example of a Swedish view on forced marriages. It is taken from "Time of Transition" ("Brytningstiden"), 1962, a book about youth and relations between the sexes by the well known sexual educators, Lis Asklund and Torsten Wickbom. This book is used as supplementary reading in many schools.

Forced to marry

"Marriage also comes up for discussion in regard to two minors who are expecting a child together but who are not in love with each other. It is often the parents of the expectant mother who exert pressure in order to prevent a scandal among relatives and friends. They want to 'legalize' the child, as it is called. And not infrequently, marriage also results. But to get married only for the sake of the child and without warm feelings for each other involves, as we see it, great risks. Many unhappy marriages have begun exactly in this way. 'We were forced to marry.' Then, perhaps, the couple have more children and their economic situation makes divorce impossible. But they 'never enjoy a really pleasurable moment together.' The question then arises whether the emotional and material welfare of the child, for whose sake the marriage originally took place, has best been provided for.

"We, therefore, wish to give you young people who are confronted with a so-called 'forced marriage' this piece of advice: Wait awhile. Think things through. Learn to know each other better. Perhaps you will discover that you wish to remain together in the future, perhaps not. In any case, neither one of you will lose by delaying your decision. Remember that even an unmarried mother has the right to call herself 'Mrs.'"

FAMILY LIFE EDUCATION

However important sex education is, it should be regarded as only one component in the broad subject of family life education—"familjekunskap." This is included in the new school curriculum, according to the law of 1962 on comprehensive school education. The subject is integrated with other fields of study suitable for throwing light on various aspects of the family, such as social studies, home economics, sex education and religion.

As part of this program the curriculum of the ninth grade includes ten hours of child care (for boys and girls alike) comprising "essentials of children's development, mental and physical needs, prevention of accidents, babysitting, etc." The general commentary on the curriculum states:

"The school shall avoid formulating rules for family life. Instruction in family life education aims at helping pupils achieve a better understanding of the family situation in which they themselves live, and at preparing them for their future lives as married partners, homemakers and parents. Students in their senior year of comprehensive school should be capable of understanding how important it is that life in the home and in society be based on collaboration between self-dependent equals, and on a foundation of mutual loyalty and of regard for every human's individuality."

Family life education is offered as a separate subject in certain grades. The aims for the eleventh grade, for instance, are defined as follows:

1) To provide an orientation on the family as an institution, on its varied structures and on the interaction of family and society.

2) To promote a deeper understanding of questions regarding family life and problems of personal adjustment, and of the different interpersonal relationships between human beings.

3) To provide greater insight into the planning of a private budget, as well as to stimulate interest in the important role home environment plays in the well-being and development of the individual.

The following table of contents from a new textbook for teen-agers on "Family Life Education" shows various facets of the subject. Interesting is the fact that sexual questions are taken up as a self-evident part of the text. Furthermore, that questions concerning employment and the home are discussed from the new standpoint of balance and equality between men and women. Vocational training for both boys and girls is taken for granted, the same as training for both boys and girls in the care of the home and family.

"Family Life Education"

ed. Birgitta Linnér, Sweden (1964), 152 pages.

Contents:

What Is A Family?

The Swedish Family of Yesterday

The Family In Modern Society

Old family functions disappear—The shift in focus to interpersonal relationships as well as the rearing of children.

Occupation and the Future

The education-oriented society—Society's contributions to the increase of opportunities for education—Do girls have the same opportunities as boys?—Are girls directed toward a profession as often as boys?—Why is the woman more transient on the labor market?—Refresher and rehabilitation courses—How to finance education—Education for home and family.

Youth and Marriage

The Swedish marriage age is falling—Teen-age marriages. The pros and cons of young marriage—Choosing a husband/wife. Standing on your own feet.

Infatuation Versus Love

Engagement Period

Preparation for marriage—The in-laws—Establishing a home—Planning the budget—Short or long engagement?—The responsibilities of living together—Breaking an engagement.

Religious Marriage or Civil Marriage?

What Changes Occur When You Marry?

Daily Communication

The fundamental qualities—Being able to talk over money matters—Time for each other—Different occupations and interests—Showing mutual consideration and maintaining individuality—Relatives and friends.

Maturity and Solving Conflicts

The Sexual Relationship

The developing adolescent—Youth facing sex—The mutual adjustment—Hygiene—Family planning—Giving and receiving.

The Wife's Career or Job

The dual roles—Involvement of the whole family—A new viewpoint.

Being a Parent

A big change—Children and parents: a mutual adjustment.

Cooperation In The Home

Why do we help each other?—The road to good teamwork.

Leisure Time

Leisure time now and in the future—How to use leisure time—Making the best choice.

Holidays

Traditions, religious and secular—Outside influences—Family traditions.

The Family Age Cycle

Four Pages of Marriage History

A Short History of Marriage in Sweden

Legal Aspects of Marriage

International Marriages

Where to get information—The question of citizenship.

What the Law Says About Children

Custody and guardianship—Children born within wedlock and out of wedlock—The child-welfare worker—The new child-welfare law.

Legal Aspects of the Dissolving of Marriages

Through death—Through divorce—The economic consequences of separation and divorce—Custody of children—General questions about inheritance and wills.

Family Counseling
Society and the Young Family
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Questions for Discussion
Today's family and yesterday's—Youth and education—Youth and love—Engagement—Legal and economical aspects of marriage—Psychological interrelationship—Psychodynamics in living day by day—The child in the family—Traditions—Leisure time—Family and society.

FAMILY COUNSELING

The Family Counseling Bureau offers professional help in questions and problems concerning marriage and the family, such as:

"Preparation for marriage

"Conflicts within marriage

"Problems of the single person

"Social, psychiatric, psychological and gynecological professional guidance is provided by the bureau, and assistance is given primarily through personal consultation."

This quotation is from the introduction to an informational folder distributed by the Family Counseling Bureau of Stockholm, which was started in 1951. It has remained the largest and the most versatile of Sweden's family counseling bureaus.

In the year 1960 the Swedish parliament decided that government funds should be allocated for support of family counseling work. Expansion of this activity was considered an urgent task, and Sweden's Minister for Family Affairs, Ulla Lindström, declared:

"The steadily increasing number of divorces and all the personal problems and difficulties they imply, not the least for the children, underlines the importance of a type of family counseling that can be put to work at a much earlier stage than the compulsory mediation which at present is required before the year of legal separation begins."

Since 1960 such bureaus have been more generally established. However, this work is still in the beginnning stages, and it will undoubtedly remain so for a long time.

The setting up of family counseling bureaus is to be seen in a larger social-political perspective. Earlier, the predominating aim in social work was to provide material and economic assistance. But during the last decades community support of family life has to an increasing degree also been focused on the psychological sphere. This includes psychiatric care for children and adolescents, individual consultation within the area of social welfare and preventive mental hygiene in general.

The Family Counseling Bureau in Stockholm has nine family counselors, most of them social workers with further psychiatric training. Associated with the bureau are a full-time psychiatrist and, as consultants, a gynecologist, a child psychiatrist and a psychoanalyst. Conferences involving the entire staff are arranged regularly. The bureau is at the disposal of all persons who are residents of the city of Stockholm. There is no charge.

The client makes his first contact with a family counselor who follows the case as long as it is being handled by the bureau. The counselor's assistance is in the form of social casework, and aid is focused mainly on the psychodynamic relationship between the two partners in the marriage. Consultations are held with each partner individually, and also with the two in joint interviews. The medical consultants are available when required in a specific case. Thus, treatment may include social casework talks, psychotherapy, a gynecological examination (including birth-control) and practical measures. A certain amount of group counseling work is also conducted with clients at the bureau. Clients may have contacts with the bureau during a shorter or longer period of time depending on the need.

The work is directed toward repairing the functions of marriage that have been damaged, as well as strengthening its healthier aspects. A prerequisite for treatment is the formulation of a family diagnosis (psycho-social in content) which evaluates the couple's interpersonal relationship and the total situation. This diagnosis is the basis for further counseling in the matter.

The reasons that induce a visit to the bureau are of many different kinds. It must be noted that what the client reports is not always his central problem, but rather a symptom of deeper difficulties. If, for example, economic worries are mentioned by a client, it may be that his personal characteristics, dependence on alcohol and other psychic disturbances are primarily in need of treatment. Further, the problems of one family member cannot easily be isolated, but have to be considered as part of the dynamic relationship within the whole family. In the bureau's statistics for 1963, clients' marital problems have been listed in the following manner:

Problem nucleus

	Central bureau		Branch office	
	Number	Percentage [1]	Number	Percentage [1]
Alcoholism	56	17.4	12	12.2
Difficulties with children	38	11.8	31	31.6
Deficient family responsibility	25	7.8	9	9.2
Economic problems	85	26.4	25	25.5
Premarital counseling	9	2.8	1	1.0
Infidelity	55	17.1	18	18.9
Personality problems:				
(*a*) Temperamental differences	112	34.8	35	35.7
(*b*) Disturbed or dwindling emotional involvement	87	27.0	44	44.9
(*c*) Psychological idiosyncrasies or disturbances	83	25.8	41	41.8
Sexual problems	43	13.4	19	19.4
Difficulties with relatives	32	9.9	14	14.3
Jealousy	30	9.3	5	5.1
Miscellaneous problems	62	19.3	11	11.2
Total	729	[2]	273	[2]

[1] Percentage based on number of cases (central bureau 322, branch office 98).
[2] More than 1 problem nucleus may be present in each case.

The task of family counseling is first and foremost to help people who are experiencing marital stress greater than they themselves can take care of, or who are in acute marital conflict. Often an impending divorce can be averted. If this is not the case, the dissolution of the marriage can be made less destructive for those involved, especially for the children. But the counseling also concentrates on preventive measures, such as premarital counseling and marriage courses. Here the counselors make good use of the experience they have gained in dealing with psycho-dynamic interrelations in marital conflicts.

The standard instructions for the governmentally supported family counseling work, issued in 1962, prescribe among other things, that "the counselor should pay special attention to social premarital advice and aid clients who intend to get married, partly with regard to problems that may arise in connection with the intended marriage, and partly with a general survey of marriage and child-rearing."

During premarital counseling, difficulties in the relationship with parents are frequently brought up. By this is meant not only that parents may disapprove of their child's choice of mate, but also that they may hold an entirely different view of marriage. The young people may wish to get married early, for example, but their parents believe they should wait until after vocational training has been completed and their economic situation stabilized. Behind the obvious reasons for conflict may be found emotional ties to parents which strongly influence the relationship between the engaged couple, and which are difficult to reach.

But there may arise problems other than those between the young people and their parents. The interpersonal relationship of the engaged couple, for instance, may have been complicated from the beginning. An emotional ambivalence is often found in one or both of the partners. Indeed, it is common that such difficulties are heightened prior to the final step, marriage.

The need for counseling may also develop in more special situations. A man and a woman who are expecting a child together may, for instance, have hesitations about whether or not they should get married. Or the question of marrying a foreigner can entail serious complications, even if the couple's relationship with each other is excellent. Moving to another country with strange traditions and laws may produce a great strain, and one should be aware of this in advance.

The bureau's marriage courses for engaged couples and newlyweds are very popular. It is preferable that the young people come as couples, since the course is intended not only to impart knowledge but, equally important, to stimulate discussion between them. Lectures are given on legal and economic questions, sexual relations, the psychological relationship and parenthood. A discussion period follows. The presence of other couples who are in a similar situation provides a perspective on one's own problems and a reassurance that these problems are not unique. Within these groups samples of various kinds of relationships come to light. As a result such discussions may promote the psychological awareness of the participants and give them a wider perspective on problems of family life. The young people are also clearly informed as to where they can turn for help if they encounter difficulties.

A SHORT HISTORY OF MARRIAGE IN SWEDEN

1734: The law of 1734 established the death penalty for grave cases of adultery. This penalty was repealed in the year 1779 under the influence of the Age of Reason. Not until 1937 was punishment of adultery completely abolished.

1886: In the year 1886 the League of Swedish Midwives, Sweden's first vocational organization for women, was formed.

1914: A Royal Commission to propose alterations in the marriage laws included a woman as one of its members. Up to this date similar commissions were 100 per cent male.

1915: According to the law of 1686, a woman who engaged in sexual intercourse before marriage was required to pay a penalty of two silver dollars ("riksdaler"). This law was valid until 1915, though it had long since ceased to be applied. On the whole, the present law says nothing about heterosexual relations except where medical considerations or age come into question.

1915: Before 1915 infidelity and desertion were essentially the only grounds for divorce. Marriage was regarded as a unity, the breaking of which by definition implied guilt. The new law regarded marriage as a contract. Thus, a divorce requested by both parties in mutual consent may be granted by the court. Husband and wife have equal right to apply to the court for legal separation or for divorce.

1917: Until the year 1917 Swedish law referred to "illegitimate children." In that year the term "child born out of wedlock" was introduced into laws dealing with the family. A special service, the "child-welfare guardian" (barnavårdsman), was instituted to guarantee justice and protection for the child born out of wedlock.

1920: The "marriage code" (giftermålsbalk) of 1920 has probably had a greater effect than anything else on the transition from a patriarchial to a democratic view of the family. It was then that the husband's guardianship over his wife was revoked. The new law made marriage a union of two free, independent and equal individuals, mutually bound to respect each other's wishes and needs. Both partners have financial obligations in the support of each other and of their children. Housework is regarded as equal to a financial contribution.

1938: Until the year 1938 it was punishable to provide knowledge about contraceptive methods. Nowadays there is no legal barrier to giving complete information, nor to purchasing contraceptive devices. State control exists over all contraceptive devices sold in Sweden. Since the fifties all maternal health clinics are required to provide information about contraceptives and also, regardless of marital status, to supply diaphragms to women who request them following childbirth.

1938: Sweden's first therapeutic abortion law went into effect in 1938. The indications for legal abortions have subsequently been amended, most recently in 1963.

1939: A law passed in 1939 forbade the dismissal of an employee because of engagement or marriage. The law was amended in 1945 to prohibit the dismissal of a woman because of pregnancy.

1949: A new "parental code" (föräldrabalk) was adopted. Both parents have legal authority over their minor children. The law applies equally to all children, regardless of birth in or out of wedlock.

1956: Sex education in the schools was suggested during the 1930's by the so-called "population commission" (befolkningskommissionen). It was introduced in the schools during the 1940's and became compulsory for all children in 1956. A Royal Commission is currently at work on a review and revision of sex education in the schools. Since 1954 broadcasts on the Swedish Radio have assisted in sex education, and school television programs are now being planned.

1964: In the 1964 recommendations for a new marriage law, adultery is no longer an unquestioned ground for the dissolution of marriage. In the past a mother could lose custody of her children on the ground of infidelity. Nowadays, in cases involving custody of offspring, the decision is based on what can be considered best for the children.

A lowering of the minimum age for legal marriage is being discussed. At present, while men and women both come of age at 21, the legal marriage age is 18 for women and 21 for men. Exemptions may be allowed with the approval of the authorities.

THE SEXUAL RELATIONSHIP

A Swedish informational pamphlet.

It is desirable that all social-medical personnel at the different educational institutions acquire information and knowledge about various aspects of the sexual life—biological, social and psychological. In Stockholm, for instance, student nurses at the Municipal Nursing School (Stadens sjuksköterskeskola) attend two two-hour lectures on sexual hygiene as early as in their first year of study. Students preparing to be midwives also receive a number of hours of sexual information, as do superintendents of child welfare centers and of old people's homes.

Following the establishment of a special Psychosomatic Unit at the Women's Clinic of the Caroline Hospital in Stockholm (Karolinska Sjukhuset), medical students in obstetrics and gynecology there have received instruction in sexology, contraception, questions of abortion and sterilization, in psychosomatic disorders connected with pregnancy and childbirth, and in gynecology.

In addition to other literature, all the afore-mentioned groups are Dr. Gunnar af Geijerstam's "The Sexual Relationship" ("Den sexuella samlevnaden"), a 40-page brochure published by the Swedish Association for Social Welfare, together with representatives of the National Board of Health. The brochure, "The Sexual Relationship", is publicly advertised in the waiting room of the Women's Clinic at the Caroline Hospital and is available for a nominal fee at the cashier's office.

The basic view held by the booklet is that a self-evident, mature balance should exist between man and woman, even in sexual matters. Also, that the woman has the same right to happiness and satisfaction in the sexual relationship as does the man:

"Along with the modern woman's awakening demand for fulfillment in the sexual experience, other problems have arisen. In practically all books dealing with sexual questions, it is emphasized that sexual intercourse is inferior unless the woman achieves complete sexual satisfaction (orgasm), preferably simultaneously with the man's ejaculation. In his book, 'The Ideal Marriage,' which is both widely read and from many points of view well worth reading, Van der Velde writes: 'Above all, I wish to impress upon all married men, that every erotic stimulation which does not conclude with orgasm for the wife implies that the man inflicts harm. And that a repetition of this leads either to permanent or to long-lasting injury to both body and soul.' And in another place: 'In a normal and perfect intercourse the mutual orgasm must occur nearly simultaneously; the usual process is that the man's ejaculation begins and immediately starts a climax in the woman's emotional experience.'

"Because, presumably, not a woman exists who during a long sexual life has achieved orgasm with every sexual contact, it is clear that such statements as those just quoted must create feelings of inferiority in practically every woman. And not only in her; her husband must also feel inadequate and unsuccessful as a lover, since everywhere it is pointed out that he is at fault if his wife does not receive complete satisfaction. Thus, the spouses begin to strain themselves with new positions and other changes in the sexual technique in order to achieve the desired result. This means that erotic playfulness and spontaneity are lost. The couple becomes tense thinking of only one goal: that the wife must achieve orgasm. The result is just the opposite, since feelings of inferiority and guilt merely make their mutual experience more difficult. All lovers should be warned against striving for something perfect and absolute in every contact. This is especially true when the woman holds a very positive attitude toward the sexual relationship, which gives her a rich sense of happiness and satisfaction, though a real orgasm does not occur. If the couple value and make use of what they do attain, and forego a steady chase after something more, not infrequently their tension gives way and they come closer to each other in the act of love. Instead of seeking complete sexual satisfaction as the only, inescapable aim of sexual

intercourse, it is better to set one's goals at a more sensible, human and ordinary level. A primary aim of sexual life is to give man and woman the possibility of finding security, closeness and warmth through bodily contact with each other.

"The sexual relationship in marriage does not necessarily need special techniques, words, definitions, agreements or descriptions—and no special material prerequisites, either—in order to become a secret way to stimulation and happiness, as most couples eventually discover. But, nonetheless, it can in many cases be helpful, perhaps, if the spouses are made familiar with a number of facts and viewpoints, regardless of whether the couple is on the way to finding their own path, or whether difficulties of some kind have arisen. Knowledge, experience, habits and attitudes are at greater variance in sexual matters than in any other area. Thus, what is said here will at times seem self-evident and unnecessary to some, while others may find that it is helpful."

Thereafter follow some facts about the structure and functions of the sexual organs, both male and female, and information about the differences in the emotional reactions of man and woman. Next, a discussion of various sexual habits, frequency of intercourse and the effect of tiredness on the sexual life. Following this, a few paragraphs about foreplay and afterplay in connection with intercourse.

Next there is a section about planned parenthood which emphasizes the view that the sexual life itself is a good and positive asset in the interrelation between husband and wife. Children should be wanted and, therefore, planned for.

"Too frequent childbirth is unsuitable both for the mother and for the children. A rule which an experienced professor of pediatrics used to teach is both wise and easy to remember. He said that every mother ought to enjoy the sun of two summers between each childbirth. If better reasons need to be put forth in justification of the use of contraceptive measures by married couples, one may point out the sharp reduction in child mortality that has occurred during the past century. Not long ago, it was considered quite natural that half of the children a woman gave birth to failed to reach adulthood. One can understand that under such conditions there was a far lesser need for voluntary birth control than is the case today, when the child mortality rate is held to only a few percentage points."

It should also be pointed out that the brochure considers planning for the first child. It faces the reality that frequently a child is already on the way when the marriage is performed.

"*Timing the arrival of the first child.* It is usually wise for a husband and wife not to start the first baby immediately after the wedding. Sometimes, of course, there is no choice. But the majority of young married couples benefit greatly from a period in which they can devote themselves solely to each other. Marriage, itself, presents such enormous changes in the pattern of living that the spouses have need of time in which to adapt themselves before they are confronted by the additional adjustment required by a child in the family. However, if the newlywed pair is somewhat older, or if there is any other strong reason for haste, they should, of course, not wait. In any case, contraceptive measures, whether employed for a long or short period, do not decrease fertility in the man or the woman."

Thereafter follows a description of the various contraceptive methods, ranging from coitus interruptus and the rhythm method to diaphragm, oral contraceptives and the intra-uterine devices. It is based on the view that the man and the woman have the right of choice and that they may receive a doctor's advice regarding the contraceptive method that is most acceptable to both of them. Abortion and sterilization are also discussed in this context. Of course, the various places to which both married and unmarried persons can turn for advice in matters of birth control are also described.

"*Advice on birth control.* There is a great need for information about the various methods and devices available for child-spacing, how they are to be used, how dependable they are, to what degree they disturb the spontaneity of sexual intercourse and its rhythm, whether they imply risks, etc. It is helpful if personal counseling in regard to the choice of method can take place. Since individual differences regarding both physical characteristics and emotional attitudes are great, literature and lectures can provide general information but they cannot take the place of counseling. Generally, the adviser should be a medical doctor, preferably a gynecologist since a gynecological examination is necessary when the use of a diaghram or similar device is deemed suitable for the woman. The larger hospitals usually offer such examinations by specialists, and gynecologists

in private practice are to be found in many cities. In addition, the Swedish Association for Sex Education (RFSU) has established bureaus in many parts of the country. Advice on sexual problems is also supplied by many county and municipal bureaus which receive state grants for their primary activity aimed at the prevention of abortion. Sometimes they are called 'Family Counseling Bureaus.' In addition, consulting offices under the same title, run either privately or by the community, deal primarily with problems of the marital relationship. And, lastly, advice on birth control methods is provided at all of the maternal health clinics throughout Sweden."

The pamphlet also contains a paragraph on infertility and its treatment. The entire chapter concludes with a discussion of prenatal and post-natal care, of the husband's role, sexual relationship during pregnancy, and childbirth. In conclusion, there are a few words of summary about interdependence and respect for each other's personality.

"Thus, equal partnership is a reliable key to a satisfying sexual relationship. When sexual difficulties occur it is often just this interdependence which is weak and in need of strengthening. But on the other hand, when the man and the woman come together in mutual generosity, consideration, understanding and respects, their sexual relationship has every chance of being both a well-spring of happiness and a source of strength to fall back on in time of difficulty."

LAWS GOVERNING ABORTION

Sweden has had a law on abortion since 1938. The last time this law was amended was in 1963. Under the law as it now stands, therapeutic abortion is permissible for medical reasons, for medical-social reasons, for social-medical reasons (1946 Amendment), for humanitarian reasons, for eugenic reasons and also if there is reason to assume that the child will suffer from serious disease or defect through damage during the fetal life (1963 Amendment). In more detail, abortion is permissible on the following grounds:

1. If due to a woman's illness, physical defect (Medical reasons) or weakness (Medical-social reasons), childbirth would seriosly endanger her life or health.
2. If with regard to a woman's living conditions and other circumstances there is reason to assume that her physical or psychic strength would be seriously reduced through childbirth and child care. (Social-medical reasons. 1946 Amendment.)
3. If a woman has become pregnant as a result of rape, other criminal coercion or incestuous sexual intercourse, if she is insane or an imbecile, or under 15 years of age at the time of the impregnation. (Humanitarian reasons.)
4. If there is reason to assume that the woman or the father of the expected child would transmit to the offspring either hereditary insanity, imbecility, a serious disease or a serious physical handicap. (Eugenic reasons.) An abortion granted for any such hereditary defect in the mother is contingent on sterilization simultaneously with the abortion, unless sterilization appears risky or unnecessary for her.
5. If there is reason to assume that the expected child will suffer from severe disease or deformity due to injury during the fetal life. (1963 Amendment.)

An abortion for reasons other than disease or a physical defect in the woman (the most cogent medical reasons) may not be performed after the twentieth week of pregnancy. The Swedish National Board of Health may make exceptions and authorize performance of the operation before the end of the twenty-fourth week of pregnancy.

Abortion may be authorized by the National Board of Health for any of the reasons stipulated in the law. In some cases, abortion may be authorized by two doctors or, in the case of an emergency, by the licensed physician performing the operation.

Advice on abortion

By decision of the Swedish Parliament in 1945, government grants shall be given to counties and cities to help them provide aid and advice (free of charge) to women involved in unwanted pregnancies. In 1964 such counseling took place at 20 bureaus. The task of these social-medical institutions is to establish, after investigation, whether or not a legal abortion is indicated.

Psychiatrists, gynecologists and social workers consult with the woman regarding her situation. The woman, herself, must sign an application, on which the

members of the staff then make their recommendations. The application is submitted to a special committee of the National Board of Health. This committee includes both medical and lay members, with a gynecologist as chairman. It decides whether or not grounds for abortion can be considered to exist, or whether the investigation should be supplemented by having the applicant undergo clinical observation or further medical examinations. The time element makes this period of investigation, of course, restricted. Irrespective of whether or not the abortion is granted, the woman is offered continued contact with the bureau, implying not only personal support but also economic aid. The agency receives annual grants from both the community and the government for use in financial support of cases needing temporary help.

The Mental Health Agency of Stockholm, which was started in 1942, deals with three areas that, naturally, are interlocking: advice on abortion, advice about contraceptives, counseling and psychotherapy. The number of cases handled in 1963 in these three fields was, respectively: 1,200, approximately 1,000 and approximately 500.

The staff consists of a director who is a gynecologist, 3 psychiatrists trained in psychoanalysis, 1 consulting psychologist, 10 full-time and 4 half-time social workers, 1 nurse and about 20 consulting gynecologists and psychiatrists.

The following procedure is adopted in the investigation of a case dealing with an unwanted pregnancy. Each applicant for abortion has initially no less than two sessions with a social worker, during which the woman's situation is discussed. The father of the expected child is given an opportunity to state his views. A third person who is well acquainted with the applicant and her daily environment may be given an opportunity to talk with the social worker. Subsequently, the applicant is examined by a gynecologist who assesses her situation from a gynecological and medical viewpoint. Then the woman, often together with the father of the expected child, has one or two talks with a psychiatrist.

Legal abortion in Sweden and foreign women

Many women from different countries continue to come to Sweden in the belief that it is easy to receive a legal abortion there. But the possibilities, in fact, are restricted. In a 1958 Memorandum, the Swedish National Board of Health stressed the fact that authorized abortions are very limited in cases involving a foreign woman who has traveled to Sweden expressly for the purpose of obtaining one.

Only when a severe disease or a physical defect in the woman indicates that a continued pregnancy may seriously endanger her life or her health (i.e., strictly medical reasons), can a woman from abroad count on permission for abortion in Sweden.

When social reasons are the primary grounds for a desired abortion (medical-social reasons such as "weakness," as well as social-medical reasons such as "expected weakness"), the application, in most cases, must be rejected since the necessary social investigation of the case cannot be performed satisfactorily. Such an investigation must be made in conformity with Sweden's legal regulations and must follow the procedures outlined on official forms. The Swedish National Board of Health cannot cooperate in arranging the necessary contacts with Swedish doctors, hospitals and abortion authorities to carry out these investigations.

Therefore, as stated in a memorandum distributed by the Royal Swedish Embassy in Washington, D.C.: "This would consequently rule out cases where foreign women travel to Sweden with the sole purpose of applying for a legal abortion."

In addition, the following facts should be pointed out: Because of the present burden on the authorities engaged in investigating abortion applications, it cannot be taken for granted that an inquiry will be started immediately. Also, it must be assumed that such an investigation, where the social aspects play an important role, will cover a period of 3 to 4 weeks.

Under certain circumstances, a special procedure is to be followed. For instance, in the case of rape, the abortion law states that the crime is to be reported to the police for investigation and prosecution. Again, the question of time is involved, together with the need for contact with the law-enforcement agencies of a foreign country.

Legal abortions in the year 1962

			Number of operations
Total			3,205
Group I (authorized by national board of health):			
Number of applications		4,257	
Granted		2,957	
			2,772
Eugenic reasons		14	
Medical reasons		1,017	
Medical-social reasons		1,680	
Social-medical reasons		163	
Humanitarian reasons		83	
Group II (authorized by 2 doctors):			
Medical, medical-social, and social-medical reasons		422	
Humanitarian reasons		9	
			431
Group III (emergency)		2	2

LAWS GOVERNING CONTRACEPTIVES

While most countries in the world have a steadily growing population, Sweden's birth rate is very low. (In the year 1962 the birth rate was 14.2 and the death rate 10.1, leaving a birth surplus of 4.1.) Nevertheless, planned parenthood in Sweden is of utmost importance, though for reasons other than avoiding a population increase. As recently as 1938, distributing information about contraceptive methods was punishable by law in Sweden. Nowadays planned parenthood is fully accepted and facilities for obtaining knowledge about contraceptives are available to the general public. In public places one can see posters bearing messages directed to young people. Such posters, sponsored by the Swedish Association for Sex Education, say: "Both of you are responsible. Can she depend on you? Can you depend on yourself:?—To be safe is the most important thing for both of you."

The governmental Family Commission recently made an interview inquiry, drafted by professor Georg Karlsson at the University of Uppsala, about attitudes towards family planning, towards the number of children in the family, the expense of rearing children and government support to families with children. The results showed that over 90% of married women try to apply child-spacing measures. It appears further that most married women consider two children an ideal number; less than ⅓ want three children or more. The use of contraceptives increases in direct proportion to mobility from rural to urban areas, and to progress in education and advancement in social status. It seems, however, that religiously active people prefer the rhythm method.

An organization that has played an important role in the development of planned parenthood in Sweden is the abovementioned Swedish Association for Sex Education (Dr. Thorsten Sjövall, president). This organization was started in 1933 by Dr. Elise Ottesen-Jensen, a pioneer in the entire field of sex education and president of International Planned Parenthood from 1959 to 1963.

The Swedish division describes its aims in a widely circulated folder, as follows:

"The Swedish Association for Sex Education (RFSU) is an independent association, with no political nor religious affiliations, founded on democratic principles and including private individuals as well as organizations.

"The association wishes to create prerequisites for:

"1. Harmonious sexual relations.

"2. Greater candor and knowledge in regard to sexual questions.

"3. More open-mindedness and tolerance regarding sexual morals and sexual behavior.

"4. More research and broader information on the biological, psychological, social and cultural aspects of sexual life.

"5. Planned parenthood.

"6. Improved conditions for families.

"7. Increased contributions by Sweden toward solving the world's population problem.

"The association has:

"1. Extensive informational activities.

"2. Clinics for planned parenthood which, in a relaxed and friendly atmosphere, offer professional advice in modern birth control methods and sexual matters. Gynecologists, psychiatrists, social workers and specially trained nurses are ready to help.

"3. A maternity home, 'Ottargården.'

"4. A laboratory for determining pregnancy.

"5. A sales organization including about 40 small, RFSU-owned stores throughout Sweden where prophylactics are sold, a mail order service, automatic coin-operated dispensers and other authorized retail selling."

CHILDREN BORN OUT OF WEDLOCK

There are no "illegitimate children" in Sweden. The aim is to do away with the downgrading of a child implied by this term. The major concern of Swedish legislation is protection of the child. It is believed that all children should have equal rights, and the same possibilities for adequate care, training and education. This basic view ties in with the principles of "The Declaration of the Rights of the Child", adopted by the General Assembly of the United Nations in 1959.

Every child born out of wedlock is assigned a "child welfare guardian" (barnavårdsman), appointed by the Child Welfare Board, whose task is to lighten the mother's burden in every way possible and, above all, to protect the child's rights and interests. The child welfare guardian sees to it that the father acknowledges his paternity and that he agrees to contribute economic assistance toward the child's support. If for some valid reason such assistance has not been granted to the mother, it is possible for her to receive financial aid from the government. A child born out of wedlock has the right of inheritance from its mother and her relatives, and also from its father in certain cases. A new law is pending that will guarantee the same right of inheritance for all children, even from their father and his relatives. When this law has been passed, the last trace of discrimination exhibited by society against children born out of wedlock will disappear.

In matters dealing with the family, work is being done to improve conditions for families with children by, for example: providing care during pregnancy, childbirth and the post-natal period; government stipends for child support and schooling; tax deductions for families; and education and counseling in mental hygiene.

Quite naturally, maternity care is the same for all categories of mothers with children. During the 1950's, hospitals in Sweden received instructions to address unmarried mothers by the title, "Mrs." Unmarried mothers with children have the right, of course, to live in municipally built dwellings, and they are also entitled to government housing grants when necessary. Previously, government loans to furnish a home were allotted only to engaged and newly-wed couples. Today unmarried mothers, who have care of their child, are also entitled to such loans. An unmarried mother with a baby is also considered a family, and in school textbooks there is reference to one-parent families. In various maternity homes a mother and her baby can live during the first period of adjustment. She then has the possibility of continuing her education or her employment.

The basic attitude of society is to afford support for unmarried mothers, so that they may take care of their children, if they so wish. A recent investigation by the Child Welfare Board of Stockholm showed that among 500 unmarried mothers under the age of 20, the majority wished to keep their children. But there is also a careful procedure for adoption, as well as many opportunities for placement of children in good foster homes.

In spite of the fact that the authorities allow no discrimination against any group of children, unmarried mothers and their children still encounter social stigma in many places, even though this is denied. Therefore "forced marriages," an expression that is internationally well known, occur. In Sweden, more than 40 per cent of all first-born babies are conceived before the wedding takes place. A certain number of these marriages surely are forced, but many of them tie in with an old tradition in Swedish rural society, namely, getting married only after a child is on the way. Because of the current housing shortage in Sweden's larger cities, a new tradition is in the process of being formed, that is, getting married when one has acquired a dwelling. The fact is that a young couple on the municipal housing list reduce their time of waiting for an apartment by a whole year, if they are expecting a child.

Among large groups of people nowadays there is a tendency for the parents not to force a daughter into marriage because she is expecting a child. Instead,

the daughter is encouraged to keep her child, complete her schooling or vocational training, and perhaps at some later date get married to a man whom she really loves.

LIS ASKLUND'S "LETTER BOX" ON THE SWEDISH RADIO

The Swedish Radio publishes in its weekly program-guide a column entitled, "Between Us" ("Människor emellan"), consisting of letters that Mrs. Asklund has answered on her "Letter Box" program. People are invited to turn to her for help in the matter of relationships. The following letters may serve as illustrations of how young people face some of the problems treated in the preceding chapters.

Why wait until marriage?

Letter:

"Under the above caption we should like to know what you believe is correct in a certain situation. We belong to a group of 20 young people between the ages of 15 and 25 who get together every Saturday evening. At these gatherings there are both church-goers and non-church-goers, so we may be said to represent young people in general. Each Saturday night we have a special topic which we discuss. Last time we talked about whether it is right or wrong to have sexual relations before marriage. During the discussion, different viewpoints were expressed. Since several religious young people were present, we avoided the strictly moral aspects of the question. We felt that this might divide the group into two opposing sides and make the discussion more difficult. Starting from the point of view of what is right and best for the individual and what is best for society, we put forth our own opinions. When one is young, one wants to have clear and definite concepts, and this is perhaps what led us to write to you for your opinion on the matter.

"WONDERING YOUNG PEOPLE."

Answer:

"I think I know what you mean when you say, 'we avoided the strictly moral aspects of the question,' but nevertheless, I should like first of all to discuss the word, 'moral.' Unfortunately, this word has been distorted by its frequent use in connection with joylessness and condemnation, and the word, 'moralist,' has, rightly, been imbued with a derogatory connotation. Yet, no person can live together with others in the absence of morals. One can define morals by the words 'respect' and 'responsibility.' It is on them that all human relations depend. And in regard to the sexual life, which, of course, is the most intimate and most demanding form of human interdependence, these terms apply to a very high degree. In intimate relations two people are so close, even physically, that they strongly influence each other, toward either personal development or inhibition, and by either wounding or by healing.

"It is, for example, inconsiderate of a boy to pressure and threaten the girl whom he says he loves, if deep in her heart she wishes not to begin a sexual relationship. Consideration implies, of course, that one must not inflict damage on the other partner. It is also irresponsible of both partners if they enter into a more or less temporary affair. One must assume responsibility not only for what happens to the other partner, but also for one's own life and development. Added to this is the big responsibility for a third person—the child—who may be the result of an intimate relationship.

"I have received letters from many young couples who write that they have agreed to wait with sexual relations until after the wedding because 'not until then can we take responsibility for an eventual child.' But I also receive letters from other engaged couples who say that they cannot wait because 'it will be such a long time before we can get married.'

"My answer to your letter is this: Love between two people is certainly the most beautiful thing in life, but only if it is experienced in the right way, that is to say, in a manner that is natural and sensible for one's age. Before two people take one of the most important steps in their lives—beginning a sexual relationship—they should, in my opinion, see that the following conditions have been met:

"They must know each other well, love each other and be prepared, together, to take care of an eventual child. They must both desire this. There should be no question of pressure from one side and self-sacrifice on the other.

"They must be aware of what they are letting themselves in for.

"Most young people in their teens and many who are older do not meet these requirements. Therefore, they are not mature enough to engage in sexual relations.

"LIS ASKLUND."

The girl should say no

A letter from a young man:

"What has surprised me most is that young girls so often write to you and describe how boys nag and nag in order to get them to do what they want, until finally the girls give in to the boys' demands. They are often afraid they are not like other girls if they say no, and they are also afraid of losing their boyfriend. Frequently, the boys say, 'If you don't, then I'll stop seeing you.'

"Please, Mrs. Asklund, try to impress on the girls that they should not give in, because a boy will never leave a girl if he really loves her. We fellows are not as tough inside as most people think. We value most the girl who sticks to her principles.

"TOUGH GUY."

Going steady

A letter from a young girl:

"We are two girls 17 years of age. We heard on the 'Letter Box' about a girl 16 years old who still did not have a steady boyfriend. We think she is very sensible in believing that intimate relations at that age could injure her entire future. Each of us has had a boyfriend with whom we engaged in intimate relations. We did not suspect then what consequences might follow.

"By looking at an open diary, our parents have found out about these relations. One does not think about the fact that one can cause parents to be deeply disappointed. They trust you, as they say. And just because of this, our whole happy world came tumbling down. We had luck because we escaped other consequences, and now we want to send a word of encouragement to those girls who are not yet going steady. Remember that you are not the only ones. For the most part, we now go around with other girls, and we always have fun. We are just ordinary teen-agers, and that is why we thought we could write to you.

"Only seventeen."

Answer:

"Thank you for writing to me. I am sure that what you young people say carries far more weight than all the advice I or other older people can give. A teen-age girl longs for love and attention, but she is more romantically-inclined than a boy of the same age. I believe that your letter will give at least some girls who read it courage to follow their own, sound inclinations, which say that they are not mature enough to begin a sexual life. Thus, they will be saved from risking their entire future, instead of giving in just because they are afraid to seem 'cold and backward,' as a young girl once wrote to me.

"Lis Asklund."

SOME STATISTICS (1962 FIGURES)

Sweden's population, 7,581,148, of which 3,782,252 were men and 3,798,896 women.

Number of marriages, 53,913.

Divorces, 8,849.

Childbirths, 107,284, of which 13,297 were born out of wedlock.

Number of single mothers with children under the age of 16, 91,987 (including unmarried, widows, divorced women and married women not living together with their husbands. 1960 figure).

Number of single fathers with children under the age of 16, 10,873 (including unmarried, widowers, divorced men and married men not living together with their wives. 1960 figure).

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An ABZ of Love by Enge & Sten Hegeler.

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Board of Education, Stockholm. 1964. Price, Sw.Cr. 10.00. 93 pp. Obtainable from Board of Education, Fack, Stockhom 8, Sweden.

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Social Welfare Board. 1964. 289 pp. Price, Sw. Cr. 10.00. Gives an over-all view of the situation of the child in Sweden, in connection with the current debate on family problems and what society is able and willing to do today. Several articles are in English, for example, "Recent changes in family structure", a much-discussed lecture given by Alva Myrdal at the 1964 OMEP conference. Some articles are followed by a summary in English. Obtainable from the Social Welfare Board, Fack, Stockholm 2, Sweden.

Undersögelser over unge kvinders sexuella adfaerd by Kirsten Auken.

(Trans. Young women's sexual behavior in Denmark.) Almqvist & Wiksell, Stockholm. 1953. 414 pp. Price, Sw.Cr. 15.00. Thesis for medical doctor's degrees. With summary in English. Obtainable from Almqvist & Wiksells bokhandel, Gamla Brogatan 26, Stockholm C. Sweden.

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Swedish Institute, Stockholm. 1964. 116 pp. Price, Sw. Cr. 12.50.

For and Against the Welfare State. Swedish Experiences by Ernst Michanek

Swedish Institute, Stockholm. 1964. 47 pp. Price, Sw. Cr. 5.00.

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Swedish Institute, Stockholm, 1962. 7 pp. Free of charge.

Swedish Laws on Sterilization, Abortion and Castration. A summary.

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Therapeutic Abortion and the Law in Sweden

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WHERE MORE INFORMATION CAN BE OBTAINED

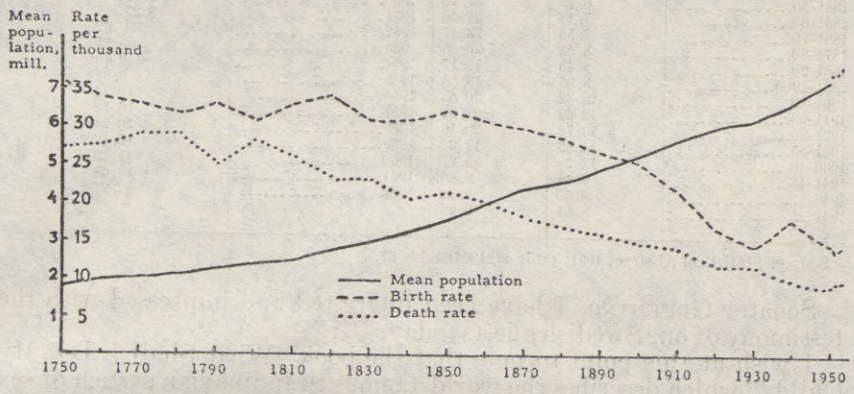
The Swedish Institute for Cultural Relations, Stockholm 3, Sweden. National Board of Health, Wallingatan 2, Stockholm 3, Sweden. RFSU, Swedish Association for Sex Education, Box 17006, Stockholm, Sweden. Rev. ed. 1965

Translated by Marjorie Lundin.

EXHIBIT 92

(Map and Tables Excerpted From The Social Structure of Sweden, the Swedish Institute for Cultural Relations With Foreign Countries)

Swedish population growth, 1750-1960.



Urban and rural population, percentage distribution

	Towns	Market towns	Nonadministrative aggregates	Rural districts	Total
1930	33	6	10	51	100
1940	37	7	12	44	100
1945	42	8	11	39	100
1950	47	8	13	32	100
1960	51	7	15	27	100

Source: Folkräkningen 1960, v.

Civil status of the Swedish population in 1945 and 1950

[Per 1,000 over 15 years of age in respective groups]

Age	1945			1950		
	Unmarried	Married	Widowed; divorced	Unmarried	Married	Widowed; divorced
Males:						
15 to 30	783	214	3	753	242	5
30 to 50	222	756	22	200	774	26
50 to 65	147	775	78	141	786	73
65 and over	126	574	300	129	586	285
Total	362	578	60	325	612	63
Females:						
15 to 30	617	377	6	579	412	9
30 to 50	202	753	45	162	791	47
50 to 65	213	617	170	206	626	168
65 and over	206	345	449	215	343	442
Total	321	566	113	286	595	119

Source: Folkräkningen Dec. 31, 1950, pt. II, p. 12.

Illegitimate births, 1821–1962

[Children born out of wedlock as percent of total children born]

	Rural	Urban		Rural	Urban
1821–30	5.07	22.27	1948	9.22	9.62
1831–40	4.99	24.34	1949	9.00	9.81
1841–50	6.75	27.10	1950	9.32	9.75
1851–60	7.12	25.50	1951	9.27	10.40
1861–70	7.55	23.47	1952	9.92	
1871–80	8.53	20.86	1953	9.77	
1881–90	8.45	18.17	1954	9.79	
1891–1900	8.95	18.55	1955	9.95	
1901–10	10.32	20.63	1956	10.24	
1911–20	12.62	22.01	1957	10.12	
1921–30	13.70	20.16	1958	10.24	
1931–35	14.55	17.22	1959	10.42	
1936–40	12.29	13.27	1960	11.28	
1941–45	9.44	9.46	1961	11.69	
1946	9.50	9.20	1962	12.24	
1947	8.84	9.26			

Source: Statistical Abstract 1951: table 42, 1964: table 37.

Senator GRUENING. I have been interested and impressed with the testimony of our Swedish guests today.

I wish at this point to note that the book "What Shall I Tell My Child?" which describes the world-famous Scandinavian system of sex education was printed this year by Crown Publishers, Inc., of New York. It contains an introduction by Theodor Reik, psychoanalyst and author.

I direct that at this point in the record there be placed the article entitled "A Loop That Can Shake the World."

EXHIBIT 93

A LOOP THAT CAN SHAKE THE WORLD

(By Richard C. Davids, Rural Life Editor, Farm Journal, February 1966, pp. 84–85)

A RIDICULOUSLY SIMPLE DISCOVERY MAY HALT THE POPULATION CRISIS AND HEAD OFF MANKIND'S TWIN SCOURGES—FAMINE AND ITS BLOOD BROTHER, WAR

A dime's worth of plastic a little over an inch long—the Lippes loop—may have more impact on the world than the atom bomb.

Because of it mankind can, if it decides to, slam the brakes on its runaway population—easily, cheaply, safely—and thereby escape a famine in the underdeveloped half of the world that otherwise seems inevitable.

Already, the Lippes loop is beginning to cut the birth rate in Korea, Hong Kong and half a dozen other places where starvation loomed as certain as night.

India figures that the loop can cure its staggering population problem inside of ten years!

The most effective of several intrauterine devices (IUDs) available to doctors, the loop is placed in the uterus, where it can remain throughout a woman's fertile years, or can be removed by a physician any time she desires children. After its removal, nine out of ten women become pregnant within a year. About 15 percent of women can't retain the loop or must have it removed. But for the remainder it is 98 percent effective, requires no attention, and there's no discomfort, no danger to health. In fact, several women in Israel who came to an infertility clinic because they wanted children were found to have been fitted with IUDs 15 years before in Germany, which they'd forgotten about!

The idea isn't new. Centuries ago, Arabs knew that a stone in the uterus of their camels prevented pregnancy. In the 1920s, a German doctor placed a silver ring the size of a nickel in the human uterus. But because of an epidemic of gonorrhea—in no way related—his work fell into disrepute. A few doctors in England, Japan and Israel, however, continued using IUDs.

Six years ago, American medical scientists began to experiment. Among them was Jack Lippes, a young doctor at the University of Buffalo, son of Rumanian immigrants.

His college friends were aghast. Why gamble his reputation on something that had "failed" years ago? Besides, there was the contraceptive pill, remarkably effective.

But the people who came to the Buffalo clinic where Dr. Lippes served couldn't afford the $24 yearly bill for pills, nor did they always remember to take them.

So the young doctor went right ahead. He molded his little plastic gadgets in his kitchen and baked them on his wife's cookie sheet. Evenings, his wife and three children assembled them as they watched TV. Patients, wives of staff members, and Mrs. Lippes herself participated in the testing program.

Months of anxious waiting followed, while various unfounded rumors got into print. One report was that IUDs started infections. Another, that they caused cancer! Both were proved utterly false.

Slowly, results came from thousands of carefully documented cases. Of the four kind of IUDs mass-tested by the National Committee of Maternal Health, the Lippes loop took top rating.

The pill was surest, but demanded day-to-day attention. The loop took only one decision, didn't have to be remembered, and there was only a one-time cost. Vasectomy (severing the seminal tubes of males) was surer and required only one decision, but was difficult to reverse in case a couple wanted more children.

As IUDs go into mass production and use, the question arises, will they increase promiscuity by removing danger of pregnancy? So far, experience at the Buffalo clinic has been just the reverse.

The loop keeps making news.

In Hong Kong, a refugee woman doctor, with three nurses, installs 75 a morning, or one every 2⅔ minutes.

In Korea, a quarter million are already in use, and that nation has given population control 4.5% of its entire budget! The aim is a stable population in 10 years.

Formosa: 100,000 in use.

Chile, whose hospitals are overloaded with criminal abortion cases, today has 13 IUD clinics.

Jamaica, where 76 percent of children are born out of wedlock is starting a loop campaign.

In Nepal, Sir Edmund Hillary, who climbed Mt. Everest, is bringing the loop to his friends, the Sherpas. Later he'll build them a hospital. "They need birth control before death control," he says.

Church World Service is air-expressing kits to foreign doctors from Argentina through Zambia.

World Neighbors, which exports U.S. farming know-how, now distributes Lippes kits.

A loop for cows, developed by Harold Hawk, USDA scientist, is being tried on India's sacred cows, which breed unchecked until they starve to death.

Dr. Lippes and a score of other American physicians equally dedicated are circling the globe, holding seminars, clinics. At an all-South American conference last fall, even Catholic priests took part. Every Latin American country except Cuba has a family planning center.

India—where one-seventh of the whole human race lives—is crucial. I began to comprehend the size of that population when I stood on the floor of Parliament in New Delhi three years ago and a member said to me casually, "I represent a million people, as do all of the other 450 members here." In the three years since, there are 30 million more people. Every month, almost a million more mouths to feed!

The Hindu religion of India doesn't oppose limiting a family. But a son is an absolute necessity for lighting the crematory fire of his parents, and since half the children never survive childhood, it was safest to have six or seven. Today, antibiotics and other drugs are keeping those children alive.

Last August, India started manufacturing 7,000 Lippes loops a day. It's no surprise that they're being used as fast as they're made.

Family planning is urgent, personal to half-starved people. A woman in Pakistan walked 125 miles to be fitted. As far back as two years ago, half a million men in India had submitted to vasectomies, and 25 barefoot farmers took the day off to come explain to me why they had it done. At a distant oasis in the Sahara, the inhabitants kept asking me the same question: "How can Americans have only two, three children?" One man, father of 16, had heard that castor beans (a poison) would keep his wife from conceiving. But she was pregnant again. "We love our children very much, but we are too poor to have another," he said.

Just such personal heartache—even more than the world problem—concerns Jack Lippes, a warmly human person. "Just think, if every child could be a *wanted* child," he says, "how much less unhappiness—even delinquency—there might be."

This year—1966—could be a turning point in man's battle to control world population. Italy has repealed a ban against family planning literature that was punishable by a year in jail. So has Turkey. Moslem leaders indicate no conflict with their holy Koran.

In a Gallup poll last year 78 percent of Catholics favored birth control for all who wanted it, as against 53 percent two years earlier. In Massachusetts, Cardinal Cushing urged repeal of the state law against family planning. This, of course, is not the same as condoning contraceptives, which the Catholic Church has not done.

Population control can't come too soon for Dr. Ray Ewell, soils scientist and research head of the University of Buffalo. Without it "famine will likely reach India, Pakistan and China in the early 1970s; then Indonesia, Iran, Turkey and Egypt, followed by most of Asia, Africa and Latin America by 1980." In Budapest last fall, Dr. Ewell watched seven abortions in one morning at an "interruption clinic"; there are 20 such clinics in that city alone!

Never in history has population grown so fast, while people everywhere are living longer. Three years after Ceylon started using DDT, the death rate dropped 50 percent! In 35 years, if unchecked, world's numbers would double; in 60 years, quadruple, with biggest increases in countries hungrier today than a generation ago.

In Egypt where a loop program is under way, Nasser said: "The world's exploding population is just as dangerous as nuclear war."

Perhaps the simple Lippes loop can head off such catastrophe.

Senator GRUENING. The hearing will stand in recess until the call of the Chair.

(Whereupon, at 11:30 a.m., the subcommittee adjourned, subject to the call of the Chair.)

67-785—66—pt. 3——5

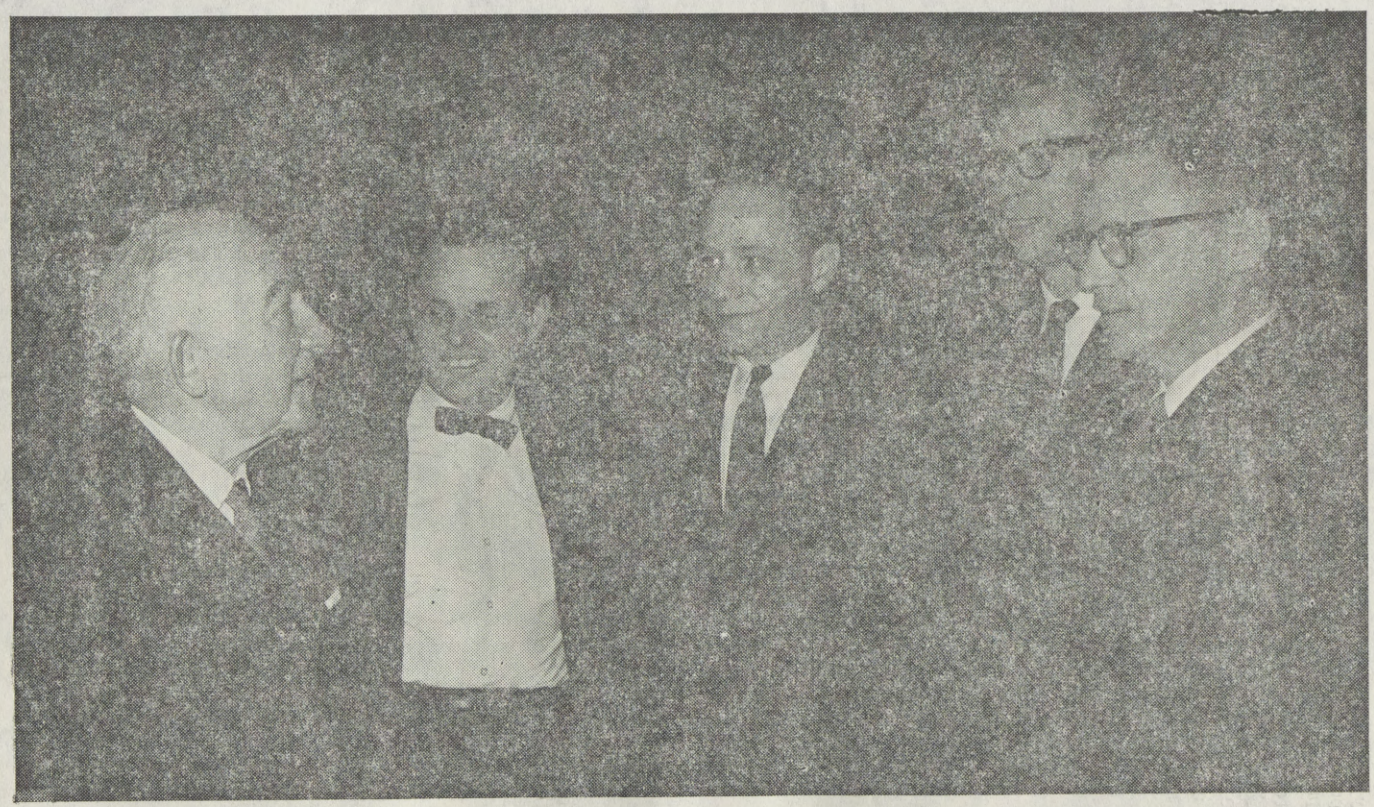


EXHIBIT 94

The witnesses who testified on S. 1676 before the Subcommittee on Foreign Aid Expenditures, March 31, 1966, were: Mr. Arthur M. Watkins, Dr. Kermit E. Krantz, Dr. Leonard J. Duhl, and Dr. Donald N. Michael. (Pictured, left to right: Senator Ernest Gruening, chairman; Dr. Duhl; Dr. Michael; Dr. Krantz; and Mr. Watkins.)

POPULATION CRISIS

THURSDAY, MARCH 31, 1966

U.S. SENATE,
SUBCOMMITTEE ON FOREIGN AID EXPENDITURES,
COMMITTEE ON GOVERNMENT OPERATIONS,
Washington, D.C.

The subcommittee met at 10:08 a.m., pursuant to recess, in room 3302, New Senate Office Building, Senator Ernest Gruening (chairman of the subcommittee) presiding.

Present: Senators Gruening and Simpson.

Also present: Laura Olson, special consultant on population problems; Mary A. Miller, clerk; Carole Ransom and Harriet Eklund, editors, Subcommittee on Foreign Aid Expenditures.

OPENING STATEMENT OF THE CHAIRMAN

Senator GRUENING. The hearing will please come to order. I direct now that the picture of our distinguished witnesses be included in this hearing record.

It will be a year tomorrow since Senate bill 1676 was introduced.

I think the Government Operations Subcommittee on Foreign Aid Expenditures may truthfully report that during this time the population dialog has developed calmly, considerably, and considerately.

Some people may ask: "How can the many ramifications of the population explosion be discussed calmly and in detail"?

The Subcommittee on Foreign Aid Expenditures does not purport to have the precise answer, but does suggest some of the reasons why this has indeed happened.

1. The concern of President Johnson who 19 times publicly since his election has expressed his concern about the "multiplying problems of our multiplying populations." Starting with his January 4, 1965, state of the Union message when he said, "I will seek new ways to use our knowledge to help deal with the explosion in world population and the growing scarcity in world resources." And more recently in his domestic health and education message of March 1, 1966, our President has faced forthrightly this most urgent of problems. On March 1, he discussed specifically the subject of family planning when he said, in part:

"It is essential that all families have access to information and services that will allow freedom to choose the number and spacing of their children within the dictates of individual conscience."

2. The concern of former President Dwight Eisenhower who addressed a letter to the Subcommittee on Foreign Aid Expenditures when hearings on S. 1676 began June 22, in which he said:

"If we now ignore the plight of those unborn generations which, because of our unreadiness to take corrective action in controlling population growth, will be denied any expectations beyond abject poverty and suffering then history will rightly condemn us."

3. The concern of former President Harry S. Truman, who with Mr. Eisenhower is cochairman of Planned Parenthood-World Population.

4. The sincere desire of members of the Catholic Church to find ways in which public policy and private morality may coexist harmoniously.

5. The concern of such internationally known citizens as Dr. Alberto Lleras Camargo, former President of Colombia, who on July 9, 1965, told the subcommittee:

"Latin America is breeding misery, revolutionary pressures, famine, and many other potentially disastrous problems in proportions that exceed our imagination even in the age of thermonuclear war.

"The only way to solve these problems is through population control. Today this can and must mean reducing the rate of growth. In the future, it might well be in order to step it up again, if the effects of the reduction should turn out to be excessive or unhealthy. But as Huxley has said, since man has made it his business to control death—and in large part he has succeeded—he cannot escape the need to control birth."

6. The concern of our colleagues, such as Senator Peter Dominick, of Colorado, who on August 10, 1965, told the subcommittee:

". . . in the light of the expected increase in demands to be made upon our natural resources and, especially the critical need for clean water in the future, we should now move ahead to find ways to keep population growth in balance with our ability to develop the world's resources to provide an adequate standard of living for the world's population. This bill is a step in the right direction."

7. The concern of Secretary of Agriculture Orville Freeman, who on March 3, 1966, told the subcommittee:

". . . More and more it appears that the task of feeding the rapidly growing populations of the less developed regions of the earth will be man's No. 1 challenge over the remaining three decades of this century. Even more significant than the actual increase in world population, most of the additions are coming in the less developed regions—those regions least prepared to feed them—uncontrolled population growth in the less developed countries poses a more serious threat to nutritional well-being and ultimate economic viability than any other single factor—we must help the developing countries with family planning programs, bringing their population growth rates down to manageable levels."

8. The concern of the Government of Sweden whose Swedish International Development Authority's director general, Ernst Michanek, told the subcommittee on March 9, 1966:

"We have come here to talk about the most urgent problem of the present world: the problem of hunger and overpopulation. This is, I submit, one and the same problem. We consider it a human right for all parents to plan the size of their families—including the case of subfertility—and to be assisted with a view to getting the number of children they can provide for.

"I am talking this time of a problem confronting the whole world, a problem of equal concern to all nations."

This morning I have cited only a few of the many thousands of pertinent statements made before the subcommittee by 80 distin-

guished witnesses during the course of the previous 22 public hearings on S. 1676, my bill to coordinate and disseminate birth control information upon request at home and overseas.

Congressman Robert Duncan, of Oregon, originally had hoped to testify at the population crisis hearings last year, but illness prevented his appearance. Earlier this month, on March 9, when the Subcommittee on Foreign Aid Expenditures heard from representatives of the Government of Sweden, Congressman Duncan was also scheduled to be a witness. That morning he thoughtfully and courteously made his time available to our guests from Sweden. The subcommittee deeply appreciates his so doing.

At this time I will place in the record a brief biographical sketch and his prepared statement. The statement will appear in the record as if read. Congressman Duncan advised the subcommittee that he is in support of the general objectives of S. 1676.

BIOGRAPHIC STATEMENT: ROBERT BLACKFORD DUNCAN

Representative Duncan was first elected to the Congress in 1961. He has served with distinction on the Agriculture and Interior Committees so he knows a great deal about the state of our natural resources. Congressman Duncan is now a member of the Appropriations Committee where he serves on the Subcommittees on Labor, Health, Education, and Welfare. Each of these areas, as has been shown in earlier testimony presented to the subcommittee, is affected by population growth.

Congressman Duncan was born in Normal, Ill., December 4, 1920. He was graduated from the Illinois Wesleyan University in 1942, but prior to that had attended the University of Alaska in 1939–40, and worked in the goldfields of Alaska.

During World War II Bob Duncan served in the Naval Air Force. He is a member of the Naval Reserve.

A lawyer, he received his LL.B. from the University of Michigan in 1948.

He and his wife Marijane have seven children.

Before coming to the Congress, he was twice elected speaker of the State of Oregon's House of Representatives, an unprecedented event, and was appointed by President Kennedy to serve as one of three legislators on the Advisory Commission on Intergovernmental Relations.

He is a member of the Methodist church, the American Bar Association, the Salvation Army, and is a director of Mercy Flights.

BIOGRAPHICAL SKETCH OF THE HONORABLE ROBERT B. DUNCAN

Robert Blackford Duncan, Democrat, of Medford, Oregon; born in Normal, Illinois, December 4, 1920; raised in Bloomington, Illinois; attended grade and high school there; graduated Illinois Wesleyan University, B.A. 1942; attended University of Alaska 1939–40 and took correspondence courses from the University of California in 1940; during World War II served in the U.S. Naval Air Force 1942–45; presently Lieutenant Commander in the Naval Reserve; returned to studies and graduated University of Michigan Law School, LL.B. 1948; worked as a seaman in the Merchant Marine, in the gold fields of Alaska, for hybrid seed corn company in Illinois, for a bank in Chicago, and as an insurance adjuster; passed the bar in October 1948 and practiced law continuously in Medford until elected to the United States Congress; married the former Marijane Dill; seven children—Nancy, Angus, David, James, Laurie, Bonnie Dee and Jeannie.

Nominated on a write-in vote for the Oregon State Legislature in 1954 but declined for business reasons; elected state representative from Jackson County in 1956, the first Democrat in over 20 years; served as Chairman of the Judiciary Committee and a member of Ways and Means (appropriations), becoming Vice-Chairman during the 1957 special session; served on the Emergency Board (known as the interim legislature), the Legislative Counsel Committee, and the Interim Committee on Education; earned a reputation for hard work in committee, effective debate on the floor, and care in the expenditure of the taxpayers' money.

Reelected in 1958—his colleagues demonstrated their confidence in his ability and fairness by electing him Speaker, an unusual distinction; served as the first chairman of the newly formed Fiscal Committee, on Legislative Counsel Committee, the Emergency Board, the Interstate Compact Commission, the Special Centennial Committee and the important interim Labor-Management Committee.

Reelected in 1960, also reelected Speaker, an unprecedented event in Oregon politics; served on the Judiciary Committee, Legislative Counsel Committee, Fiscal Committee, Emergency Board, Interstate Compact Commission, and from time to time through both terms as Speaker served as Acting Governor during the absence from the state of the elected Governor and the President of the Senate; served on various interstate committees and was appointed by President Kennedy to serve as one of three legislators on the Advisory Commission on Intergovernmental Relations.

Member of the Methodist Church; Medford Active Club and its president for one term; member and chairman for one year of the Jackson County Juvenile Court Advisory Committee; Board of Directors of Mercy Flights, Member of the American, Oregon and Jackson County Bar Association; the National Association of Claimants Compensation Attorneys, formerly on advisory board of the Insurance Company of America, Rogue Valley Manor and Salvation Army; Medford Crusade; has been active in Boy Scout work; also active in other church, public and community organizations.

Nominated from a field of four, including a former Congressman and a former Democratic State Chairman to be Democratic nominee for Congress, Fourth District of Oregon (Counties: Coos, Curry, Douglas, Jackson, Josephine and Lane. Also Linn County until January 1, 1967.). Elected to the 88th Congress in November 1962; served on Agriculture Committee (Subcommittees: Livestock and Feed Grains; Wheat; Equipment, Supplies and Manpower; Family Farms; and Forests) and on the Interior and Insular Affairs Committee (Subcommittees: Irrigation and Reclamation; Mines and Mining; and Public Lands); reelected to 89th Congress, serving on Appropriations Committee (Subcommittee on Labor-Health, Education, and Welfare).

STATEMENT OF HON. ROBERT B. DUNCAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OREGON

Mr. DUNCAN. Mr. Chairman and members of the committee, I appear this morning in support of the general objectives of S. 1676 which is a bill dealing with the reorganization of the Departments of State, and Health, Education, and Welfare, and other purposes.

The details of the reorganizations proposed are, to me, of secondary importance. It is the "other purposes" that carry the real thrust of the bill and wherein lie the real benefits to be achieved by the world's peoples in the years to come as a result of the work and courage of this committee and its chairman. Not the least of the immediate benefits flowing from the introduction of—and hearings on—this bill is that, at long last, the cloak of secrecy and repression and reticence that has shrouded even the discussion of the subject of population control has been thrown aside. Today there is free and open discussion of a once taboo subject—the first requisite of the solution of any problem.

Like any legislator, or lawyer, I am a generalist—not a specialist. Fortunately, this committee has at its disposal all kinds of experts who can testify to the details of proposed solutions and who can give

scientific testimony backed by statistics. I shall not repeat such testimony because I know the record is already replete with such from original sources.

Rather, I wish primarily to publicly raise my voice along with others in this body who recognize the disastrous consequences of our failure to come to grips with the social problems—as well as the physical problems—facing the world in the months and certainly the years to come. These are not the problems of dealing with surpluses, too many calories, three cars and two homes in every family, nor how to eliminate what we in this country call poverty by standards which are unimaginable in much of the world. They are the basic problems of simply maintaining life in a world whose population seems to be outstripping its productive capacity.

Last month I attended hearings in the House on our Public Law 480 program held by the House Agriculture Committee. I heard agronomists and demographers testify in frightening terms. In 1963 I attended the Food and Agriculture Organization meeting in Rome and returned home appalled by the simple problem of feeding the world's peoples. These experiences reinforced what I had been saying for years; namely, that the United States had no surplus food problem; that we could not talk in terms of surpluses in a hungry world; that we simply had not mastered the problems of marketing and distribution necessary to get our food into the hungry stomachs around the world.

I thought even further. I decided that our efforts toward peace and disarmament—our traditional approaches thereto—were a case of putting the cart before the horse. I decided that we could not look forward to a world at peace as long as half of the world population was going to bed hungry every night and even more were suffering from malnutrition. Perhaps 50 years ago a famine in India, subhuman living conditions in Latin and South America and Africa and Asia, could exist without a direct threat to the safety of this country. In this year of 1966, with communications such as they are, people in those countries realize that other people do not live as they do. They will not starve quietly. A chaotic and dangerous threat to the world smolders just below the surface.

I am not certain that we yet have time to avoid this. But we must try—not just on one front but on many. Our bounty must be shared—but there are only three surplus food producing areas left in the world and that will not be enough. Already our wheat supplies are a few tons below what we have considered to be our own reserve requirements.

The agricultural productivity of the underdeveloped nations must be increased. There are still areas where they plow with a crooked stick. Too much emphasis has been on the industrial development of the emerging nations when what they need first is a strong agricultural foundation for their further development.

And, finally, we must go full speed ahead on study and research of human reproduction and make freely available to all such knowledge as we have, and such as we may acquire, to the peoples of this world—including this country.

I serve on the Appropriations Committee in the House. There are increases in the budget for this purpose. They are not enough. They should be more. As you know, the President has budgeted only $600

million increases in the nonmilitary field. Many of my constituents feel that all of these increases are classified as "butter," and that they should be eliminated. In my mind such as we are discussing here is not butter. They are as vital as any programs we have. I intend to support and urge increases in these areas.

Ethical and religious problems still abound in the area of population control. These should be and must be respected. But these problems do not exist today for many of the world's peoples and we will do much if knowledge is developed and disseminated to those who can and those who wish to use it.

There are those who will say that I am not the one to even discuss population control in view of the contribution my seven children make to the world's population. Again, I say that these decisions are individual ones. All of my children are wanted. It's a struggle, but all of them are being fed and educated and loved. Many children are not so fortunate.

I am aware, too, that population pressures have played a part in the prodigious development of our civilization and that future technical developments may avert the evils we foresee. But in spite of all we might do to feed and control population, these pressures will continue to exist. I am forced to the belief that it will take all of our efforts to do the job and we need have no fears that we will oversucceed in any one.

Thank you, Mr. Chairman, for your time and that of your committee.

Senator GRUENING. Our witnesses today will discuss national housing needs and future trends in the building industry, medical research relating to the common dignity of man and the building of pleasant urban surroundings, since man today at least seems intent on moving into urban centers.

BIOGRAPHIC STATEMENT: ARTHUR M. WATKINS

Our first witness will be Mr. Arthur M. Watkins, who is a professional writer specializing in the housing and building fields, with emphasis on the personal and human aspects of "people versus their housing." He is the author of books on the building and buying of houses, and also on the rehabilitation and remodeling of old houses. He also has written widely on family money management and financial matters.

He is a college-trained engineer with a B.S. degree in mechanical engineering. He has worked in the housing construction field as an engineer, and has made studies on various aspects of the housing field for large corporations and financial institutions.

Mr. Watkins' articles on housing and the building field have appeared in many national magazines, including Harper's, the Saturday Evening Post, Better Homes and Gardens, and the American Home. He has also been an associate editor of Architectural Forum and House and Home magazines.

He lives in Piermont, N.Y., a suburb of New York City, with his wife, three young children, a middle-aged Welsh terrier, in a 72-year-old, partly rehabilitated, Hudson River victorian house he describes as his "personal housing problem."

Mr. Watkins, we are happy to have you here.

Please proceed in your own way.
Senator SIMPSON. Off the record.
(Discussion off the record.)

STATEMENT OF ARTHUR M. WATKINS, PIERMONT, N.Y., ENGINEER, AND WRITER ON HOUSING AND BUILDING

Mr. WATKINS. I am going very briefly to talk about what will be the impact on housing of uncontrolled population growth. To answer that question, I can say in one sentence, summing up this whole testimony, that the effect on housing will be disastrous. There are several reasons for that. I will give each of the main reasons:

". . . THE HOUSING INDUSTRY, OF ALL THE LARGE INDUSTRIES IN THE COUNTRY TODAY, IS NOTABLY STAGNANT"

The housing situation today is bad enough and a lot worse than many of us recognize or realize. That's because the cost of housing today has now reached such a high level that about 50 percent of all the families in the country simply can't afford the minimal, low priced, privately built housing or apartment units that are available today or that can be built by private industry.

An interesting sidelight right here is that the housing industry, of all the large industries in the country today, is notably stagnant. Virtually every other industry in the country today is booming. They have been booming since the beginning of the 1960's, and we have all seen it. But housing, of all things, is the one very notable industry where practically no progress and increase in volume, increase in sales and increase in industrial output has existed. It has been building about 1.5 to 1.6 million new housing units a year for the last 4 or 5 years. It has been stagnating at that level.

Why is this? The answer to that question will shed light on why the housing situation is so bad today.

50 PERCENT OF ALL FAMILIES CANNOT AFFORD THE LOWEST PRICED HOUSE

I said that about 50 percent of all families in the country do not earn enough money to afford the lowest priced house. The median income of the American family in 1964, the last year for which figures are complete, was just about $6,600. Half of all families made more, half made less. On that median income level, a family can afford to buy a $14,000 house. But there are very few $14,000 houses being built today. About 35 percent of all families earn less than $5,000 a year, and 18 percent less than $3,000. The basic reason for the high cost of housing is the fact that construction costs have long been climbing much faster than the average year-to-year rise in all other items in the Government's cost-of-living index.

HOUSING: 30 PERCENT OF THE FAMILY BUDGET

Today, housing takes the biggest single bite out of the typical American family budget. It accounts for an average of 30 percent of the typical American family's living budget. This may be surprising particularly because housing has now surpassed food as the biggest cost item in the average American family budget.

FOOD: 25 PERCENT OF FAMILY BUDGET

Food was formerly No. 1, but now takes about 25 percent of the family budget. These figures are from the Bureau of the Census.

When you think about the fact that housing accounts for 30 percent of the typical American family's budget, you must think also of the people who are untypical. In a lot of cases, housing accounts for 40 percent or more of their budgets, which leaves that much less money for some other things.

TRANSPORTATION: 15 PERCENT OF FAMILY BUDGET

The third or main family budget cost item is transportation which accounts for 15 percent. I mention that because today, to buy housing that you can afford, many families have to move quite a distance away from their place of work and away from the central city where they commute to. This, in many cases requires the purchase of a car or two cars. So here you have in many cases an additional family expense that is a direct result of the rising cost of housing and one which can be considered partly as an additional housing cost.

I have been talking mostly about housing in general and housing for middle-income groups. I have not mentioned the fact that something like 10 million families are so poor, or do not earn enough, that they are living in what is politely called substandard housing, but which, in some cases, is really the term for slums.

"THINGS ARE GOING TO GET WORSE RATHER THAN BETTER . . ."

Things are going to get worse rather than better, I am afraid, and I hope fervently that I am wrong in this case. But as the population increases, I think that within 10 to 15 years or so, as many as 75 percent of the families in the country will be priced out of the market for the cheapest, lowest priced new housing that can be put up by private industry. That is likely to be the result of the cost of housing continually rising faster than the cost of living, and rising continually faster than the future increase in family incomes.

RISE IN HOUSING COST IS DOUBLE THAT OF LIVING IN 1965

For example, in 1965, last year, the cost of housing construction rose by about 4 percent, or just about twice the average rise in the Government's cost of living index, which was up 1.9 percent. Here again is an illustration of the cost of housing rising steadily faster than the average cost of other things in the family budget.

I mentioned that half the families in the Nation could not afford to pay more than $14,000 for a new house. That is the top-price house that can be bought by people earning up to $6,600 a year. What about apartments? The same 50 percent of the families in the country who earn $6,600 a year or less can afford to pay no more than $110 a month in rent for an apartment. This is based on an income-to-rent ratio of 5 to 1. Where, I ask, can people find adequate apartments for that kind of money?

Senator SIMPSON. May I interrupt you to ask—have you determined the amount of money per month that it would take in installment payments to take care of the $14,000-type home?

Mr. WATKINS. Not directly, because this will vary. It will vary because in addition to mortgage payments, you also have your local real estate taxes which can range anywhere from $150 to $250 a year, to $400 or $500 a year depending on where you live, in what suburb, and what the local school situation is, for example. I pay about $225 a year roughly for my school taxes and people a few miles away, for the same price and type of house, pay $350. I happen to be fortunate in that one respect. I also know other people who have to pay $600 or $700 a year just in school taxes.

Incidentally, when I said that housing accounts for roughly just about 30 percent of the average family budget, that includes all housing expenses. It includes utilities, upkeep and maintenance which is increasing, as well as mortgage payments and real estate taxes.

CAN WE ". . . LICK THE HIGH-COST PROBLEM IN HOUSING"?

Why does housing cost so much? This question should be asked because we want to know if we will be able to lick the high-cost problem in housing. Will there be ways to lower the cost of housing so more people can afford their own housing and so Government will not have to provide housing for many?

The basic cause, putting it in simple terms, is that the average worker in the United States today making $2.50 an hour simply can't afford to pay for a house put up by $5 an hour labor. That is put in oversimplified terms, but I think it is a good, appropriate, simple statement of the problem. There are half a dozen different problems in construction which have to be solved to get down the cost of housing. Even if a direct frontal attack is made on them, such as crash programs, the time lag between the start of such programs and eventual results in reducing the cost of housing would be such that it would take 10, or 15, or perhaps 20 years, which does not make the picture look any brighter.

One of the biggest problems is stalled productivity in the chaotic, old-fashioned, handcraft housing industry. Housing is still built largely by hand, unlike cars and unlike refrigerators.

LACK OF TECHNOLOGY IN HOUSING INDUSTRY BOOSTS COSTS

Back in 1935 or so, for example, we know that you could get a very good, adequate, seven- or eight-room house for about $5,000 more or less, in many parts of the country. Back in that time, a new refrigerator cost about $850 because refrigerators are made quicker and far more efficiently than houses; you can today buy a new refrigerator for about one-third to one-half that original cost. But the cost of housing has about tripled since then. This shows the effect of the lack of technology in housing construction. While housing costs are going up all the time, the appliance makers, the automobile makers, and everybody else, through mass production techniques and through technological improvements have managed to keep their prices from rising half as fast as housing costs; and in some cases, have made remarkable reduction in the cost of their products. In housing, though, this is not true.

BUILDING CODES, ZONING RULES NEED REVISION

One of the big reasons price reductions have not been attained—that is, lower prices for housing—is because of our very wildly chaotic and obsolete system of building codes and zoning rules. That is one of the biggest obstacles to lower priced housing. And it is going to take many years, I am afraid, before something real can be accomplished in finding a solution to that problem.

There are other reasons for the high cost of housing. For example, take the cost of the land for a $14,000 house. The land, or the lot that the house is on, will account for about 17 percent of the selling price of the house, according to FHA figures. That is about $2,400 of that $14,000 house selling price. As we all know, the cost of land in the suburbs and in the main metropolitan areas of the city, where much of the housing is needed and built, has been skyrocketing. The same land used to cost a few hundred dollars an acre 10 to 15 years ago but now costs thousands of dollars an acre.

There are other points in the cost of housing that are in my statement.

I will just go over them very fast; the rising cost of real estate taxes, which sharply boosts the cost of homeownership; the cost of financing; the cost and all the expenses, snarls, and complications involved in buying and selling a house. So when you buy a house, you must wait sometimes 3 or 4 weeks or 2 months before all the redtape is unraveled and you acquire ownership of that house.

HOUSING FOR UNBORN MILLIONS WILL BE AN ENORMOUS PROBLEM

What about the future? If things are so bad now, how will we be able to keep up with the housing demand in the future? We are building roughly one and a half million new houses a year these days. In 1970, the population will be about 208 million—these are conservative figures—and we will need about 2 million houses a year. I am afraid we are not going to get them. In 1985, the population will be about 260 million, according to projections, and we will need about 2.5 million houses a year. In 2000, the population on conservative projection will be about 323 million and we will need approximately 3.2 million new houses a year. Providing enough new housing is going to be an enormous problem, not to mention providing enough low-cost housing.

In the future more and more people will very likely be priced out of the market for new housing and also out of the market for rehabilitated and used housing. That's because the price of existing housing is determined largely by new house prices. And that's why about 75 percent of the families in the country in the next decade or so will be unable to afford housing. How will they get the housing they will urgently need? How are your children and mine going to be able to afford housing?

Actually there are three ways to solve the problem if it can be licked.

SOLUTIONS: 1. 35-YEAR PROGRAM OF $100 BILLION IN GOVERNMENT SUBSIDIES

One, the Government can step in and provide subsidies of one kind or another, via direct appropriations, to pay the difference between

what people can afford to spend for new housing and the price of the minimal new housing that they need.

I have estimated very conservatively that if the Government does this and pays the bill for the new housing needed in this country that people cannot afford in the next 35 years or so, it will cost a minimum of $100 billion. I do not think, however, the Government is likely to appropriate that kind of money. This is a little less than $3 billion a year on the average, for such things as public housing and subsidized housing, the estimated cost of all the new housing that people will need but cannot afford to buy for themselves.

2. TECHNOLOGICAL IMPROVEMENTS TO CUT COSTS

The second alternative is cutting the price of housing by technological improvements as Henry Ford did.

Back in 1913, Mr. Ford put out a model T that sold for $850. Then he started his first primitive assembly line for putting cars together. This, of course, was revolutionary. It was the industrial revolution coming to Detroit. Within 3 years, the cost of the model T was brought down to $360. That is what can be done by technology. It is what happened in refrigerators. It is what should happen to the cost of building new housing.

3. DOING SOMETHING ABOUT POPULATION GROWTH

Can it be done? I hope so, but I do not think it will be done, at least in the foreseeable future, because of all the problems involved. So that leaves Government appropriations to the tune of $100 billion, at least, in the next 35 years if we are to provide all the housing that will be needed, since reducing house prices by means of technological advances is unlikely. I hope again that I am wrong on this. A third alternative to help the situation is doing something about population growth. It is plain that we face a growing housing problem. That problem puts additional and urgent emphasis, I think, on the passage of S. 1676, the bill sponsored by Senator Gruening and other Senators to coordinate and disseminate birth control information.

Senator GRUENING. Does that conclude your statement?

Mr. WATKINS. That concludes my testimony. I tried to make it briefer than my statement. There are other facts in my statement.

Senator GRUENING. Thank you very much, Mr. Watkins. I think you have painted a rather depressing picture of the future of housing. This is like many of the other complications resulting from this unchecked population growth.

I will direct at this time that, following your oral testimony, your prepared statement be made a permanent part of this hearing record.

I will also direct that there be placed in the hearing record an article which appeared in the New York Times on Sunday, March 27, describing a report made by the community renewal program of housing and attendant human problems in New York City. The article states that the picture drawn in the report is grim, a word which is none too strong to describe a situation where 22 percent of that city's households live in housing that is too cramped, too expensive, or both. We need, Mr. Watkins, to follow your suggestion that we think more about where our populations will live—and how they will

live. If the situation in our Nation's largest city is grim now, what will it be like when our numbers have doubled?

You will note that yesterday the House of Representatives took a step in the direction that you indicate might be necessary; in other words, in the subsidization of housing, having the Government pay part of the cost. How this can continue is very much of a question. Once started, there is no knowing to what extent this will go, whether the Nation or the Treasury can afford it.

Senator Simpson?

"WHAT ABOUT PREFABRICATED HOUSES?"

Senator SIMPSON. One thing that disturbs me is your statement with respect to technological advances. What about prefabricated houses? I notice a lot of those are going up on university campuses. Does that relieve the situation some?

Mr. WATKINS. That relieves the situation some, but the advances and the progress in prefab houses are very small today compared to what can and should be done. A so-called prefab house today is about 10 percent or so more or less really and truly prefabricated. A few things here and there are put together in a mill or factory and shipped to the site. But the plumbing, the electrical wiring, the roofing, still goes up piece by piece and shingle by shingle, in most cases. It is not a genuine, by-and-large prefabricated house in most cases.

Senator SIMPSON. It seems the activity formerly was very much in favor of that and it has decreased in late years in the prefabrication of building.

Mr. WATKINS. Yes, it has decreased. They have run into big obstacles. For example, out in California, a very imaginative company decided to build a completely prefabricated bathroom, all built in their own factory and they could turn it out for one-half or one-third of the price of a bathroom built by hand on the construction site. The unions and a few other groups out there raised so much of a fuss that the company decided they were not going to fight it, and they just dropped their bathroom.

Senator SIMPSON. Your statement is good and I know it will all be published in the hearing record. Then think of the chaos you visualize here as compared to the great country, for instance, to the south of us, Brazil, where the population growth is three times that of ours, and, in many instances, they live under most abject circumstances.

Mr. WATKINS. Yes, and I forgot to make the point in my testimony that I was confining my remarks to one of the parts of the world where the housing situation is relatively good. If it is this bad in our country, unfortunately, you can imagine how much worse it is in some other parts of the country, in some of the other parts of the world.

Senator GRUENING. Thank you very much, Mr. Watkins. We appreciate your coming and your very valuable testimony.

Mr. WATKINS. Thank you.

(Mr. Watkins' prepared testimony and the article from the New York Times previously referred to follow:)

EXHIBIT 95

PREPARED STATEMENT OF ARTHUR M. WATKINS

NEW PRESSURES ON HOUSING PUT SPECIAL EMPHASIS ON A POPULATION SLOWDOWN

We are facing a mounting housing crisis in the United States today because, like a huge over-burdened workhorse, the big sprawling and anachronistic housing construction industry is today already creaking at the joints and operating at dismally low efficiency.

More than 10 million American families today, or roughly 20 percent of our population, live in substandard housing (which in many cases is a polite term for slums). Yet despite a large pent-up present-day demand for more and better housing of all kinds, the building industry is nonetheless unable and incapable of providing adequate housing at prices people can afford for about half of the country's families.

Unfortunately, the future looks even darker, as the year-to-year increase in construction costs continues to outdistance the financial ability of more and more families to buy houses. If the Government must provide minimal housing for the needy and the underprivileged, including many members of minority groups, the cost for such Government sponsored subsidized housing will between now and the year 2000 exceed *$100 billion dollars*, a staggering price to pay.

INCREASING COST OF NEW HOUSES

One of the basic problems is the high and continually rising cost of building new housing for sale or rent. "Business Week" magazine said a few months ago, "The single-family detached home . . . is being priced out of the mass market." And the cost of new apartment houses has risen to the point where rents must be pegged at levels too high for many middle income people to pay, and absolutely out of reach for most low income families and minority groups.

In 1964, the most recent year for which we have complete figures, the median income for all U.S. families was approximately $6,600 a year. Half of all families earned more; half less. About 35 percent of all families earned less than $5,000 a year, 18 percent less than $3,000.

Studies by the F.H.A. show that a family earning up to $6,600 a year cannot afford to buy and maintain a house costing more than $14,000. That's the top price house, in other words, that roughly half of our population can afford.

This is not to say, incidentally, that people who cannot afford houses do not buy houses. Many do, human nature and human need being what it is. Thus many families spend more for houses than they probably should. Then in order to keep up the payments, pay their property taxes, and manage other home ownership costs, they find themselves over their head in debt. They must skimp on other family expenses or else lose their houses, which brings on additional personal and social ills. Not all manage, however, which is a reason for the alarming rise in home foreclosures and personal bankruptcies.

In addition, a $14,000 house is hard to find these days, especially in large metropolitan areas such as New York, Cleveland, and Chicago, where even in the distant suburbs you will seldom see new houses for sale at prices less than $15,000 or $17,500. That's the lowest price, minimal house that can be built in a good many parts of the country today.

To be sure, new houses are being built and sold today for prices as low as $10,000 to $12,000. By and large these are the smallest, minimal houses, and found chiefly in the South, and in rural areas where building costs are lowest.

In 1964 half of all new single family houses sold for more than $18,900! That's up 5 percent from the median price of $18,000 for all new houses built the year before. Some 25 percent of all new houses built in 1964 were priced between $15,000 and $18,900. Only 25 percent were priced under $15,000 (which of course is the critical area where the most urgent need exists for new housing).

APARTMENTS

As for apartments, the 50 percent of the population that earned less than $6,600 in 1964 can afford to pay no more than $110 a month for an apartment (assuming an income-to-rent ratio of 5-to-1). (Where, one could ask, can a

family find a decent apartment in, say, the Washington, D.C. area today for $110 a month?)

About 18 percent of all families cannot afford to buy a house costing more than $7,500, or pay more than $50 a month for an apartment.

WHY NEW HOUSING COSTS SO MUCH

This is particularly important to know if we are to find solutions for our future housing needs and provide for a growing, if not exploding, population.

Going deeper, here are the major reasons for high cost housing according to most housing experts (with many of the same reasons also forcing up the cost of schools, hospitals, office buildings, and virtually all other new construction):

1. *Stalled productivity in the building field*, with most new construction still being built, by and large, by the same slow motion, horse-and-buggy handcraft methods used 100 years ago. Walls, floors, and framing are still hammered together by hand, nail by nail. Bricks are still laid up by hand, one by one. Technology has made few breakthroughs into the building field. More accurately certain vested interest groups have staunchly kept the Industrial Revolution out of building.
2. *Our wildly chaotic system of old-fashioned and incredibly burdensome building codes and obsolete building regulations.* This more than anything else has held back the introduction of real technological innovations and construction economies for building.
3. *The sharply rising cost of land for new houses, particularly in metropolitan areas and suburbs*, plus the staggering cost of providing new water and sewage systems for new housing.
4. *The incredible complications, expense, and legal snarls involved with buying and financing new and old houses.* This has to do with such things as transferring home ownership and checking house titles and deeds, as well as obtaining mortgages. If houses could be bought and financed as easily as are new or used cars it would be a major step forward.
5. *The rising cost bite taken for local real estate taxes.*
6. *And the high cost and special problems of remodeling and rehabilitating existing housing.*

HOUSING: THE BIGGEST SINGLE ITEM IN THE FAMILY BUDGET

New information shows that the typical American family now spends more on its housing than on any other single item in the family budget.

Figures compiled recently from Bureau of Census data show, to the surprise of many, that the cost of housing and household operation now accounts for nearly 30 percent of the living budget of the typical American family. The actual figure is 29.2 percent. That includes the month-to-month expenses for such things as utility bills and housing maintenance, as well as mortgage payments and other direct housing expenses.

Feeding the family (food) formerly accounted for the biggest cost bite of the typical family's budget, but food is now in second place at 25 percent of family expenditures. At the start of the 1950's it was 30 percent. (Other family budget items are transportation which takes up to 15 percent, a considerable jump over a decade ago; 8 to 9 percent for medical and personal expenses; about 10 percent for clothing and shoes; and such things as tobacco and alcohol, recreation, reading, and education).

WHAT ABOUT FUTURE HOUSING NEEDS?

Unfortunately the situation is likely to get worse before it gets better. Though the industry is building between 1.5 to 1.6 million new houses and apartments a year nowadays, it's estimated that by 1970 we will need two million new housing units a year. By that year the U.S. population will be around 208 million.

By 1985 the population will climb to around 260 million, according to Bureau of Census projections, and we will need around 2.5 million new houses a year, more or less. And by the year 2000 Census projects the population increase to about 323 million—others say as many as 380 million, or twice the present population, and we will need around 3.2 million new houses and apartments a year.

Being absolutely realistic it is highly unlikely that we will be able to produce anywhere near that many new houses in the next 35 years. More and more, and particularly as our population grows, the growing need and rising demand for housing is likely to outdistance the ability of the building industry to provide enough houses at prices people can afford.

More and more people are going to be left in the cold, being stuck and crowded in cramped or rundown, or deteriorated, or substandard housing, and very likely in spreading slums. (Though I fervently hope that this statement turns out untrue.) It is unlikely that we can provide enough reasonably priced housing in the future to provide for our growing population chiefly because the cost of building new houses is continually climbing so fast.

I have noted that housing costs are so high now that roughly half of the population today is priced out of the market for new housing. Within a decade or so as many as 75 percent of our people probably will be unable to pay the going price for privately built housing.

That's because the construction costs have been rising faster than the cost of living and faster than consumer incomes. In the last 75 years (1890 to 1965) construction costs in the U.S. have risen by more than 525 percent, or over twice the average rise of nearly 250 percent in all other consumer prices during the same period. In short, housing inflation has been running over double our ordinary year-to-year inflation. Just last year (1965) the consumer price index rose 1.9 percent, while the cost of new housing rose over twice as much (about 4 percent). Plainly, as construction costs climb faster than other prices, more and more families are priced out of the housing market.

WHAT CAN BE DONE?

What can be done about it? How will we provide enough housing for our growing population? One way is for the Federal Government to pick up the slack by means of outright subsidies, grants and loans. That will mean more public housing or rent subsidies, plus more urban renewal, among other things, to house those who can't afford their own housing. In the next 35 years this is what would cost us upwards of 100 billion dollars in Government appropriations! That's a conservative figure, by the way. It's an average outlay of nearly $3 billion a year by the Government between now and 2000.

Another alternative would be strong-medicine measures to reduce the cost of housing. This means major technological breakthroughs in construction which ultimately might reduce house costs by as much as 30 to perhaps 40 percent, perhaps more. Technologically, it's a distinct possibility. But the political obstacles blocking such breakthroughs coupled with the stubborn resistance to innovation in the building field (by contractors, unions, building supplies, certain manufacturers, and other local vested interest groups in the sprawling construction industry) are formidable indeed. Even if a major assault on the high cost of housing was launched today, the time lag between initiation and realization would probably run 10 to 20 years before real progress was made in reducing the cost of construction.

There is one other hope—population control. If the population continues to increase as it is doing now we will almost surely be confronted with an unprecedented housing crisis. That's because there's small probability of the large Government-subsidies appropriated for housing, and small probability of housing price cuts being affected. Such a housing crisis will, of course, hit hardest at low income families, at the underprivileged, the impoverished, and our nonwhite minority population (which is increasing fastest of all and faces the grimmest future). And it will also hit more and more at middle income families.

Conclusion: Because of the growing housing crisis in the U.S. and also in other parts of the world, there is an increasingly urgent and special need for ways to curb population growth. This puts additional and special emphasis on the passage of S. 1676, the bill sponsored by Senator Gruening and other senators to coordinate and disseminate birth control information upon request.

EXHIBIT 96

500,000 FAMILIES FOUND ILL-HOUSED

(By Stephen V. Roberts, the New York Times, Sunday, March 27, 1966)

Almost 500,000 families—22 per cent of the city's households—live in housing that is too cramped, too expensive, or both. Four hundred thousand of them are in the low-income category, earning less than $6,000 a year.

This grim picture was drawn last week in a report of the Community Renewal Program, a continuing study of housing and attendant human problems, financed by Federal and city funds.

In the opinion of housing experts, the report, by focusing on the needs of people rather than on the condition of buildings, represents a new approach to planning renewal programs.

The report proposes new criteria for choosing sites and new kinds of housing, and seeks to preserve old buildings that are still useful.

"We have added social criteria to the existing economic criteria," Morton L. Isler, director of the program, said.

LARGE APARTMENTS NEEDED

For example, Mr. Isler explained that the study showed that the greatest need was for large, inexpensive apartments. Therefore, he argued, the city should consider improving aging buildings that have more space than new buildings usually contain.

In another instance, he said, the city may decide to build a school on a site containing middle-income rather than low-income housing, since the need for the latter is so pressing.

The 72-page report contains much of the technical information that underlays the CRP's comprehensive plan for New York's "renewal strategy" published last December after almost five years of work.

It reinforces the basic contention of that plan that slums are spreading and "immediate action" must be taken to meet the housing needs of the poor.

To calculate the deficiencies in city housing the CRP staff measured the space and financial requirements of families in 12 income groups and set them against available units.

FAMILY SIZE IS BIG FACTOR

For example, 88 per cent of the families with five or more members that earn less than $3,000 a year cannot find adequate accommodations. In the single largest group, one or two persons earning less than $3,000, it was found that 179,000 families, or 40 per cent, cannot find good housing.

Among families earning more than $6,000 only those with five or more persons have significant problems finding enough space at a price they can afford.

The CRP will continue to issue occasional reports to serve as background material for the planning of renewal programs. The next report will study changing labor conditions in New York and contain a profile of workers in each major industry.

Another report now being prepared will assess the need for recreational facilities and include an inventory of all public and private park land in the city.

BIOGRAPHIC STATEMENT: KERMIT KRANTZ

Senator GRUENING. The next witness will be Dr. Kermit Edward Krantz, chairman of the department of gynecology and obstetrics and professor of anatomy at the University of Kansas School of Medicine in Kansas City.

He was born in Oak Park, Ill., June 4, 1923, and received his B.S., B.M., M.S., and M.D. degrees from Northwestern University.

He interned and had a residency at the New York Lying-In Hospital, and in 1950–51 was fellow and resident in obstetrics and gynecology at the University of Vermont College of Medicine in Burlington. From 1951 to 1955 he served on the faculty of the Vermont College of Medicine, first as instructor and then as assistant professor. From 1955 to 1959 he was assistant professor of obstetrics and gynecology at the University of Arkansas Medical School in Little Rock. From 1957 to 1962 he was a Markle scholar in medical science. Since 1959 he has held his present post at the University of Kansas, where he is also professor of anatomy.

Dr. Krantz was a member of the Clinical Research Panel for Clinical Research Postdoctoral and Special Fellowships of the Division of General Medical Sciences, National Institutes of Health. He is a consultant, cancer control program, U.S. Public Health Service; program consultant, NIH Reproductive Biology, National Institute of Child Health and Human Development; and National Civilian Consultant, Gynecology and Obstetrics, for the Surgeon General of the United States Air Force.

I find it difficult to see how you can do all these things at the same time. It is quite an achievement.

He was certified by the American Board of Obstetrics and Gynecology in 1955 and 2 years later became a member of the American College of Surgeons. He is a founding fellow of the American College of Obstetricians and Gynecologists and is a member of many national and State medical societies. In reading his curriculum vitae, I learned that he is a member of the Endocrine Society. His awards include the 1955 Nu Sigma Nu Award for "outstanding professor in the college of medicine for the year 1955."

Dr. Krantz has written many articles.

A specialist in anatomy and gynecology, he was a contributor to the 1965 Life magazine four-part series entitled "On the Frontiers of Medicine." I shall direct that part 1 of the series entitled "Control of Life" be placed at the conclusion of your testimony as a part of this hearing record.

STATEMENT OF DR. KERMIT E. KRANTZ, KANSAS CITY, KANS., PROFESSOR AND CHAIRMAN OF OBSTETRICS AND GYNECOLOGY AND PROFESSOR OF ANATOMY, UNIVERSITY OF KANSAS MEDICAL CENTER

Dr. KRANTZ. Thank you, Mr. Chairman.

I would like to begin my testimony by quoting the President of the United States when he said:

> Let us in all our lands—including this land—face forthrightly the multiplying problems of our multiplying populations and seek answers to this most profound challenge to the future of all the world. Let us act on the fact that less than $5 invested in population control is worth $100 invested in economic growth.

It has suddenly come to the recognition of our society that the indiscriminate growth of the world's population in excess of the world's economic means of support is rapidly leading man on the greatest collision course for survival that he has faced in his history.

Man has spent his existence tampering with death and now because of his successes must face the problem and the challenge of tampering with life.

On a nation devoted to the proposition of the dignity of common man with its vested rights of self-determination, with its concomitant economic resources heretofore unknown, has been placed the awesome burden of affording leadership to the solution of these problems, lest there be no survival of any society.

There is little question. The demographers and calculators predict a doubling of the 3 billion population within the next 30 years.

MAN ". . . IS LOSING CONTROL OF HIS EXISTENCE"

Man in his inimical demands for immortality through reduction of death rates by control of disease has defied the balance of his "biome" to the point that he is losing control of his existence.

Today 2.4 billion of the world's 3.3 billion people live in the underdeveloped areas of Asia, Latin America, and Africa; 75 percent of these people have an annual income of less than $100; 94 percent have an income of less than $300. The world's food production is measured at a rate behind the world population growth.

Lester Brown, staff economist, U.S. Department of Agriculture, states:

> Food output in the less developed regions (Asia, Africa, and Latin America) dropped sharply during World War II, but trended steadily upward during the 1950's, in most cases reaching or closely approximating broad world levels. In the 1960's, however, output per person in these regions has shown a disturbing tendency to trend downward. Before the war, the less developed regions were exporting 11 million tons of grain per year to the developed countries. After the war, this flow was reversed. In the 1960's the reverse flow has increased further, reaching 21 million tons in 1961 and according to preliminary estimates, 25 million tons in 1964.

We have evidence of it this past week with Madam Gandhi here in the United States asking for help for their famine.

TWO ALTERNATIVES: PREVENTION OR DESTRUCTION

To meet this need, man has only two alternatives—to control his population by a preventive means or to revert to a more destructive means of population control—through pestilence, disease, malnutrition or genocide.

Senator GRUENING. You might add war to that last.

Dr. KRANTZ. Genocide is a nice way of saying war.

The rate of economic growth and per capita output of the world progressively diminished from 2.5 percent between 1950 to 1955, to that of 1.8 percent between 1955 and 1960. If there were a reduction in the rate of population growth in the world totaling 50 percent in 30 years, there would be approximately 40 percent added to the per capita income that could be achieved in that time—according to the National Academy of Sciences.

KRANTZ SPEAKS OF ". . . THE PROSPECT OF PROGRESSIVE DEGRADATION OF CONSTITUTED SOCIETY . . ."

It is almost impossible to conceive that modern medicine and sanitation have changed the world so greatly that we must now openly admit that unless a balanced population-to-resources is achieved with a minimum of delay, the prospect of progressive degradation of constituted society, culminating in a dark age of human misery, and famine shall become the inevitable for mankind.

THE PHILIPPINES DOUBLED POPULATION IN 20 YEARS

The increase in population rate of the world has demonstrated such. The Philippines has doubled its population since the end of World War II, with an annual increase of population of 3.2 percent, making it one of the fastest growing nations in the world. Brazil with

a 3 percent, China with a 2 percent and an excess of 690 million people is sufficient alone to cause anxiety.

Senator SIMPSON. Doctor, just for the record, the Brazilian Government claims that in Brazil it is 4.1 percent. This figure of yours is 3.

Dr. KRANTZ. This is the latest figure I could get from the Planned Parenthood and World Population Council.

Senator SIMPSON. As of when?

Dr. KRANTZ. As of 1965. But even that is awesome.

To digress for a moment, the United States with a population in 1964 of 192 million people had a birth rate of 1.6 percent or 21.6 per thousand, or approximately 4 million per year equated against China with 690 million people—a pregnancy rate of approximately 3 million per month and an exact birth rate we do not know; India and Pakistan with a population of over 570 million, and a birth rate of 2.3 percent, have a population growth rate of approximately 1½ million per month. It takes little arithmetic to recognize how tragic the picture has come to be.

To look at South America, we cannot ignore the statement of Dr. Binay R. Sen, Director General of the U.N. Food and Agriculture Organization, who has shown that the population in Latin America has increased 11½ percent in the past 5 years, with a food production increase of only 6.5 percent.

"... THE NEXT 30 YEARS MAY ... BE THE MOST CRITICAL IN ALL MAN'S EXISTENCE"

To emphasize again, the next 30 years may turn out to be the most critical in all man's existence. If giant steps are not made to stabilize the population growth and to increase productivity, man may suffer disasters of unprecedented magnitude.

Many nations of the world are aware of the magnitude of this problem and are attempting to bring it under control. Employing the means available today in Taiwan, selected districts carried out conception control with a resultant 60 percent birth decline in those areas. Korean programs resulted in a 20-percent decline in population in the test areas. Singapore's birth control program resulted in a 12-percent decline in the birth rate. Everyone is aware of the tremendous strides which Japan has made in cutting its birth rate in half in little more than a decade.

Previous individuals who have testified have made clear the tragic picture on the international scene, and in our naiveté let us not forget that the United States itself has not been free of this problem.

The birth rate in the United States is 21.6 per thousand of population with a death rate of 9.6, affording an increase in growth of 1.6 percent. At the rate of growth at the present time, there will be in excess of 350 million American people by the turn of the century—that in a nation which prides itself on affording an equal opportunity for all men to achieve a status of productivity—for failing to recognize the differential that has been placed on the fertility of individuals according to their socioeconomic status. A nation of public schools to afford the necessary working tools for a productive place in society has not made available to the economically deprived the opportunity to limit the family in order to improve their socioeconomic status.

The estimated number of children born or planned in 1960–63 was 3.2 with a figure of 5.4 in the lower socioeconomic bracket.

COST OF THE UNWANTED ". . . IS BEYOND ANY MONETARY CONSIDERATION"

One may discuss the economics of the problem at length. These are readily available for the record. The costs of education are staggering; the costs for housing are prohibitive; the costs for crime are rising precipitously. The cost in human life for the child that is born in an unwanted home is beyond any monetary consideration.

With this tremendous rise in population we have had some changes that have come with it. These should be brought out here today to point out the awesome problem that faces the society that has not adequately wrestled with an indiscriminate birth rate and its concomitant problems.

To narrow this down to a local situation, in 1960 the Bureau of Census report shows the teenage population in the United States to be 20 million, with an increase of over one-third by 1970. This group will comprise an increasing segment of the reproductive population, and with it is coming a challenge in population control, and the changing patterns of the society.

In 1959 the Bureau of the Census reported 37.9 percent of the brides were girls under the age of 20, and that 4.2 percent were in the age group of 14 to 17. It has been estimated that one-third to one-half of these teenage marriages are coupled with premarital pregnancies, and this is conservative. This is of real significance if we are to consider the early childbearing years, and the opportunities for these offspring.

According to Semmens, in the U.S. Navy in 1960 to 1964—a 4-year period—125,000 deliveries occurred in 22 Naval hospitals, with 24,022 or 19.2 percent being mothers under the age of 20.

ILLEGITIMATE BIRTHRATE ON INCREASE

The illegitimate births in the United States in 1940 were 89,500, or a rate of 7.1 per thousand unmarried women. In 1950 this rose to 141,600 births or a rate of 14.1 per thousand unmarried women. In 1960 it rose to 224,300, or a rate of 21.8. The last year for which figures are available, 1963, there were 259,400 illegitimate births or a rate of 22.5 per thousand unwed women, a percentage of illegitimacy of 6.5 percent. The total birth figure for 1963 shows 3,965,372. The birth rate in the United States in women in the age group of 15 to 19 was 54.1 per thousand in 1940, rising to a height of 89.1 in 1960.

Senator GRUENING. How do you account for this great increase in illegitimacy? What would be your explanation of that?

Dr. KRANTZ. The changing patterns of our society, as I will point out later. It is a part of the changing pattern as a result of communication and transportation; stress that is occurring in the youngster, the inconsistencies of the adults in our society, condoning one aspect and preaching morality on another.

Senator GRUENING. Do you think that we are seeing changing standards of morality?

Dr. KRANTZ. In part; yes.

Senator GRUENING. It is not a very encouraging situation, is it?

Dr. KRANTZ. But it is like the old Vermont adage; we must modify or drop out.

ABORTIONS ARE "APPROXIMATELY 25 PERCENT OF THE BIRTH RATE"

The problem of abortion is difficult to assess because of the statutes upon the lawbooks making accurate figures rather difficult to obtain. However, the four major independent studies made in the last quarter of a century agree that there are more than 1 million criminal abortions performed annually in the United States. This would be approximately 25 percent of the birth rate.

ABORTION: A PROBLEM FOR THE MARRIED AS WELL AS THE UNMARRIED

In the 1930's and 1940's the medical texts attributed 20 to 30 percent of all maternal mortality to abortion. Recently, Dr. Edwin Gold, professor of obstetrics and gynecology at New York Medical College stated on November 13, 1965, before the Department of Graduate Medical Education of the State University of New York at Buffalo that in 1964 in New York City 46.1 percent of the maternal deaths that occurred resulted from criminal abortions. Of these, and this I think is significant, 54.7 percent were married housewives with a median age of 25.5 years, and an average of 3.2 children. It is not the problem of the single girl alone, but of the married woman who economically finds herself unable to bear another child and maintain the equanimity of a stable family unit.

ABORTION: A PROBLEM IN RURAL AND URBAN AREAS

Perhaps it may be questioned that the metropolitan areas of the large city megalopolis is the only place for such problems. Let me point out that in the rural State of Kansas with a relatively stable population of 2,197,000 in 1965, the percentage of illegitimate births in one of its larger counties rose from 3 percent in 1963 to 9.5 percent in 1965. The State in 1962, with a birth rate of 48,700 had an illegitimate birth rate of 3.1 percent. In 1965, with a birth rate of 37,727, 10,000 less than in 1962, it had a rate of 5.7 percent of illegitimacy.

It must be pointed out at this time that in the Greater Kansas City area the juvenile court referrals for probation or detention have been increasing at the rate of 6.25 percent per year. It is estimated that the growth rate of delinquents will exceed 5,200 by the year of 1975. Eighty percent of the juveniles come from the economically and/or socially deprived.

The national FBI statistics have demonstrated that juveniles account for 61 percent of all larceny, 49 percent of all robberies, 44 percent of the burglaries, 41 percent of the sex offenses, 39 percent of the assault cases, 37 percent of the murders and 26 percent of the auto thefts. The latter most probably is due to their inability because of age to drive a car.

The Kansas City, Mo., Police Department records for 1962 show that 57 percent of these offenses were committed by persons 20 years of age or under.

With this background, I should like to propose possible approaches to the population problem, predicated upon my background as an academician in the field of reproduction.

". . . THE PHYSICIAN AND EDUCATOR . . . CANNOT STAND BEHIND THE CLOAK OR MANTLE OF ACADEMIC LICENSE . . ."

No longer can the physician and educator deny his role in affording responsible leadership and effort in developing solutions to the great social problems of our time. He cannot stand behind the cloak or mantle of academic license for long without becoming cognizant of and related to these problems.

There is no conflict in a moral sense to this problem. There no longer exists a dichotomy between our various religious groups as it pertains to the pressing problem of population growth. It seems altogether incongruous that a nation so well endowed and so grateful for its heritage should deny that this problem exists—no less to be so unpragmatic as to fail to recognize the virtues of prevention over and in lieu of any therapeutic solution to a given problem.

A "DESPERATE MIND" WILL FIND A SOLUTION WHEN "UNWANTEDLY PREGNANT"

It must be clearly said that as long as a woman finds herself unwantedly pregnant, she shall seek a means of solution. Any individual who would deny the preventive process to this unwanted pregnancy cannot but then be an accessory to the destructive means that the desperate mind may take toward a solution. It is obvious that we do not wait until a smallpox epidemic occurs to vaccinate a community. We prevent it in advance by offering acceptable means to all individuals to be vaccinated.

"IS IT NECESSARY THAT WE HAVE THIS CARNAGE OF ABORTION . . ."

Is it necessary that we have this carnage of abortion when means, which though not totally adequate, are available to prevent this disaster? We, as a Christian nation predicated upon the dignity of man, must recognize that every criminal abortion becomes our personal responsibility when we have not afforded the means by which the unwanted pregnancy may be prevented.

Recommendations should be, in part, along the following lines.

FEDERAL FUNDING NECESSARY FOR REPRODUCTION RESEARCH

In the broad sense, Federal funding is necessary in that the problem that exists is one that no longer can be ignored and requires the ultimate of resources of the Nation for its own survival.

1. Research: If one equates the number of individuals involved in full-time research in the field of reproduction in the United States against the efforts in the more sophisticated areas of space science, they are insignificant. I would estimate, after consultation, that there are less than 150 research scientists in the United States involved in research on control of reproduction.

The retired Deputy Surgeon General of the United States, Dr. David Price, recently in Boston stated that less than $500,000 out of

the $5 million appropriated to the National Institutes of Health for child health and human reproduction was employed in the field of fertility control research.

A crash program of establishing centers is not the wisest approach as we can equate it at this time. Rather the reinforcement of the already established programs in existence through categorical grants for faculty support and for physical plants to develop a broader base of information in the fundamentals of reproduction, which, in reality, is in its embryonic stage at the present time.

By categorical, I mean funds that are without any strings tied or no matching.

The University of Kansas Medical Center, through the benevolence of women in the Kansas City area, established in 1958 the first known chair in a medical school—in the world—for research in this field. The department of gynecology and obstetrics in addition is aided by funding from the Ford Foundation and the National Institutes of Health for its 10 full-time members, 8 of whom are primarily involved in reproduction research.

The answer cannot come by setting out with a specific goal in sight. It will only be made available when the fundamentals are known in the field of basic reproduction, upon which may be predicated a simple and economic means of population control through increased funds earmarked as categorical grants for basic research in reproduction by the National Institutes of Health, without matching funds. This will allow the established programs to gain the necessary priority within the medical sciences to move rapidly ahead. There are insufficient funds to match all of the needed programs within the medical schools today.

A MINIMUM OF $15 MILLION EACH YEAR WILL BE NEEDED FOR RESEARCH IN REPRODUCTION

It is estimated that approximately $2.5 million for construction and faculty for each program in the field of reproduction in existence in the United States will be necessary over the next 5 years. There are more than 26 established programs. This means that a minimum amount needed each year would be about $15 million.

FEDERAL AID NEEDED FOR INTERNATIONAL EXCHANGE OF SCHOLARS

Secondly, funds, then, are necessary to establish new programs as they become available. Education and research is a costly process, but absolutely necessary if any breakthrough is to be achieved.

Programs on an exchange basis for the development of scholars from other nations of the world to tap their large reservoirs of such talent must be instituted as a part of these programs. It must then be a requirement that these individuals return to establish such growing numbers—as need be—of centers in the various nations of the world. Funds for the establishment and development of such programs in these nations must be forthcoming as soon as personnel is available to institute the programs. The personnel will have to be trained.

2. Education: Grants in aid to the medical schools in the United States for medical educators to adequately teach the medical students

and paramedical personnel—nurses, social workers, et cetera, on the available means and approaches to population control—should be established. Correlation between the Children's Bureau, the State and local health departments as well as the medical schools should be maintained.

In view of the fact that communication and transportation have so changed our society, and in view of the fact that a child in school is exposed to such tremendous changes, new lines of progressive approaches to health education must be sought. Funds should be made available to establish within the universities and colleges responsible for the education of future teachers programs of sufficient caliber that the potential teacher, through such well-developed programs can be taught the growth and development of the normal child, including all the measures of preventive medicine that are available. This includes the emotional development, sexual education, and preventive medical aspects of variation and recognition of the change in a child from a normal to the abnormal state.

FUNDS NEEDED FOR SERVICES

3. Services: We can no longer deny the services that can afford the means to the socially and economically deprived because the privilege to limit their children is as necessary and significant as adequate housing and sources of food to aid and maintain the family unit. Through the medical centers and State and county welfare agencies, funds without matching restrictions must be made available for the employment of all available means of family planning for all individuals regardless of their status in society.

The model laws in existence in Colorado and Kansas that afford this privilege to these individuals according to their religious convictions have been and are an example of preliminary steps for the solution.

It must be pointed out that in support of these three approaches, groups of individuals must be trained either from the areas of nursing, social work or technicians to work with the means of population control in the local community.

". . . OPEN ACCEPTANCE OF FAMILY PLANNING IN THE UNITED STATES WILL GO FAR TOWARD ESTABLISHING ITS ACCEPTABILITY ABROAD"

On the international scene, open acceptance of family planning in the United States will go far toward establishing its acceptability. I say this from a firsthand opinion, having been in 53 nations of the world within the last 3 years. Funds should be made available for the employment of every possible means of conception control capable of being employed and accepted by any developing nation of the world.

"TOTAL ENERGIES . . . OF THE UNITED STATES GOVERNMENT" ARE REQUIRED ". . . TO AVOID THE TRAGEDY THAT IS ON THE HORIZON"

This problem cannot wait until sophisticated research laboratories may come up with the ultimate answer, but requires the total energies and capability of the U.S. Government to meet it in a forthright approach, if we are going to avoid the tragedy that is on the horizon.

It is inconceivable to me that a nation so richly endowed in the face of such problems would deny they exist—no less to halfheartedly approach the problem.

If this be the case, the words so vividly written by Oliver Goldsmith in "The Deserted Village" may well then be our epitaph: "Ill fares the land, to hast'ning ills a prey, where wealth accumulates, and men decay."

Senator GRUENING. Well, thank you very much, Dr. Krantz, for a very effective, very eloquent, very moving presentation. I wish this could be widely read and we shall make every effort to see that it is and that your recommendations will have the impact that they deserve. This has been a splendid presentation. We are very grateful to you.

Senator Simpson?

Senator SIMPSON. I certainly want to be associated with your remarks in that regard.

As you read that, it came to my mind that seldom is it given to one so young to do so much. You scared the guts out of me and should scare the guts out of people. The war in Vietnam takes priority in this country at this time. It seems to me that here is the next highest priority. Of necessity, we are there; of necessity, we should be here.

Dr. KRANTZ. Yes. I think this is one of our greatest priorities. Having been in the Orient, I can recognize the tremendous problem that exists. I think I may add that the National Institutes of Health should be free to give grants and to train individuals abroad with their present funds and with increased funding.

Senator SIMPSON. May I ask, Doctor, you said you had just come from traveling in some 53 nations, as I understood you.

Dr. KRANTZ. I have been in 53 nations in the last 3 years.

Senator SIMPSON. Was this in connection with your——

Dr. KRANTZ. Part of it was as guest professor in the Philippines in our exchange program, consultant for industry, and in part, for the population program and as a Markle scholar.

Senator SIMPSON. Were you in India?

Dr. KRANTZ. Oh, yes, sir.

Senator SIMPSON. What is the situation there?

INDIA ". . . IS TRAGIC"

Dr. KRANTZ. It is tragic.

As a matter of fact, I can recall one morning coming out on the street in a small little village in India and seeing a woman with four emaciated children, obviously suffering from a disease known as kwashiorkor, where they are totally deprived of protein, and watching the vultures eat one of her children that had died during the night over in the middle of the street. And this is not uncommon.

But let me point out that kwashiorkor does not only exist in the Orient. It exists in the United States. And those of us who work in the area of helping the people, in the socially, economically deprived areas, are cognizant of one thing, that these people do not want to be there. If most of us stop to consider it for one moment, in our own humble heritage, some one of our forefathers began just as humbly, except there was greater opportunity in the sense that there was a wide-open space for him to move to or to enter into agriculture or with a booming, growing nature, he had chances that the youngsters in these communities do not have today.

". . . MERELY INCREASING THE AMOUNT OF FOOD WILL NOT EFFECT ANY REAL SOLUTION"

Senator GRUENING. Well, of course, we are now offering a program of massive food to India. But the question naturally presents itself whether this is any permanent solution, or any solution at all, desirable as it may be from a philanthropic and humane standpoint. But it seems very obvious that what India needs is a massive program of birth control. I am hopeful that in connection with our efforts here and in wider understanding of the nature of this problem, this will be a very essential part of our program of aid. Otherwise, merely increasing the amount of food will not effect any real solution.

Do you agree with that?

"WE WILL GIVE YOU THE FOOD AND . . . MAKE MEANS OF CONCEPTION CONTROL AVAILABLE . . ."

Dr. KRANTZ. I agree, but I would not in any way say that we will not give you food unless you do carry out population control. I would rather say, we will give you the food, and at the same time, make means of conception control available to them. In other words, we want to maintain their dignity.

Senator GRUENING. I agree with you that there should be no element of compulsion or threat or anything of that kind. I think that it should be obvious to people of intelligence, to the new first lady of India, that this is essential. While they have talked about it out there, they really have not done anything in the way of an effective program.

Dr. KRANTZ. Well, Mr. Chairman, I do not think we can expect India to make strides in this direction until the United States itself recognizes that it has a problem and accepts it.

Senator GRUENING. I could not agree with you more and we are hopeful that as a result of these hearings, the United States will recognize that this is an urgent problem and take the appropriate action. This legislation is merely a beginning. It is an entering wedge. It is an approach and it is a very mild one.

"THIS IS A WAR AGAINST DISASTER"

Now, if this legislation is enacted by the Congress, as I hope it will be, and the administration takes it seriously, we will have a start, but only a start. This program is of such magnitude because this problem is of such a wide extent that no one effort will be adequate. We have to attack this with the seriousness with which we attack the problem of war as a major problem. This is a war against disaster.

". . . WE ARE HEADING INTO THE GREATEST COLLISION COURSE FOR SURVIVAL . . ."

I think your phrase here is a very pertinent one. You say that we are heading into the greatest collision course for survival that man has faced in his history. I think that is a very dramatic and effective and correct statement of the situation.

Thank you very much, Dr. Krantz. We very much appreciate your fine testimony.

Senator SIMPSON. Mr. Chairman, I have another meeting I promised to go to. I ask to be excused.

Senator GRUENING. We are sorry to lose you. We are grateful to you for being here and for your very helpful contribution.

I must add that I was impressed by Dr. Krantz's array of activities, honors, and publications when I read his curriculum vitae. I agree with Senator Simpson when he said "seldom is it given to one so young to do so much." I direct that this impressive document be included at this point in the record of this hearing, along with a short item about Dr. Krantz which appeared in the Washington Post.

In line with Dr. Krantz's testimony I direct that "Population Density and Social Pathology" by Dr. John B. Calhoun, as well as an excerpt of Dr. Calhoun's from "The Social Aspects of Population Dynamics" immediately follow "On the Frontiers of Medicine: Control of Life" (pictures omitted) from Life magazine, as inserts in the record of this hearing.

Dr. Calhoun's chilling article deals with the effects of overcrowding on rats.

(The above listed articles follow:)

EXHIBIT 97

[Life Magazine, International Edition, Sept. 20, 1965]

ON THE FRONTIERS OF MEDICINE: CONTROL OF LIFE

LIFE PRESENTS A MAJOR FOUR-PART SERIES

Of all the fantastic breakthroughs that modern science is making, none will touch man more closely, more wondrously—or more fearfully—than those now being made on the far-out frontiers of medicine and biology. As a result of research already well advanced, man may one day be able to prolong his life for decades by replacing his failing organs as he now replaces the failing parts of his car. He may hope to foreordain the intellect and the physical characteristics of his children and of all the generations that follow. He may, through ways strange to contemplate, yet being seriously pursued, be able to achieve a kind of immortality. In the four-part series beginning on the following pages, Life shows some of the audacious experiments which can give man an awesome power: nothing less than the control of life. The first three installments in the series will tell how science is changing the nature of human reproduction and how it is learning to fit people with spare parts. Part 4 will explore the far-reaching implications of these searches and achievements—both for society and for the everyday life of people everywhere.

EXPLORATION OF PRENATIVITY

With bold new techniques, man begins to alter the process of reproduction

Like something out of "Brave New World" the tiny human fetus in the porthole window at right is being kept alive in an artificial womb. Separated from its mother as a result of a miscarriage when it was just 10 weeks old, it is still connected, via the umbilical cord, to the placenta, and it floats in fluid just as it would if it were proceeding toward a normal birth. But nothing else is the same. This womb-with-a-view is made of thick steel because the highly oxygenated saline solution it contains is held under very high pressure—200 pounds per square inch, the same pressure a diver would encounter 450 feet down. At this pressure oxygen is literally forced through the skin of the fetus. Getting oxygen this way is called cutaneous respiration. But respiration also requires exhaling—getting rid of the waste carbon dioxide gas—and so far the experimenter, Dr. Robert Goodlin of the Stanford University School of Medicine, has found no way to force out the poisonous carbon dioxide. Thus the fetus can survive for only a few hours. But Dr. Goodlin is confident the problem will be solved—perhaps by using a drug that could combine with the wastes and render them harmless. At present it is impossible to keep premature babies alive by standard

incubator techniques below the age of about 24 weeks, mainly because the lungs are underdeveloped. Although Goodlin has been able to keep such fetuses going for no more than 48 hours, he and other scientists are working toward the day when it will become routine to save prematurely aborted fetuses at almost any age and carry them through to "birth" in artificial wombs.

EXPERIMENTS WITH MONKEYS POINT TO THE FEASIBILITY OF FETAL SURGERY

Isolated in its mother's womb, the human fetus until recently has been inaccessible to direct medical and surgical care. But a revolutionary change is now taking place, as shown by these remarkably delicate operations once considered impossible. They are being performed experimentally on monkey fetuses at the Oregon Regional Primate Research Center in Beaverton, Oreg., by a team of doctors from Columbia-Presbyterian Hospital in New York and University of Vermont College of Medicine. The researchers first anesthetized a pregnant Rhesus monkey, thus automatically anesthetizing the fetus inside. Then they lifted out the entire uterus, cut it open without losing much of the vital amniotic fluid, and took out the fetus. After making several tests and satisfying themselves that the exposure had not started the lungs working prematurely, they put the fetus back in, sewed up the uterus, put the uterus back in and sewed up the mother. There was no lasting damage to either mother or offspring, and subsequently the infant had a normal birth.

On the next operation, they attached electrodes to the fetus at the shoulder and chest to provide electrocardiograms. They also connected a tubule to the umbilical cord—though later experiments showed there are better places to attach it—so drugs could be put in and blood samples taken out. As historic as the first experimental open-heart operations, this surgery is a pioneering event in the brand new field of "fetal medicine." As techniques improve, fetuses will undoubtedly be removed for transfusions, medication, or correction of defects, and the patient-within-a-patient will have come into his own.

DOCTORS USE SPECIAL DYES, HEAT AND SOUND TO KEEP WATCH OVER THEIR UNBORN PATIENTS

While doctors look forward to the day when the dramatic procedures shown on the preceding pages will be practiced routinely, they are perfecting other ingenious methods of observing and treating unborn children. One new technique—which must be administered with caution because excessive radiation can have an adverse effect on a fetus—involves the use of a dye which makes parts of the fetus visible to X-rays. In the picture at lower left, a doctor is using such an X-ray photograph as a guide to give a blood transfusion to a fetus still inside its mother. She has a blood type which clashes with that of her baby. In rare and extreme cases like this, the mother's protective antibodies attack the baby's blood cells, and the baby dies. But with this delicate operation, the baby can be saved by giving it a new supply of blood compatible with the mother's.

Less hazardous is the procedure called thermography, in which heat radiating from the mother's body registers a visual image on a photographic plate. Normally, the body's surface temperature is fairly even, so the picture too would be even, with no light and dark contrasts. But when a woman is pregnant her breasts and part of the abdomen are hotter than the rest of the body, and thus appear much lighter on the photograph. The actual outline of the placenta shows up on the abdomen, thus pinpointing its location for the doctor and helping him diagnose certain prenatal troubles such as internal bleeding.

Where thermography gives only a surface outline, ultrasonics probe below the surface. In this technique, high-frequency sound waves are bounced off the fetus to create an image—including soft inner tissues which routine X-rays cannot reveal. This can detect abnormalities such as hydrocephalus, a condition in which the head of the fetus swells dangerously. Though all three of these approaches are still in various stages of research, they are already helping to cure ills and save lives.

A PLACENTA SIMULATOR AND INFANT OPOSSUMS MAY ONE DAY LEAD TO SUPERBABIES

Someday, as a result of the kind of basic research in fetal development shown here, scientists may be able to improve the physique, mentality and even talents of children before they are born—thus, in effect, creating superbabies. The

complicated apparatus is used to develop better ways to test the effects of drugs on fetuses. It is a robot opossum—or more precisely, a robot opossum pouch—in which infant opossums are nurtured.

The opossum should be an ideal animal to study the placenta, the organ that serves as an intermediary between mother and child, and then, having served its function when the baby is delivered, is discharged as the "afterbirth." The marvelous powers of the placenta have only lately begun to be truly appreciated. It is a complex organ, difficult to study. But Dr. Kermit E. Krantz, of the University of Kansas Medical Center, has got around some of the difficulties by building an ingenious device for this study. A marsupial like the kangaroo, its offspring are born while they are still fetuses. They are then sheltered and fed in their mother's pouch until old enough to fend for themselves. In the robot pouch, developed at the Marquardt Corp. in Van Nuys, Calif., 12 little opossums of varying ages can be kept alive in transparent compartments where their reactions to various drugs can be observed. It is not yet possible to study human fetuses in this direct manner.

But scientists have found a way which—hooked up to a real human placenta—can stimulate its functions of supplying the fetus with food, oxygen, hormones and antibodies from the mother, and carrying off wastes. With his machine, Krantz can see where and how things go wrong and devise ways to improve its performance. "It is not hard to see," says Krantz, "how any malfunction of the placenta could turn a potential Einstein into a mediocrity. If we learn enough—who knows?—maybe we can turn mediocrities into Einsteins."

LIVING AND DEAD CALF FETUSES MAY HELP SOLVE THE MYSTERY OF EMBRYOS THAT DIE

Many would-be mothers have had the heartbreaking experience of losing a baby before it is born. The loss may result from a miscarriage—the premature expulsion of the fetus. Very often, it is now believed, a fetus dies so soon after conception that its mother never even realizes she was pregnant. The photograph (omitted) which shows an amniotic sac just after its removal by surgery from the uterus of a cow, dramatically points up the little-understood phenomenon of fetal death. Visible through the translucent wall are two 90-day-old calf fetuses, well formed and still very much alive. The six lumps along the shriveled and curled end of the sac contain fetuses that died soon after conception—so early, in fact, that their substance would in time have been absorbed into the cow's bloodstream instead of being discharged as miscarriages. The eight fetuses were conceived simultaneously in an experiment conducted by Dr. E. S. E. Hafez at Washington State University. Their individual fates may have been affected by the same mysterious factors that determine the outcome of many one-at-a-time human pregnancies. Why does one fetus thrive while another, growing in the same womb, dies? Like Dr. Krantz (preceding page), Dr. Hafez believes that the placenta is the key to fetal development. The multiple pregnancies that he artificially induces push a cow's placenta to the limit of its capabilities. By watching how the placenta handles the overload, Hafez hopes to learn how to boost its efficiency artificially, to give fetuses a better chance of surviving. Scientists now suspect that many women who consider themselves sterile are not really—it is just that their embryos die before pregnancy is suspected. If Hafez can find the cause of these early deaths—often a matter of placental deprivation or mulfunction—he may also find a remedy, thus enabling many women who mistakenly believe they are barren to carry a baby through a normal birth.

THE QUEST FOR MORE EFFECTIVE MEANS OF BIRTH CONTROL

Hardly any problem alarms scientists more than the world's population explosion. They spend a lot of time and energy devising more effective birth-control methods. The most popular contraceptive in the U.S. is the famous pill which prevents the ovaries from releasing eggs. It was developed at the Worcester Foundation for Experimental Biology where further research is in progress. Researchers elsewhere hope soon to perfect a once-a-month injection to replace the pill-a-day. Meanwhile most existing contraceptives, including the pill, are too expensive for most of the world's people. As an interim measure, more and more people are using the so-called intra-uterine devices (IUDs). These are simply odd-shaped pieces of metal or plastic—some tied with bits of thread—that resemble free-form pieces of costume jewelry. They are inserted into the uterus by doctors and simply left there. No one is sure how they work—but they do.

PLANT EXPERIMENTS STIR SPECULATION THAT MAN MIGHT REPRODUCE WHILE BYPASSING SEX

Many of the riddles of life are still locked within the tiny cells that comprise all living tissue, plant or animal. Of these mysteries, none is more intriguing than that of cell specialization—how and why one cell in a human embryo, for example, proliferates to become a finger or an eye while another becomes a stomach or liver. From the moment a human egg is fertilized, its biological destiny is foreordained. Instructions governing its ultimate multicellular specialization are coded into the intricate chains of genes—called chromosomes—which float within its nucleus. Even though this produces vast differences in the function and outward appearance of cells, the billions of cells that make up the mature individual have one thing in common with the fertilized egg that was their ancestor: each of them contains an identical set of instruction-laden chromosomes—i.e., the latent potential for multiplying itself into another mature individual. The question is, can biologists devise a means to tap this potential? In a remarkable breakthrough, Cornell University's Dr. Frederick C. Steward, working with plants such as carrots and tobacco, has in effect altogether bypassed the sexual process of pollination. He routinely takes single cells from adult plant tissues and treats them with complex growth-stimulating substances, thereby causing them to grow into adult plants. In this manner he can make any cell from almost anywhere on the body of a mature carrot behave as if it were the original fertilized egg cell. Dr. Steward declines to speculate upon the futuristic human implications of his research. But others familiar with these new developments are less cautious. They expect similiar breakthroughs with animal cells. It is thus not absurd to imagine the day when a single tiny cell taken from the skin of the world's greatest genius might be grown into a second individual who is in every respect identical.

MASS OVULATION AND FOSTER MOTHER COWS MAKE LITTERS OF 100S

Dr. Hafez' speciality is producing multiple births in livestock—in such enormous litters that he considers quintuplets a failure. Through an ingenious use of hormones and of other animals that serve as foster mothers, he routinely produces centuplets. Normally a cow's ovary releases one egg at a time, just as the ovary of a woman does. As a result, though a cow is born with thousands of incipent eggs in its ovaries, it can give birth to no more than 10 or 12 calves in its lifetime. But Hafez, who learned the startling new techniques in England, now uses two sets of hormones—one extracted from pregnant mares, the other from pregnant women—to make a cow's ovaries release ripe eggs in quantity. He can do this even with young, immature calves—like the month-and-a-half-old animal shown at top right—as well as with very old cows. Similiar hormones have already been used to make barren women fertile, sometimes resulting in multiple births (Life International, Aug. 23). In Hafez' cows the quantity production is deliberate. After his cows undergo multiple ovulation he artifically inseminates them, fertilizing as many as 100 eggs in each animal. Several days after the mass conception, he flushes out the tiny embryos. These can then be implanted directly into the uteruses of other cows. If no mishap occurs and if the receiving uterus has been properly prepared with hormones, the implanted calf will go through a normal gestation period and be born as if it were the foster mother's own—but with the genetic qualties of its true parents. As an interim measure, the embryos can be transplanted into smaller animals such as rabbits where they continue to grow normally for up to 14 days before being put into other cows. Thus a whole herd of superb, pedigreed cattle could be transported easily and cheaply across oceans inside a single rabbit, while their mother grazes contentedly back on the farm, ready to produce the next 100 eggs on demand. Hafez sees no reason why his techniques could not be applied to people.

COLD-STORAGE EMBRYOS TO SEND TO THE PLANETS AS A TEST-TUBE COLONY

In this symbolic photograph, Dr. Hafez holds a set of dummy vials which, he says, could contain "the barnyard of the future—complete with farmer." Fertilized egg cells could be shipped anywhere in cold storage in containers like these, each vial color-coded to identify the species it contains. Hafez believes his techniques are particularly suitable to the space age, as a means of colonizing the planets. "When you consider how much it costs in fuel to lift every pound off the launch pad," he says, "why send full-grown men and women aboard

spaceships? Instead, why not ship tiny embryos, in the care of a competent biologist who could grow them into people, cows, pigs, chickens, horses—anything we wanted—after they get there? After all, we miniaturize other spacecraft components. Why not the passengers?"

CLINICS SPOT CONGENITAL DEFECTS IN PARENTS' CHROMOSOMES

Precise methods of foreordaining the physical and mental qualities of children still lie in the future. But thanks to a new and growing field of medical science called cytogenetics, certain parents already can exercise a degree of control in the matter—through the detection of genetic defects in themselves that might be transmitted to their offspring.

Across the U.S. there are some 40 "chromosome clinics" which specialize in this work. One such establishment is operated by Dr. R. James McKay at the University of Vermont College of Medicine at Burlington. Recently a young couple presented Dr. McKay with a typical problem. They wanted children but were afraid to have them. The would-be mother explained that her own youngest sister was a mongoloid. The family doctor had advised her to consult the clinic to try to find out whether the type of mongolism in question might be hereditary and whether it was present in her own chromosomes as a hidden defect.

Accordingly, Dr. McKay began the painstaking and complicated process of chromosome analysis. He took blood samples from the woman's mongoloid sister. Using a microscope, he studied the cell-division process by which the white corpuscles multiplied and took pictures at the precise moment their chromosomes became visible. From photographic enlargements he made cutouts of the chromosomes and paired them off the way they pair themselves off when a cell is about to divide. In the specimen obtained from the mongoloid he found an extra chromosome. This allowed Dr. McKay practically to assure the relieved couple that the sister's mongolism had nothing to do with heredity but resulted from an abnormality in the last-minute development of a single egg cell. This sometimes happens in older mothers who are known to produce mongoloids more frequently than younger ones do. As it happens, the mongoloid's mother was 40 years old when the defective child was born.

Had Dr. McKay spotted a chromosomal defect, or missing or extra ones or odd bits, that suggested the woman carried built-in congenital defects, he could have calculated the odds that the longed-for child would be defective. This can be, as much as 1-in-3 in some cases where only the mother's chromosomes appear to carry a defect. Then he would leave it to the couple to decide whether they wanted to take the risk of having a defective child or, instead, adopt children.

Only recently have scientists definitely established a relationship between odd-looking chromosomes and some of the heriditary imperfections that are known as "genetic diseases." These include cleft palate, heart defects, certain kinds of low mentality and poor eyes. The technique of chromosome analysis has been used to study the causes of miscarriage, and roughly one in five fetuses in such cases has been found to have abnormal chromosomes. In some structural defects of sex organs, doctors have devised a relatively easy test to determine whether certain chromosomes are responsible.

Experiments are already under way to devise means of altering the structure of chromosomes of animals to change their characteristics. In the near future parents may be able to choose the sex of their children—through artificial insemination with sperm obtained from the father and selected for the chromosome of the desired sex. Even more remarkable methods of foreordaining the characteristics of one's progeny are in the offing. These are among the subjects to be discussed in Part 4 of this series.

EXHIBIT 98

CURRICULUM VITAE

Name: Kermit Edward Krantz.
Position:
Professor and Chairman, Department of Gynecology and Obstetrics.
Professor of Anatomy, Department of Anatomy.
University of Kansas School of Medicine.
Address: Office: University of Kansas Medical Center, 39th Street and Rainbow Boulevard, Kansas City, Kansas, 66103.
Place of Birth: Oak Park, Illinois, June 4, 1923.

EDUCATION

High School: 1941 Oak Park and River Forest Township High School, Oak Park, Illinois.
B.S.: 1945 Northwestern University, Evanston-Chicago, Illinois.
B.M.: 1947 Northwestern University, The Medical School, Chicago.
M.S. (Anatomy): 1947 Northwestern University, The Medical School, Chicago.
M.D.: 1948 Northwestern University, The Medical School, Chicago.

APPOINTMENTS

1943: Tutorial Fellowship, Zoology, Northwstern University.
1943: Assistant, Department of Zoology, Northwestern University.
1944–47: Curator, Museum of Anatomy, Northwestern University School of Medicine.
1944–47: Graduate Student, Anatomy, Northwestern University Medical School—Histology, Embryology, Gross Anatomy—Female.
1947–48: Intern, Obstetrics and Gynecology, New York Lying-In Hospital, The New York Hospital.
1948–50: Assistant Resident and Assistant in Obstetrics and Gynecology, Cornell Medical College, New York Lying-In Hospital, The New York City Hospital.
1948–50: Bown-Brooks Fellowship, The New York Academy of Medicine.
1950–51: Fellow and Resident in Obstetrics and Gynecology, University of Vermont College of Medicine, Mary Fletcher Hospital, Burlington, Vermont.
1951–53: Instructor, Full Time, Obstetrics and Gynecology, University of Vermont College of Medicine, Mary Fletcher Hospital, Burlington, Vermont.
1951–55: Consultant, Obstetrics and Gynecology, Department of Health, State of Vermont.
1953–55: Assistant Professor, Obstetrics and Gynecology, University of Vermont College of Medicine, Burlington, Vermont.
1952–55: Director, Durfee Clinic, Mary Fletcher Hospital, University of Vermont College of Medicine, Burlington, Vermont.
1955–59: Assistant Professor, Obstetrics and Gynecology, University of Arkansas Medical School, Little Rock, Arkansas.
1957–62: Markle Scholar in Medical Science.
1959 to date: Professor and Chairman, Department of Gynecology and Obstetrics, University of Kansas Medical Center, Kansas City, Kansas.
1959 to date: Consultant, Gynecology and Obstetrics, Fort Leavenworth Hospital, Fort Leavenworth, Kansas.
1959 to date: Consultant, Gynecology and Obstetrics, Veterans Hospital, Kansas City, Missouri.
1960–63: Member of Clinical Research Panel for Clinical Research Postdoctoral and Special Fellowships, Division of General Medical Sciences, National Institutes of Health.
1961 to date: Consultant, Cancer Control Program, U.S. Public Health Service.
1963 to date: Professor of Anatomy, University of Kansas Medical Center.
1964 to date: Program Consultant, NIH Reproductive Biology, National Institute of Child Health and Human Development.
1964 to date: National Civilian Consultant, Gynecology and Obstetrics, Surgeon General, U.S. Air Force.

HOSPITAL APPOINTMENTS

1951–55: Associate Attending, The Mary Fletcher Hospital, Burlington, Vermont.
1951–55: Assistant Attending, Bishop DeGoosbriand Hospital, Burlington, Vermont.
1955–59: Attending, University Hospital, University of Arkansas School of Medicine, Little Rock, Arkansas.
1959 to date: Obstetrics and Gynecologist in Chief, University of Kansas Medical Center, Kansas City, Kansas.

MEMBERSHIP IN MEDICAL AND SCIENTIFIC SOCIETIES

Certified, American Board of Obstetrics and Gynecology, 1955.
American College of Surgeons, 1957.
American College of Obstetricians and Gynecologists, Founding Fellow.
American Association of Anatomists.
American Federation of Clinical Research.
American Medical Association.

American Men of Science.
American Medical Writers Association.
American Fertility Society.
American Association of University Professors.
Society for Experimental Biology and Medicine.
Aerospace Medical Association.
The Endocrine Society.
International Correspondence Society of Obstetricians and Gynecologists.
Society for Gynecologic Investigation.
Central Association of Obstetricians and Gynecologists.
New York Academy of Medicine.
New York Academy of Science.
Vermont Medical Association.
Arkansas State Medical Society.
Kansas State Medical Society.
Washington State Obstetrical Association, Honorary Member.
Terre Haute Academy of Medicine, Honorary Member.
Kansas State Obstetrical Society.
Kansas State Gynecological Society.
Wyandotte County Medical Society.
Aesculapius Honorary Pre-Medical Society.
Sigma Xi, Associate Member, Member, 1947.
Kaw Valley Heart Association.
Member of Washington Lodge #3 AF–AM; Mt. Sinai Temple of FAM of the Shrine.
Maternal Welfare Committee, State of Kansas.
Committee of Female Genital Tract Cancer Death Study, State of Kansas.
Medical and Professional Advisory Board of the Cerebral Palsy Association of the Greater Kansas City.

AWARDS

1950: Recipient, The Foundation Award of the South Atlantic Association of Obstetricians and Gynecologists for Research on the Gravid Uterus and Anatomy of the Human Placenta.
1950: Recipient, The Foundation Award of the American Association of Obstetricians and Gynecologists for Research on the Anatomy of the Female Urethra and Anterior Vaginal Wall.
1955: Nu Sigma Nu Award "Outstanding Professor in the College of Medicine for the Year 1955."
1957–62: Markle Scholar in Medical Science.

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EXHIBIT 99

VERY INTERESTING PEOPLE

(By Maxine Cheshire, Washington Post, Mar. 31, 1966)

Dr. Kermit Krantz, the University of Kansas Medical Center scientist who was featured in Life magazine as a genetics genius right out of Aldous Huxley's "Brave New World," has been in Washington this week and is scheduled to return again soon to testify on The Hill; the man who may some day be able to influence the development of a human fetus within the womb, he says, and turn "a mediocrity into an Einstein" before it is born, has a lot he wants to say to Congress about birth control . . .

EXHIBIT 100

POPULATION DENSITY AND SOCIAL PATHOLOGY*

(The Urban Condition, Basic Books, Inc., N.Y., Chapter 4, John B. Calhoun, pp. 33–43)

In the celebrated thesis of Thomas Malthus, vice and misery impose the ultimate natural limit on the growth of populations. Students of the subject have given most of their attention to misery, that is, to predation, disease, and food supply as forces that operate to adjust the size of a population to its environment. But what of vice? Setting aside the moral burden of this word, what are the effects of the social behavior of a species on population growth—and of population density on social behavior?

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Some years ago I attempted to submit this question to experimental inquiry. I confined a population of wild Norway rats in a quarter-acre enclosure. With an abundance of food and places to live and with predation and disease eliminated or minimized, only the animals' behavior with respect to one another remained as a factor that might affect the increase in their number. There could be no escape from the behavioral consequences of rising population density. By the end of 27 months the population had become stabilized at 150 adults. Yet adult mortality was so low that 5,000 adults might have been expected from the observed reproductive rate. The reason this larger population did not materialize was that infant mortality was extremely high. Even with only 150 adults in the enclosure, stress from social interaction led to such disruption of maternal behavior that few young survived.

With this background in mind I turned to observation of a domesticated albino strain of the Norway rat under more controlled circumstances indoors. The data for the present discussion come from the histories of six different populations. Each was permitted to increase to approximately twice the number that my experience had indicated could occupy the available space with only moderate stress from social interaction. In each case my associates and I maintined close surveillance of the colonies for 16 months in order to obtain detailed records of the modifications of behavior induced by population density.

The consequences of the behavioral pathology we observed were most apparent among the females. Many were unable to carry pregnancy to full term or to survive delivery of their litters if they did. An even greater number after successfully giving birth, fell short in their maternal functions. Among the males the behavior disturbances ranged from sexual deviation to cannibalism and from frenetic overactivity to a pathological withdrawal from which individuals would emerge to eat, drink and move about only when other members of the community were asleep. The social organization of the animals showed equal disruption. Each of the experimental populations divided itself into several groups, in each of which the sex ratios were drastically modified. One group might consist of 6 or 7 females and 1 male, whereas another would have 20 males and only 10 females.

The common source of these disturbances became most dramatically apparent in the populations of our first series of three experiments, in which we observed the development of what we called a behavioral sink. The animals would crowd together in greatest number in one of the 4 interconnecting pens in which the colony was maintained. As many as 60 of the 80 rats in each experimental population would assemble in one pen during periods of feeding. Individual rats would rarely eat except in the company of other rats. As a result extreme population densities developed in the pen adopted for eating, leaving the others with sparse populations.

Eating and other biological activities were thereby transformed into social activities in which the principal satisfaction was interaction with other rats. In the case of eating, this transformation of behavior did not keep the animals from securing adequate nutrition. But the same pathological "togetherness" tended to disrupt the ordered sequences of activity involved in other vital modes of behavior such as the courting of sex partners, the building of nests and the nursing and care of the young. In the experiments in which the behavioral sink developed, infant mortality ran as high as 96 per cent among the most disoriented groups in the population. Even in the absence of the behavioral sink, in the second series of three experiments, infant mortality reached 80 per cent among the corresponding members of the experimental populations.

The design of the experiments was relatively simple. The three populations of the first series each began with 32 rats; each population of the second series began with 56 rats. In all cases the animals were just past weaning and were evenly divided between males and females. By the twelfth month all the populations had multiplied and each comprised 80 adults. Thereafter removal of the infants that survived birth and weaning held the populations steady. Although the destructive effects of population density increased during the course of the experiments, and the mortality rate among the females and among the young was much higher in the sixteenth month than it was earlier, the number of young that survived to weaning was always large enough to offset the effects of adult mortality and actually to increase the population. The evidence indicates, however, that in time failures of reproductive function would have caused the colonies to die out. At the end of the first series of experiments eight rats—the four healthiest males and the four healthiest females in each

of two populations—were permitted to survive. These animals were 6 months old at the time, in the prime of life. Yet, in spite of the fact that they no longer lived in overpopulated environments, they produced fewer litters in the next 6 months than would normally have been expected. Nor did any of the offspring that were born survive to maturity.

The males and females that initiated each experiment were placed, in groups of the same size and sex composition, in each of the 4 pens that partitioned a 10-by-14-foot observation room. The pens were complete dwelling units; each contained a drinking fountain, a food hopper and an elevated artificial burrow, reached by a winding staircase and holding five nest boxes. A window in the ceiling of the room permitted observation, and there was a door in one wall. With space for a colony of 12 adults in each pen—the size of the groups in which rats are normally found—this setup should have been able to support 48 rats comfortably. At the stabilized number of 80, an equal distribution of the animals would have found 20 adult rats in each pen. But the animals did not dispose themselves in this way.

Biasing factors were introduced in the physical design of the environment to encourage differential use of the 4 pens. The partitions separating the pens were electrified so that the rats could not climb them. Ramps across three of of the partitions enabled the animals to get from one pen to another and so traverse the entire room. With no ramps to permit crossing of the fourth partition, however, the pens on each side of it became the end pens of what was topologically a row of 4. The rats had to make a complete circuit of the room to go from the pen we designated 1 to the pen designated 4 on the other side of the partition separating the two. This arrangement of ramps immediately skewed the mathematical probabilities in favor of a higher population density in pens 2 and 3 than in pens 1 and 4. Pens 2 and 3 could be reached by two ramps, whereas pens 1 and 4 had only one each.

The use of pen 4 was further discouraged by the elevation of its burrow to a height greater than that of the burrow in the other end pen. The two middle pens were similarly distinguished from each other, the burrow in pen 3 being higher than that in pen 2. But here the differential appears to have played a smaller role, although pen 2 was used somewhat more often than pen 3.

With the distribution of the rats biased by these physical arrangements, the sizes of the groups in each pen could have been expected to range from as few as 13 to as many as 27. With the passage of time, however, changes in behavior tended to skew the distribution of the rats among the pens even more. Of the 100 distinct sleeping groups counted in the tenth to twelfth month of each experiment, only 37 fell within the expected size range. In 33 groups there were fewer than 13 rats, and in 30 groups the count exceeded 27. The sex ratio approximated equality only in those groups that fell within the expected size range. In the smaller groups, generally composed of 8 adults, there were seldom more than 2 males. In the larger groups, on the other hand, there were many more males than females. As might be expected, the smaller groups established themselves in the end pens, whereas the larger groups were usually observed to form in the middle pens. The female members of the population distributed themselves about equally in the 4 pens, but the male population was concentrated almost overwhelmingly in the middle pens.

One major factor in the creation of this state of affairs was the struggle for status that took place among the males. Shortly after male rats reach maturity, at about 6 months of age, they enter into a round robin of fights that eventually fixes their position in the social hierarchy. In our experiments such fights took place among the males in all the pens, both middle and end. In the end pens, however, it became possible for a single dominant male to take over the area as his territory. During the period when the social hierarchy was being established, the subordinate males in all pens adopted the habit of rising early. This enabled them to eat and drink in peace. Since rats generally eat in the course of their normal wandering, the subordinate residents of the end pens were likely to feed in one of the middle pens. When, after feeding, they wanted to return to their original quarters, they would find it very difficult. By this time the most dominant male in the pen would probably have awakened, and he would engage the subordinates in fights as they tried to come down the one ramp to the pen. For a while the subordinate would continue its efforts to return to what had been its home pen, but after a succession of defeats it would become so conditioned that it would not even make the attempt. In essence, the dominant male established his territorial dominion and his control over a harem of females, not by driving the other males out, but by preventing their return.

Once a male had established his dominion over an end pen and the harem it contained, he was usually able to maintain it. Although he slept a good deal of the time, he made his sleeping quarters at the base of the ramp. He was, therefore, on perpetual guard. Awakening as soon as another male appeared at the head of the ramp, he had only to open his eyes for the invader to wheel around and return to the adjoining pen. On the other hand, he would sleep calmly through all the comings and goings of his harem; seemingly he did not even hear their clatterings up and down the wire ramp. His conduct during his waking hours reflected his dominant status. He would move about in a casual and deliberate fashion, occasionally inspecting the burrow and nests of his harem. But he would rarely enter a burrow, as some other males did, merely to ferret out the females.

A territorial male might tolerate other males in his domain provided they respected his status. Such subordinate males inhabited the end pens in several of the experiments. Phlegmatic animals, they spent most of their time hidden in the burrow with the adult females, and their excursions to the floor lasted only as long as it took them to obtain food and water. Although they never attempted to engage in sexual activity with any of the females, they were likely, on those rare occasions when they encountered the dominant male, to make repeated attempts to mount him. Generally the dominant male tolerated these advances.

In these end pens, where population density was lowest, the mortality rate among infants and females was also low. Of the various social environments that developed during the course of the experiments, the brood pens, as we called them, appeared to be the only healthy ones, at least in terms of the survival of the group. The harem females generally made good mothers. They nursed their young, built nests for them and protected them from harm. If any situation arose that a mother considered a danger to her pups, she would pick the infants up one at a time and carry them in her mouth to a safer place. Nothing would distract her from this task until the entire litter had been moved. Half the infants born in the brood pens survived.

The pregnancy rates recorded among the females in the middle pens were no lower than those recorded in the end pens. But a smaller percentage of these pregnancies terminated in live births. In the second series of experiments 80 per cent of the infants born in the middle pens died before weaning. In the first series 96 per cent perished before this time. The males in the middle pens were no less affected than the females by the pressures of population density. In both series of experiments the social pathology among the males was high. In the first series, however, it was more aggravated than it was in the second.

This increase in disturbance among the middle-pen occupants of the first series of experiments was directly related to the development of the phenomenon of the behavioral sink—the outcome of any behavioral process that collects animals together in unusually great numbers. The unhealthy connotations of the term are not accidental: a behavioral sink does act to aggravate all forms of pathology that can be found within a group.

The emergence of a behavioral sink was fostered by the arrangements that were made for feeding the animals. In these experiments the food consisted of small, hard pellets that were kept in a circular hopper formed by wire mesh. In consequence, satisfaction of hunger required a continuous effort lasting several minutes. The chances therefore were good that while one rat was eating another would join it at the hopper. As was mentioned earlier, rats usually eat intermittently throughout their waking hours, whenever they are hungry and food is available. Since the arrangement of the ramps drew more rats into the middle pens than into the end ones, it was in these pens that individuals were most likely to find other individuals eating. As the population increased, the association of eating with the presence of other animals was further reinforced. Gradually the social aspect of the activity became determinant: the rats would rarely eat except at hoppers already in use by other animals.

At this point the process became a vicious circle. As more and more of the rats tended to collect at the hopper in one of the middle pens, the other hoppers became less desirable as eating places. The rats that were eating at these undesirable locations, finding themselves deserted by their group-mates, would transfer their feeding to the more crowded pen. By the time the three experiments in the first series drew to a close half or more of the populations were sleeping as well as eating in that pen. As a result there was a decided

increase in the number of social adjustments each rat had to make every day. Regardless of which pen a rat slept in, it would go to one particular middle pen several times a day to eat. Therefore it was compelled daily to make some sort of adjustment to virtually every other rat in the experimental population.

No behavioral sinks developed in the second series of experiments, because we offered the rats their diet in a different way. A powdered food was set out in an open hopper. Since it took the animals only a little while to eat, the probability that two animals would be eating simultaneously was considerably reduced. In order to foster the emergence of a behavioral sink I supplied the pens with drinking fountains designed to prolong the drinking activity. The effect of this arrangement was unquestionably to make the animals social drinkers; they used the fountain mainly when other animals lined up at it. But the effect was also to discourage them from wandering and to prevent the development of a behavioral sink. Since rats generally drink immediately on arising, drinking and the social interaction it occasioned tended to keep them in the pens in which they slept. For this reason all social pathology in the second series of experiments, although severe, was less extreme than it was in the first series.

Females that lived in the densely populated middle pens became progressively less adept at building adequate nests and eventually stopped building nests at all. Normally rats of both sexes build nests, but females do so most vigorously around the time of parturition. It is an undertaking that involves repeated periods of sustained activity, searching out appropriate materials (in our experiments strips of paper supplied an abundance), transporting them bit by bit to the nest and there arranging them to form a cup-like depression, frequently sheltered by a hood. In a crowded middle pen, however, the ability of females to persist in this biologically essential activity became markedly impaired. The first sign of disruption was a failure to build the nest to normal specifications. These females simply piled the strips of paper in a heap, sometimes trampling them into a pad that showed little sign of cup formation. Later in the experiment they would bring fewer and fewer strips to the nesting site. In the midst of transporting a bit of material they would drop it to engage in some other activity occasioned by contact and interaction with other individuals met on the way. In the extreme disruption of their behavior during the later months of the population's history they would build no nests at all but would bear the litters on the sawdust in the burrow box.

The middle-pen females similarly lost the ability to transport their litters from one place to another. They would move only part of their litters, and would scatter them by depositing the infants in different places or by simply dropping them on the floor of the pen. The infants thus abandoned throughout the pen were seldom nursed. They would die where they were dropped, and were thereupon generally eaten by the adults.

The social stresses that brought about this disorganization in the behavior of the middle-pen females were imposed with special weight on them when they came into heat. An estrous female would be pursued relentlessly by a pack of males, unable to escape from their soon unwanted attentions. Even when she retired to a burrow, some males would follow her. Among these females there was a correspondingly high rate of mortality from disorders in pregnancy and parturition. Nearly half of the first- and second-generation females that lived in the behavioral-sink situation had died of these causes by the end of the sixteenth month. Even in the absence of the extreme stresses of the behavioral sink, 25 per cent of the females died. In contrast, only 15 per cent of the adult males in both series of experiments died.

A female that lived in a brood pen was sheltered from these stresses even though during her periods of estrus she would leave her pen to mate with males in the other pens of the room. Once she was satisfied, however, she could return to the brood pen. There she was protected from the excessive attention of other males by the territorial male.

For the effect of population density on the males there is no index as explicit and objective as the infant and maternal mortality rates. We have attempted a first approximation of such an index, however, by scoring the behavior of the males on two scales: that of dominance and that of physical activity. The first index proved particularly effective in the early period of the experiments, when the males were approaching adulthood and beginning the fights that eventually fixed their status in the social hierarchy. The more fights a male initiated and the more fights he won, the more likely he was to establish a position of dominance. More than half the animals in each experiment gave up the struggle for status after a while, but among those that persisted a clear-cut heirarchy developed.

In the crowded middle pens no one individual occupied the top position in this heirarchy permanently. In every group of 12 or more males one was the most aggressive and most often the victor in fights. Nevertheless, this rat was periodically ousted from his position. At regular intervals during the course of their waking hours the top-ranking males engaged in free-for-alls that culminated in the transfer of dominance from one male to another. In between these tumultuous changings of the guard relative calm prevailed.

The aggressive, dominant animals were the most normal males in our populations. They seldom bothered either the females or the juveniles. Yet even they exhibited occasional signs of pathology, going berserk, attacking females, juveniles and the less active males, and showing a particular predilection—which rats do not normally display—for biting other animals on the tail.

Below the dominant males both on the status scale and in their level of activity were the homosexuals—a group perhaps better described as pansexual. These animals apparently could not discriminate between appropriate and inappropriate sex partners. They made sexual advances to males, juveniles and females that were not in estrus. The males, including the dominants as well as the others of the pansexual's own group, usually accepted their attentions. The general level of activity of these animals was only moderate. They were frequently attacked by their dominant associates, but they very rarely contended for status.

Two other types of male emerged, both of which had resigned entirely from the struggle for dominance. They were, however, at exactly opposite poles as far as their levels of activity were concerned. The first were completely passive and moved through the community like somnambulists. They ignored all the other rats of both sexes, and all the other rats ignored them. Even when the females were in estrus, these passive animals made no advances to them. And only very rarely did other males attack them or approach them for any kind of play. To the casual observer the passive animals would have appeared to be the healthiest and most attractive members of the community. They were fat and sleek, and their fur showed none of the breaks and bare spots left by the fighting in which males usually engage. But their social disorientation was nearly complete.

Perhaps the strangest of all the types that emerged among the males was the group I have called the probers. These animals, which always lived in the middle pens, took no part at all in the status struggle. Nevertheless, they were the most active of all the males in the experimental populations, and they persisted in their activity in spite of attacks by the dominant animals. In addition to being hyperactive, the probers were both hypersexual and homosexual, and in time many of them became cannibalistic. They were always on the alert for estrous females. If they were none in their own pens, they would lie in wait for long periods at the tops of the ramps that gave on the brood pens and peer down into them. They always turned and fled as soon as the territorial rat caught sight of them. But even if they did not manage to escape unhurt they would soon return to their vantage point.

The probers conducted their pursuit of estrous females in an abnormal manner. Mating among rats usually involves a distinct courtship ritual. In the first phase of this ritual the male pursues the female. She thereupon retires for a while into the burrow, and the male lies quietly in wait outside, occasionally poking his head into the burrow for a moment but never entering it. (In the wild forms of the Norway rat this phase usually involves a courtship dance on the mound at the mouth of the burrow.) The female at last emerges from the burrow and accepts the male's advances. Even in the disordered community of the middle pens this pattern was observed by all the males who engaged in normal heterosexual behavior. But the probers would not tolerate even a short period of waiting at the burrows in the pens where accessible females lived. As soon as a female retired to a burrow, a prober would follow her inside. On these expeditions the probers often found dead young lying in the nests; as a result they tended to become cannibalistic in the later months of the population's history.

Although the behavioral sink did not develop in the second series of experiments, the pathology exhibited by the populations in both sets of experiments, and in all pens, was severe. Even in the brood pens, females could raise only half their young to weaning. Nor does the difference in infant mortality between the middle pens of the first and second series—96 per cent in the first as opposed to 80 per cent in the second—represent a biologically significant improvement. It is obvious that the behavioral repertory with which the Norway rat has emerged from the trials of evolution and domestication must break down under

the social pressures generated by population density. In time, refinement of experimental procedures and of the interpretation of these studies may advance our understanding to the point where they may contribute to the making of value judgments about analogous problems confronting the human species.

EXHIBIT 101

EXCERPT FROM "THE SOCIAL ASPECTS OF POPULATON DYNAMICS"

(By John B. Calhoun, Journal of Mammalogy, Vol. 33, No. 2, May 1952, p. 151)

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Thus, we see that several growth processes are closely interrelated: (1) the rate of physical growth and skeletal maturation in the individual, (2) the level of mature growth of the individual, (3) the level of sexual and behavioral maturity in the individual, (4) the degree to which an individual or group is enabled to express genetic potentialities, (5) the growth rate of a population and its density at maturity, and (6) the social integration of a population—all these are inter-dependent variables whose expression is in turn influenced by the structure of the environment and the degree of cultural continuity possible.

The extent to which one of these growth phenomena may be enhanced through the partial suppression of the others raises the problem of value systems. Population density may be intensified at the expense of reduction in individual growth, and an increase in social tension. Maximum individual growth may be assured, through isolation with the resultant induced social sterility, irrespective of population density. A realization of the interdependence of these growth phenomena provides the viewpoint for the establishment of a truly comparative science of sociobiology.

As our human society becomes more highly technical, there arises the tendency to accentuate one of these growth phenomena without any consideration as to its effect on other aspects of life. This is particularly so as regards increasing population density, which in many quarters is accepted as a desirable objective. Bateson (1912) long ago realized the fallacy of this concept when he said: "It is not the *maximum* number but the *optimum* number, having regard to the means of distribution, that it should be the endeavor of social organization to secure. To spread a layer of human protoplasm of the greatest possible thickness over the earth—the implied ambition of many publicists—in the light of natural knowledge is seen to be reckless folly."

Yet such accentuation of a single aspect of the value systems relating to growth phenomena continue. E. G. Rochow (1949) predicts that it will be possible to feed a population of one billion persons (this is over five times the upper level indicated by the present trend) living within the boundaries of the United States. In a letter to me, Dr. Rochow made this further elaboration: "The chief difficulty arises, of course, in feeding so large a population, particularly if it is to spread over and inhabit a large part of the present farm lands. This is the part of the problem that becomes a challenge to chemists" and "I should also like to point out that the high population density in large cities is in part alleviated by purposeful isolation of many of the inhabitants." The choice before us is to develop a society whose numbers are limited, but whose members live a full life, or, as Rochow believes, to develop a society of maximum numbers whose members have had a restricted experience accompanied by an inhibition of many potentialities of expression. Maximum production of protoplasm is a valid concept and objective in the field of animal husbandry, but it is of doubtful value when applied to human society or even to game management. Currrent discussions of increasing agricultural production are also frequently so worded as to imply that what is possible is desirable—with little critical thought as to the consequences on the human population.

Senator GRUENING. We have two witnesses that we have asked to appear together, Dr. Leonard Duhl and Dr. Donald N. Michael.

In my opening statement this morning I noted that two of our contributors to the population dialog would discuss how man may look forward to and improve his urban environment. This improvement is important. Man crowded tends to lose either his identity or his love of fellow man. Certainly the quality of his life suffers.

BIOGRAPHIC STATEMENT: LEONARD J. DUHL

Dr. Leonard J. Duhl is a consultant on urban affairs for the Secretary of the Department of Housing and Urban Development, the Honorable Robert C. Weaver, and for the Undersecretary of the Department, the Honorable Robert C. Wood.

Dr. Duhl lives in Washington, D.C., with his wife Carola and their four children. He was born in New York City on May 24, 1926, and received his A.B. degree from Columbia University in June 1945. A 1948 graduate of the Albany Medical College, he received his psychiatric training from the Washington Psychoanalytic Institute. His medical training includes 4 years as a fellow in the Menninger Foundation School of Psychiatry while serving simultaneously as resident in psychiatry at the Winter Veterans' Administration Hospital. In 1954 he was assigned to the Menninger Clinic. From June 1954 to 1964, he was a psychiatrist, professional services branch, of the National Institute of Mental Health. He is a member of the board of directors of the American Orthopsychiatric Association.

Dr. Duhl is assistant clinical professor of psychiatry at the George Washington University, Washington, D.C. He is a consultant to the Peace Corps, the joint task force on HEW Services and Housing, the Public Health Service's Migratory Labor Advisory Committee, and numerous other committees. He has the grade of medical director in the Public Health Service.

A member or fellow in many national psychiatric associations, Dr. Duhl has an affiliateship in the Royal Society of Medicine, London, England. He was certified in psychiatry by the American Board of Psychiatry and Neurology in 1956.

He has edited three books and is the author or coauthor of numerous papers, including "Urbanization and Human Needs"; "The Psychiatrist in Urban Social Planning"; and "Mental Health and the Urban World," which he presented at the 1965 White House Conference on Health.

BIOGRAPHIC STATEMENT: DONALD N. MICHAEL

Dr. Donald N. Michael was born in Chicago in 1923. He is a social psychologist with a background in the physical sciences, and was educated at Harvard and the University of Chicago. After receiving his Ph. D. from Harvard, he taught at Boston University and did research on teaching from audiovisual aids on contract to the Air Force. In 1953 he joined the Weapons Systems Evaluation Group of the Joint Chiefs of Staff as staff social scientist and scientific warfare adviser. For several years he was adviser on attitude research on national science policy for the National Science Foundation.

From 1956 to 1959 he was senior research associate with the research firm of Dunlap & Associates, Inc., Stamford, Conn., where he did extensive work on the Polaris submarine and on civil defense problems.

From 1959 to 1961 he was senior staff member of the Brookings Institution in Washington, where he directed a study project for the National Aeronautics and Space Administration on the social implications of peaceful space activities. He was director of the Peace Research Institute, Washington, D.C., and is now a resident fellow of the Institute for Policy Studies, Washington, D.C.

Dr. Michael has been a consultant to UNESCO, the Committee on Disaster Studies of the National Research Council, the Department of Defense, as well as a member of the staff of the Gaither Committee, and a member of the Technical Committee on Law and Sociology of the American Institute of Aeronautics and Astronautics. He is chairman of the subcommittee on long-range problems of peace and war of the Society for the Psychological Study of Social Issues and chairman of the American Psychological Association's ad hoc Committee on Cybernation. He is chairman of the social planning study group for the new Maryland city of Columbia.

He has published many professional papers, essays, and reports on practical and theoretical problems having to do with man's ability to adjust to the social and psychological changes which rapid technology produces. Among these are the Brookings Institution publication, "Proposed Studies on the Implications of Peaceful Space Activities for Human Affairs," and "Cybernation: The Silent Conquest," published by the Fund for the Republic's Center for the Study of Democratic Institutions at Santa Barbara. His book, "The Next Generation: Prospects Ahead For the Youth of Today and Tomorrow," was published by Random House in 1965.

Dr. Michael is a fellow of the American Association for the Advancement of Science, the American Psychological Association, and the Society for the Psychological Study of Social Issues.

He is a member of the Federation of American Scientists, the Cosmos Club, and Sigma Xi.

Dr. Michael and Dr. Duhl, we are very happy to have you here. Will you please proceed in your own way, in whatever order you decide upon.

STATEMENT OF DR. LEONARD J. DUHL, CONSULTANT ON URBAN AFFAIRS, DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, AND STATEMENT OF DR. DONALD N. MICHAEL, SOCIAL PSYCHOLOGIST, INSTITUTE FOR POLICY STUDIES, WASHINGTON, D.C.

Dr. DUHL. Thank you, Mr. Chairman.

My presence here as a representative of the Department of Housing and Urban Development (which grew out of my former work with the Public Health Service and National Institutes of Health) represents the growing awareness of the relationship of health and social problems to the total problems of urban living and problems of the city. Our brief statements here are really based upon our knowledge of human behavior, our concerns with urban problems in its totality, and our concerns with the problem of coherent planning in order to deal with the problems of the environment.

". . . POPULATION CONTROL IS A TOTAL PROBLEM AND A PROBLEM THAT IS AS BIG AS A WAR"

As you indicated in some of your remarks at the close of the last witness' presentation, to deal with the problem of population control is a total problem and a problem that is as big as a war. Therefore, my remarks and Dr. Michael's really are to try to put the population

control problem in a much broader context; the total environment, the environment of urban living in the United States, and even of the environment for rural living around the world. As most of us are very aware, some of the studies of population control have indicated that population numbers and population growth are directly related to the amount of education, to the total health of the population, to the income of people, to the problems of housing, and to a variety of issues of urban life.

Similarly, studies of ecology—of plant ecology, of animal ecology—have indicated the complex relationships between one organism and another, and it is extremely difficult to deal with the population growth of one particular organism without considering its relationship to all others.

"OUR CONCERN . . . IS WITH THE PROBLEM OF THE WHOLE QUALITY OF LIFE . . ."

More and more, as the world society, and especially American society, has become urbanized the total environment that we are concerned with is not the natural environment as much as manmade environment. So our concern here and our concern in the new Department is with the problem of the whole quality of life and how we can come forth with some sort of comprehensive and coherent type of urban planning which integrates the social planning that is being done in some of the other Federal agencies.

When cities are chaotic, when cities are unplanned, when cities grow completely without rhyme or reason as they have, you have all sorts of difficulties, many of which were enumerated by the previous witnesses. This kind of chaos is deeply related to problems that the Congress has been concerned about, the fact that planning has not been coordinated, so that health planning has not been coordinated with physical planning. Very often, for example, our concerns with providing services to people do not take into consideration the fact that we have to have similar concerns with the problems of transportation. We make beautiful facilities available, but we make transportation extremely difficult for people so that they cannot use them. We have situations like Watts, where the facilities available to the population in that area were more than 40 miles away and it became difficult for the population to be reached by the services that we have even in the community of Los Angeles.

So that the current plans of the Department of Housing and Urban Development, the current bills for such programs as the demonstration city proposals, which hopes to integrate the planning of the various kinds of work in education, health, and housing and city planning, seems to us of highest priority. Unless we deal with problems such as this, we shall not be able to deal with the problems of population control by themselves.

HOW DO YOU MEET THE PROBLEMS OF THE CITIES?

I would just like to refer to a few issues which I think must be considered as you talk about population control. One of these issues is the issue of how do you have a competent city? How are you able to develop an organization in a city which involves both the public and

private sector so that we can bring even the resources that we now have available to bear on the kinds of problems that exist? At this present moment, no matter how willing people are to participate, the mechanisms of our society are such that it is extremely difficult to bring people together. Therefore, we have to have planning, we have to have new kinds of arrangements with the city governments, we have to have new arrangements between the various Federal agencies in such a way that we can pull our programs together in a much more coherent package.

DUHL STRESSES DEEP INVOLVEMENT IN THE PROBLEMS OF COMMUNITY ORGANIZATION

Within the community itself, the same kind of problem exists, because one cannot start to give programs of birth control or population control to populations unless you get involved in the process of community organization. I go back in my own history to my first and earliest experience with communities—I worked in a community of north Richmond in California, which was a population of about 5,000 Negroes who lived in a slum in which sewage abounded in the streets and poverty was quite rampant. It became clear that even though birth control information was available, even though the public health nurse and the Planned Parenthood Association provided all kinds of services, until you were able to develop a community organization structure in which the people began to trust the official agencies, began to trust the nurses and began to participate in the planning themselves, they would look on the public health program as the police program rather than someone who was there to help them. In that particular experience, the Quakers—the American Friends Service Committee—set up a community organization activity which began to involve the people in the planning themselves and they began to get interested in issues not only of birth control, but of housing, of total health care and of education and the like. I think it is going to be increasingly important as we proceed in any kind of program, whether in the United States or elsewhere, to deeply involve ourselves in the problems of community organization.

". . . OUR CRITICAL PROBLEM . . . IS TO DEAL WITH THE PROBLEM OF APATHY IN OUR POPULATION"

The biggest problem, I think, which I will relate to this past issue that I mentioned, is the problem of apathy in motivation of the people themselves in order to participate. Apathy is a situation where people feel themselves unable to have any control over the environment around them and they begin to have very little interest in the kinds of facilities and the kinds of services that we have to offer. They take things as they are, they begin to exist on a very primitive level. I think our critical problem, both in America and elsewhere, is to deal with the problem of apathy in our population. I think the only way to do it is to begin to involve the people themselves in these programs of community organization and the like.

RESEARCH NEEDED ON IMPACT OF ENVIRONMENT ON FAMILY SIZE

I would just like to comment on two issues before I turn the microphone to Dr. Michael. The need for research that has been talked about should not be limited to research purely on the biological problems of population control, but should be on such issues as how the total environment has an impact on family size. I think that unless these studies are done, we shall not be able to know how to proceed. Similarly, I think more work has to be done on these broad developmental programs that I indicated.

Dr. Michael?

Dr. MICHAEL. Thank you, Dr. Duhl.

Senator Gruening, my remarks will be an echo, an extension of Dr. Duhl's. I think each of us could talk for the other, but it is a privilege to have the opportunity to say a few words myself this morning.

This matter of population control has to be seen in the light of what I know at least Professor Hauser emphasized in his comments: even if we are reasonably successful in birth control efforts (recognizing that the possibility of doing so rapidly is slight), we nevertheless have to face the reality of enormously large populations here and abroad. As well as controlling a rate at which that population increases, we have an extraordinarily difficult, challenging, and total problem of making life rewarding and fulfilling for very large populations: for our own populations living in megalopoli; for foreign populations trying to develop into complex urban environments in the emerging nations.

So my remarks, complementing Dr. Duhl's, will have to do with some of the aspects of what we need to do in order to make life valuable and fulfilled in a world of very large populations, since, even if we do a fair job of birth control, we still have very large populations to live with.

One is that we must, as Dr. Duhl emphasized, "package" our programs and our help both overseas and at home. In addition to giving birth control advice, we must provide other material and psychological resources needed to support those people, to educate those people who are using that birth control information, and to provide them with an ecology, with an environment which makes it worthwhile for them to limit the size of their families and to seek a fuller, rewarding life.

Let me give one example of how serious a situation this may be, both here at home with regard to our poor and deprived, and particularly in the emerging nations of the world, where there is now a very, very large young population. The youth have suffered gravely, both emotionally and physically, from deprivation as a result of living in an overly populated area, with too little food, shelter, and other life facilities to grow fully. These people will be coming to adulthood. They will, if our understanding of the nature of the growth of humans is correct, be people with emotional difficulties and personality problems growing out of the physical and emotional deprivation of their earlier years, deprivation derived in part from conditions of life characteristic of poverty-stricken, large, populations. Thus, we cannot assume that we have done all that needs to be done if we simply provide these countries with ways of limiting the rate at which their population grows. We have to do many other things to help them overcome the consequences of these emotional deprivations so that they

can act effectively to live fully in a heavily populated urban environment.

" . . . WE ARE MORALLY OBLIGATED . . . TO DO POSTDISASTER PLANNING STUDIES NOW . . ."

Secondly, I think, along with many others who have testified that it is very likely—not certain but very likely—that in the next decade or so, we are going to have major disasters around the world in which millions and millions of people will starve to death within a very short time.

Now, we know that after disasters, the opportunities for major changes in the way society and institutions operate are the greatest. It seems to me we are morally obligated, as well as practically obligated, to do postdisaster planning studies *now*, so that we have packages of programs in birth control, in urban development, in education, in social planning for these communities, that will be available for application to these areas when the disasters occur. Otherwise the postdisaster period will be one of total chaos with no one ready to deal with it. We have the resources—both the thinking ability and the material resources—to do this kind of planning, to be ready, and to take advantage of such a terrible disaster, to reorganize institutions and social aims so as to increase the likelihood that it will not happen again.

Thirdly, I want to reemphasize Dr. Duhl's point about the great need for social research, as well as biological research, on the implications of large populations living in very highly urbanized environments. For example, we don't really know, to the best of my knowledge, what the effects of living in crowded environments are if the environment itself is not physically and socially decaying. That is, most of the crowding that has occurred in the world, including our own society, has associated with it slum conditions, bad food, bad living and so forth. We *have* to look forward to a more crowded society with people living more closely together, more compactly, but it may be that these need not be debilitating or emotionally depriving if the society is properly designed. We have not done such studies. We need to know much more about this kind of problem.

WHAT HAPPENS WHEN MAN IS SEPARATED FROM NATURE

Another aspect that we need to know much about is one that we take for granted, and yet to my knowledge we have very little systematic information about. That is, we say (and as one whose life-long hobby has been nature study, I believe this) that it is very necessary for man to remain in touch with nature. If he is separated from it by a huge and crowded urban environment, he loses something. I think he does, but I am not certain that he does, and I don't know for certain what he does lose, if he loses anything, or if there are other ways to replace the kind of experiences that man's relations to nature in the past have provided him with by way of insight and understanding and fulfillment. To the extent that a crowded urban environment is going to cause man to lose touch with nature, we need to know what we are missing thereby, if we are missing anything, and what can be done to replace that kind of experience.

These are the two kinds of social studies that I think are very central to understanding better how to make an effective, fulfilling urban environment in what is going to be a very crowded urban world, successful birth control or not.

"THERE IS GREAT NEED . . . TO APPLY THE AVAILABLE RESEARCH . . . TO THE DESIGN OF A BETTER URBAN ENVIRONMENT FOR PEOPLE . . . HERE AND ABROAD"

The last point I would like to make is that now we do have growing new social technologies for planning, for understanding what is happening to society, and the people in it. We have not begun to make full use of these yet, partly because we still do not have the data that we need to use these technologies effectively; data about how people live, how they change over time, what the impact of various events are on their life ways in an urban society. These technologies are there to be used, they are haltingly, falteringly being used. We are not doing nearly enough with them. There is great need to support them, to sponsor them, not only to do basic research, but to apply the available research through these technologies to the design of a better urban environment for people of all sorts here and abroad.

But there is one warning that is worth introducing here. One of the reasons these technologies work well is because we do have such large populations. It becomes possible to begin to use statistical thinking effectively in planning for large populations, because they are big enough to be comprised of statistically stable factors.

WE MUST EMPHASIZE THE INDIVIDUAL, "THE POINT OFF THE CURVE . . ."

Now, many of the factors that we have to deal with in our society are indeed statistical, are matters of averages and so forth. But in the process of using these technologies, of getting average solutions to our urban problems and those problems of people overseas, we face a very real challenge: how to keep due respect for—and awareness of—the individual. The point off the curve, so to speak. We must be sure to emphasize in our research and its application, not only how we get good average solutions, but how we preserve the unique growth of the individual, who, after all, is finally what we are seeking to enlarge.

Thank you.

Senator GRUENING. Thank you very much, Dr. Michael and Dr. Duhl.

Do you think that this legislation that we are testifying on is an adequate beginning for our Government?

S. 1676 ". . . A SPLENDID BEGINNING . . ."

Dr. MICHAEL. I think it is a splendid beginning, providing that those who read the legislation and then apply it recognize, as both of us have emphasized, that you cannot deal with population just in terms of numbers, but that you have to understand population to mean the human ecology, in which many factors besides people are involved. It is a splended way, certainly, to begin to link together many activities in Government and outside of it which traditionally have gone their own way because there was no resource or agency or office that

continually drew attention to the fact of numbers of people. It can be a bridge, not only a bridge but a device for building whole new procedures for tying people to their environment.

Senator GRUENING. Do you share that view, Dr. Duhl?

S. 1676: SHOULD BE COMPLETELY INTEGRATED WITH OTHER GOVERNMENT PROGRAMS

Dr. DUHL. Yes. I do. I would like to make one brief comment. I would hope that you would encourage the people who are working on this particular program to completely integrate and tie their operations to other programs in the Government and that you should insure that this integration takes place rather than look at this as a completely separate entity, divorced from all their other activities.

Senator GRUENING. I am very hopeful that this legislation will be enacted in this Congress. When it was first introduced a year ago, it was a very much more controversial issue than it has become even in this brief passage of time. I assumed then that our experience with this would be similar to that which has been experienced by other controversial measures such as medicare, which has been before the Congress in three successive Congresses, and only on the third try was enacted. In view of the great urgency of this population problem and the obviously changing public sentiment toward it, the great support which has been given to it by President Johnson, the accession of others such as former President Eisenhower, who, as you know, was opposed to any Government participation some years ago when he was President but now feels otherwise, I am hopeful that we may get action in this Congress. We are going to do everything we can to secure it. It depends very largely on the nature of the reports presented by the two agencies involved, the Department of Health, Education, and Welfare, whose Secretary, Mr. Gardner, will testify before us next week, and the Department of State. I feel it is absolutely essential that we enlist the participation of both these agencies, one for the domestic needs and one for the foreign needs. If we were to have one and not the other, it would obviously be a lopsided approach and would subject the United States to criticism; that is, if we favored one, included one, and not the other.

THE POPULATION ISSUE—". . . THE MOST IMPORTANT ISSUE WHICH FACES MANKIND"

So I am hopeful that we may get action in this Congress. If that comes to pass it will certainly be a landmark and a milestone in a very, very, major issue; perhaps, as others have said, the most important issue which faces mankind. It is very encouraging to see the great change which has taken place in public sentiment in this very short time.

Of course, the rapidity of change is a characteristic of our time. Historians can tell us what the people of a certain country thought, let us say, in the 12th or 13th century, but no future historian will attempt to say what people of the United States or any other country thought in the 20th century, because thinking varies in every decade, and maybe on some issues, from year to year.

Dr. Duhl, I have read with great interest the paper you presented at the White House Conference on Health last November. In this paper, "Mental Health and the Urban World," you say, "The next century shall, I am convinced, write the history of whether he [man] could, in fact, devise the ways and means to live as a free, constructive citizen in a garden where abundance is both too little and too much." This is just what we have been talking about since these hearings began last June, whether man will be able to find a way to live in a world that will, if we do not act responsibly now, have an overabundance of people in the future. I believe, as do the witnesses who have spoken to us, that man will find acceptable ways to limit the overabundance that needs limiting, and so be able to increase those things vital to him that need to be increased.

I shall direct that your paper at the White House Conference be made a part of this hearing record.

I also direct that your complete "curriculum vitae" be included.

EXHIBIT 102

MENTAL HEALTH AND THE URBAN WORLD

(By Leonard J. Duhl, M.D., presented at the White House Conference on Health, Washington, D.C., November 3–4, 1965)

Compassion, knowledge, wealth and technology are pushing the boundaries of health far beyond the treatment of disease in every area of medicine. In public health psychiatry the treatment of disease is one essential task. But it is only one. The prevention of disease is an even more rigorous challenge—one that taxes the planning, programming and clinical skills of the most conscientious and imaginative of professionals. But even *prevention* does not embrace the full scope of the mental health profession today.

The interlinked forces of a total urban environment—poverty, overcrowding, unemployment, rootlessness and discrimination—have conspired to crush the man wholly, not just his health or his hope or his housing. And so, with the vast social programs of this Administration, the focus is on the whole man in his total environment. And so, too, wholeness must become the aspiration of mental health.

The *promotion* of mental health, of wholeness, is a more positive and ambitious goal than the prevention of mental illness. It implies a sophisticated appreciation of all the linkages in the social and physical environment. It implies a willingness in the profession to understand and work with the institutions that affect—promote or stunt—human development. While mental health includes the ability of the individual to withstand the stresses of the environment, wholeness is more. It is the capacity of man to live productively and creatively, freely and with joy, realizing his innate potential.

The great contribution of psychiatry in the coming years, then, will go beyond the valuable specific psychiatric services, towards the incorporation of its findings about human development needs into the process of social planning and change. Together with other professions, psychiatry will have to keep looking at the community from the standpoint of its knowledge and findings, and help to formulate the instruments to promote mental health and wholeness.

To be sure, we must have psychiatric services. And we must have them available and accessible to any citizen who needs them. But now we know that this means reaching out to those who cannot find the way to seek help. The advent of the community mental health center, where patients can be treated and maintained in their communities, has at last revised the archaic practice of isolating the mentally ill. The modern community mental health center, with its network of services and talents, should prove a strong community force for the prevention of serious breakdown. Even in the ascent stage of this national mental health program, we have seen a most positive influence in recasting the framework for discussion. The centers program is accelerating the discourse among all behavioral scientists as to just how and at what point, if indeed at all, we can intervene to strengthen and to assure the mental health and the

functioning of the individual. The centers are not the end product of a sophisticated view of mental health, but the starting point for an ecological view of community mental health needs.

The environment of the individual—into which he is born, learns, plays and grows—embraces his family, his school, his neighborhood, and the many overlapping communities that teach him the values, the defenses, the offenses, the meaning of himself and his existence. How can we not look to the whole community in our concern for the wholeness of man?

The rhetoric is easy—the ideas can be accepted in the abstract. But it is not going to be easy for the mental health profession to take the initiative for devising an effective mental health component in all social institutions and in their interaction. The success of any community arrangement, whether it is a school, a housing development, a job training program, depends upon its ability to meet a human need and to dovetail into the other arrangements that support, not thwart, a man in his development.

Even the identification of the mental health component in these programs implies an involvement by our profession that seems a far cry from clinical practice, and may therefore appear uncomfortable to many. Take the problem of alcoholism. The use and abuse of alcohol is a medical problem and a mental health problem as well. It is also a problem of cost, availability, location and numbers of bars and liquor stores, governmental regulating devices such as licensing and taxes, customs in drinking, advertising—and education. But also involved are recreational alternatives, housing arrangements, job opportunities, and more. I do not mean we try only to erase a symptom. A wide net must be cast to reach the basic causes, and many of the linkages seem tenuous even to the trained eye. The attack still has to be intense in many professional areas. Interconnections must imply depth; not forgo it.

Juvenile delinquency is another critical focal point for the joint efforts and view of many professions and for citizen opinion and action. Legal arrangements, juvenile court structure, detention, parole, rehabilitation, education—none of these can be worked on without a full incorporation of the mental health component.

But we are not thrusting the psychiatrist into the political arena. His is not the task of the mayor nor of the legislator. The community and the mental health professional *both* must see the relevance of research findings and clinical experience, and apply this understanding to community building. The application can amount to lip service—or it can be honest and thoughtful. In any case, it is not automatic. We are not dealing with engineering or even econometrics. Our predictions about human behavior and reactions are tentative and need constant revision in the light of new findings and new constellations of circumstances. Trial and error is painstaking, and the dialog among professionals or between professional and policy-maker has never been smooth. Recognition of mutual dependence cannot alone reduce the friction of confrontation.

I propose that we start with the man in need of help. A particular *symptom* of breakdown may have brought him to our attention. He may be a drug addict, an alcoholic, a juvenile delinquent, a tubercular. He may appear before us because he is unemployed and in need of work. Or he may be a perennial on the welfare roles.

Whatever the open sign of trouble, his need has many dimensions, none of which can be disregarded in the attempt to help the man become whole. They may overlap, or even be contradictory. We can no longer respond to need as though this citizen were 10 different people at once. We must organize our services so that they are in communication with one another, as well as truly responsive to human needs. Communication—flows up and down of information and data—can be formal but ineffective. Real communication depends upon mutual respect and willingness of agency and worker to look at themselves, their practice, their stated goals and rethink them, make changes, admit error and even suffer a loss of power and prestige if necessary. This is a great deal to ask, but fortunately it is possible to state that the model is no pipe dream. It is difficult to create, but it has been done in this world. The Peace Corps has become, with psychiatric service as a small part of an organization, an institution whose concern is with both the individual and with itself as a whole. Maximizing the health and functioning of all has resulted in a minimum of psychiatric breakdown. If this was needed by the Peace Corps whose members were competent and educated, how much more it is needed in programs designed to help those with few opportunities.

A joint goal of all the helping professions and the planners and the political decision makers is a socially competent community. As a nation, we have demonstrated our leapfrogging ability to create and teach the skills of rapidly advancing technology. But, "For what shall it profit a man, if he shall gain the whole world, and lose his own soul?"

Many immediate changes are needed before a socially competent community can help man benefit from the fruits of political freedom and the illumination of modern knowledge. Many of these changes are already taking place. There is concerted social action and community development. Gradually there is a crescendo of protest about social institutions that, in the name of human welfare, reinforces the dependence and hopelessness they were created to erase. We are moving toward an institution of some sort that really offers every citizens a place to start with his problem, whatever it may be. Such an institution may be patterned on the Scandinavian Ombudsman, the English Citizens Advice Bureau or other models. But in the end it will be our own—unique and very real to the people it serves. It will be the product of a fruitful dialog among the professions and the policy makers. It will be only the visible tip of the iceberg of all that is going on. Each agency and institution will have to reflect vital changes.

From my own vantage point, I know that the mental health of the people of the United States cannot depend upon the scarce supply of the psychiatric disciplines. The profession has known this, and we have long realized, too, that the breakdown point is far too late. Mental health has to be built into normal, healthy growth and development of human beings. For this reason, our consultation with, and our work with any community structure that affects the lives of people is a paramount calling upon our field today.

We have to expect one step backward for every two steps forward. We long for harmony and simplicity. But wholeness does not lie in the past. It means building a future out of all the complexity and inconsistency of the present, with all the tools we have forged.

Make no mistake. It will not be simple to do so. It will not be simple to arrive at a synthesis of services or action. But it may well be the greatest challenge posed thus far: that man's identity, his own feeling of selfhood, of control over his own destiny is not overwhelmed or lost in the shadow of the computer, the flow of goods, or the megalopolis has has himself created. The next century shall, I am convinced, write the history of whether he could, in fact, devise the means and ways to live as a free, constructive citizen in a garden where abundance is both too little and too much.

SOME ADDED REMARKS TO THE PAPER—(PRESENTED TO THE MEETING)

I have listened with great care to the themes running through the Conference, themes which a few years ago were but a whisper and now are reaching a crescendo, with points repeated over and over again, hard for any but the most die-hard to resist as he must rethink his own work and that of his chosen profession.

I can easily underscore the whisper turned rumble, but I think it is important to turn to the implications of these rumbles for a national mental health policy for our ever increasing urban America.

Increasingly, the urban world contains more and more of our population; not only do the cities contain the poor, but they also are the locus of major resources. The problems are complex, whether they be problems of government, of resources, manpower, money, services or education. No problem can be dealt with in any way but complexly. The day where we can be content with the craft guild approach is over; we must concern ourselves with wholeness, with the coordinated programs and not the specialized empires. A new pattern in programs where the psychiatrist is just part of the total operation is certainly the wave of the future, not just the new developing community mental health centers, but one intimately tied by funds, manpower, and service to the health, employment and education programs and centers in the same community, indeed, to all programs concerned with the normal development of individuals and the care of the ill, mental or physical, no matter whether this service be given by officially labeled health programs or by our confreres in law, city planning, welfare, education, or on the job.

The community action programs of the Office of Economic Opportunity are the prototypes of the new organizations that must develop and with whom any specialized service of psychiatry must find a working relationship, whether dealing with the poor or any group in our total population. Education on a job may

be more critical to prevention of mental illness than any psyhciatric service. Any total community planning must be tied to mental health.

Increasingly the Federal Government will become involved in these programs and as it does it cannot ask the local community to assume all the responsibility for putting together the specialized programs and come up with an integrated one. It must change its activities, and by that I mean decentralizing the responsibility for programs by finding new means to give funds, advice and catalytic help to the communities in a coordinated manner.

First, in the field of mental health there is a need to develop a national mental health policy, bringing together all programs of the Federal Government whether in NIMH, Department of Labor, Office of Education, Welfare, Social Security, the Office of Economic Opportunity, or even the Department of Defense; how to use a variety of funds for mental health objectives, putting Labor Department money into personnel, or Office of Education funds into specialized services concerned with mental health but tied together as an integrated operation. Employment and education counselors are as important to a mental health network as is the short supply of psychiatrists or psychologists.

Second, to do this requires more crossing over of staff, more consultation, less committee work but more cooperation on common projects, working around patient problems, community problems and special needs.

Third, no mental health policy for need, manpower and service can be divorced from the larger area of human service policy. Our mental health plans and our programs must reflect wholeness and not the craft guild empires. Total, not segmented funding must be the order of the future whether it is to the cities or regions.

Fourth, though programs must be decentralized and responsibility for local development must be local, money and assistance will continue to come from Washington. The question is, what will be the role of the centralized operation? It is easier to centralize information, but then less get this information in useable form back to the programs to be used to improve them. Standards must be set, the operators of the program must participate in the development of these standards and in setting the tone for quality control. But yet there must be teeth put into this control, we must demand the highest standards of implemenation.

Fifth, at the level of local service, I ask not for more psychiatric emergency services or other specialized ones, but integrated emergency service—a central phone number for help of all kinds, development of intake centers where a community can provide full diagnostic and evaluation facilities, using all the specialized services required, but pulled together, coordinated and providing full understanding, psychologically, socially and biologically, to the patient and to his family. When referred, the program must not lose the patient in the cracks, where the service is provided for by either the public or private sector, and indeed more such cooperation must develop. But patients can't be lost between the psychiatrists, the physicians, the educators, the welfare workers or other personnel. To develop such a program, where patients are not lost between the cracks, doesn't require one door through which everyone who needs help goes, but rather wherever he starts, whether in a psychiatric or medical clinic, in welfare or in the schools, or on the job, he can be assured of a service that is whole.

Sixth and last, all specialized services can be provided, as John Dewey suggested, with manpower to do it. With education, the best way to learn is to teach, and one of the ways to become healthy, mentally healthy, is by participating in the development of a community competent enough and with competent people, to have the kind of health programs we need. The consumer of services, the poor, the patients and our citizens must participate in the decision-making at the level of their capacity for the development of all professional programs, but they too can provide the manpower, the vast back-up group we need to do the job that must be done in the health field.

Mental health and its promotion is simply socially competent people and communities. Its wholeness in concept, wholeness in action and wholesome in the programs we must now develop. This, more than all the things we have called psychiatry, may be the challenge to our profession in the future.

EXHIBIT 103

CURRICULUM VITAE

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Office: Chief, Office of Planning, NIMH, Bethesda, Md., 496–2400.
Date and place of birth: New York, N.Y., May 24, 1926.
Marital status: Married Carola Meyer, May 24, 1951. Four children: Pamela, Nina, David, Susan.

EDUCATION

June 1942: Graduated High School of Science, New York City.
June 1945: A.B., Columbia University.
June 1948: M.D., Albany Medical College.
September 1956 to 1964: Washington Psychoanalytic Institute.

POSITIONS HELD

1948–1949: Intern, Jewish Hospital, Brooklyn, New York.
1949–1953: Resident in Psychiatry, Winter VA Hospital and Fellow in the Menninger Foundation School of Psychiatry.
1951–1953: Senior Assistant Surgeon, Public Health Service assigned to the Health Department in Contra Costa County, Martinez, California, in charge of Tuberculosis Control work; directed social work students at University of California in the study of emotional impact of an X-ray survey on a community.
1953–1954: Resident in Psychiatry, Winter VA Hospital, and Fellow in the Menninger Foundation School of Psychiatry. Assigned to the Menninger Clinic. Active in organizations concerning industrial psychiatry and community recreation services.
June 1954–1964: Phychiatrist, Professional Services Branch, National Institute of Mental Health.
March 1964: Chief, Planning Staff (now Office of Planning), National Institute of Mental Health.
1964: Board of Directors, American Orthopsychiatric Association.
1965: Trustee, Park Forest College, Park Forest, Illinois.
1965: Member, Commission on the Year 2000.
Board of Editors: Trans-Action Magazine, St. Louis, Missouri.
Board of Editors: Volunteer's Digest, Washingon, D.C.

UNIVERSITY APPOINTMENTS

July 1958: August 1961—Clinical Instructor in Psychiatry, George Washington University, Washington, D.C.
August 1961–1963: Associate in Psychiatry—George Washington University.
March 1963: Assistant Clinical Professor of Psychiatry, George Washington University, Washington, D.C.

CONSULTANT TO COMMITTEES

1956: Recreation Committee of Department of Health, Education and Welfare.
1956–1957: Research Advisory Committee, Office of Education, Department of Health, Education, and Welfare.
1957: ASPA Committee on Metropolitan Development.
1958–1960: Technical Advisory Committee, Mental Health Clinic, Montgomery County.
Jan. 1961 to date: Consultant to the Peace Corps.
1961–1963: Montgomery County Committee on Special Youth Services.
August 1961 to date: Joint Task Force on HEW Services and Housing.
1961: Advisory Committee of the National Training Laboratories, National Education Association.
1961–1963: Technical Advisory Committee—Hillcrest Children's Center, Children's Hospital, Washington, D.C.
1962: Advisory Committee, Migratory Labor, USPHS.
1962–1963: Montgomery County Advisory Committee on Youth Services.
Sept. 1962: Study Group for a National Service Corps.
1963: Chairman, Subcommittee on Cultural Deprivation—Poverty, DHEW.

MILITARY SERVICE

Public Health Service: 1951–1953, 1954 to present. Grade—Medical Director.

SOCIETIES

Academy of Psychoanalysis, Fellow.
American Association for the Advancement of Science, Fellow.
American Association on Mental Deficiency—Board of Editors, "American Journal of Mental Deficiency," 1957–1960. Councilor, 1959–1963.
American Orthopsychiatric Association, Fellow.
American Psychiatric Association, Fellow, Committee on Mental Retardation.
American Public Health Association, Fellow.
Delos Symposium—Greece, 1963–1964.
Group for the Advancement of Psychiatry (Chairman, Committee on Preventive Psychiatry).
International Association for Child Psychiatry and Allied Professions—Assistant Secretary General, 1962–1966.
Royal Society of Medicine—Affiliateship, 1960, London, England.
Society for Applied Anthropology, Fellow.
Washington Psychiatric Society.

CERTIFICATIONS AND CERTIFICATES RECEIVED

National Boards, 1949.
Licensed to practice medicine in Maryland, California, New York, and Washington, D.C.
Fellow, Menninger Foundation—certified 1954.
Certified by the American Board of Psychiatry and Neurology in "Psychiatry"—1956.

PUBLICATIONS

BOOKS

1. Approaches to Research in Mental Retardation, edited by L. J. Duhl. Proceedings of the 34th Spring Conference of the Woods Schools, Philadelphia, May 1–3, 1959. Published by the Woods Schools, 1959.
2. "The Urban Condition. People and Policy in the Metropolis," edited by L. J. Duhl, New York: Basic Books, 1963.
3. "Urban America and the Planning of Mental Health Services," edited by L. J. Duhl. Symposium No. 10, Group for the Advancement of Psychiatry, 1964.

PAPERS

1. "The Effect Of Baby Bottle Feedings on a Schizophrenic Patient." Bull. Menninger Clin., vol. 15, no. 1, pp. 21–25, Jan. 1951.
2. "A Sick City: Metastasis at Work." Search Magazine (Journal of the California Tuberculosis and Health Association), vol. 2, no. 2, pp. 196–197, July 1952.
3. "Research Report On Mass X-ray Survey, Contra Costa County, Spring 1951. Survey results—a statistical analysis. Some psycho-social aspects of tuberculosis." Prepared by L. J. Dulh and Margaret Schubert. Published by the California State TB and Public Health Association, 1952 (mimeo).
4. "Mental Health and Community Planning." Presented at the Annual Conference of the American Society of Planning Officials, Montreal, Quebec, Canada, September 28, 1955. In "Planning" (American Society of Planning Officials), 1955, pp. 31–38. Reprinted in "Jersey Plans" (Dept. of Conservation and Economic Development, Div. of State and Regional Planning), vol. 12, no. 3, Winter 1962.
5. "Psychiatry and the Community." Internat. J. soc. Psychiat., vol. 1, pp. 42–47, 1955.
6. "Mental Retardation. A Review of Mental Health Implications." Presented at the Northeast State Governments Conference, Asbury Park, N.J., March 22–23, 1956. Canad. psychiat. Ass. J., vol. 1, no. 3, pp. 107–114, July 1956. Reprinted in Amer. J. ment. Defic., vol. 62, pp. 5–13, July 1957.
7. "The Organization and Development of Research in Mental Retardation." Presented at the Woods Schools Conference, Indianapolis, Indiana, May 12, 1956. Published in "Proceedings."

8. "City Responsibilities in Problems of Mental Health." Presented at the 34th Annual Municipal Congress of the American Municipal Association, San Francisco, Calif., December 3, 1957. In "Human Needs in the Changing City." Washington, D.C.: Amer. Municipal Association, 1957. Pp. 82–92.

9. "Your Total Health." Presented at the Forty-third Annual Conference of the International City Managers' Association, Washington, D.C., October 23, 1957. Published by the Association.

10. "The Normal Development of the Mentally Retarded Child. Planning a Federal Program." Presented at the meeting of the American Association on Mental Deficiency, Hartford, Conn., May 22, 1957. Amer. J. ment. Defic., vol. 62, pp. 585–591, Jan. 1958.

11. "Planning the Physical Environment (Meeting the Needs of the People)." Presented at the Thirty-seventh Annual Meeting of the Highway Research Board, National Academy of Sciences, Washington, D.C., Jan. 7, 1958. Published as "Highway Research Board Bulletin," No. 190, 1958.

12. "Alcoholism: the Public Health Approach. A New Look From the Viewpoint of Human Ecology." Presented at the Ninth Annual Meeting of the North American Association of Alcoholism Programs, Detroit, Mich., Aug. 27, 1958. "Quart. J. Stud. Alc.," vol. 20, pp. 112–125, Mar. 1959.

13. "The Federal Government and the Behavioral and Social Sciences. A Report on Their Relations and the Use of the Behavioral Sciences by the Government in Aiding the National Interest," by L. J. Duhl and Donald Cook. Preliminary draft, November 1960.

14. "Are We Mentally Prepared for the Elimination of Poverty?" Presented at the Annual Forum of the National Conference on Social Welfare, Minneapolis, Minn., 1961. In "Social Welfare Forum," 1961. New York: Columbia Univ. Press, 1961, pp. 100–113. Reprinted in modified form as Chap. 22, "Planning and Poverty," in "The Urban Condition," edited by L. J. Duhl. New York: Basic Books, 1963, pp. 295–304.

15. "Urban Design and Mental Health." AIA Journal (Amer. Inst. of Architects), pp. 48–50, Mar. 1961.

16. Preface to "Democracy Speaks Many Tongues," by Richard W. Poston. New York: Harper & Row, 1962.

17. "Mental Subnormality." In "Traumatic Medicine and Surgery for the Surgeon" (vol. 6), edited by Paul David Cantor. Washington, D.C.: Butterworth, Inc., 1962, pp. 46–75.

18. "Research Planning in Mental Retardation." Presented at London Conference on the Scientific Study of Mental Deficiency, July 24–29, 1960. In Proceedings (vol. 2), edited by B. W. Richards. Degenham, England: May & Baker Ltd., 1962, pp. 633–641.

19. "Summary of Proceedings of Exploratory Conference on the Medical Aspects of Mental Retardation," University of Kentucky Medical Center, Lexington, Kentucky, March 8–10, 1962 (mimeo).

20. "The American Character: Crisis, Change and Complexity." Presented at the Fund for the Republic Conference on the "American Character," Washington, D.C., May 30, 1961. J. nerv. ment. Dis., vol. 137, no. 2, pp. 124–134, Aug. 1963.

21. "The Changing Face of Mental Health." Presented at the Detroit Regional Meeting of the American Psychiatric Association, October 29–31, 1959. Chap. 6 in "The Urban Condition," edited by L. J. Duhl. New York: Basic Books, 1963. Pp. 59–74.

22. "The Crisis of World Urbanization." Community development (Agency for International Development, Dept. of State), June 1963.

23. "The Future of Psychiatry in the Peace Corps," by L. J. Duhl & Robert L. Leopold. Presented at meeting of Peace Corps and the Behavioral Sciences, Dept. of State, Washington, D.C., March 4–5, 1963. In "The Peace Corps and the Behavioral Sciences," edited by L. J. Duhl, Joseph Colmen & Robert L. Leopold (mimeo).

24. "Government Health Research." "New Society," The Social Science Weekly (London), Nov. 7, 1963.

25. "The Human Measure: Man and Family in Megalopolis." Presented at Resources for the Future meeting, March 26–27, 1962. In "Cities and Space: The Future Use of Urban Land," edited by Lowdon Wingo, Jr., Baltimore: The Johns Hopkins Press (Resources for the Future, Inc.), 1963, pp. 133–152.

26. "The Peace Corps: A Historical Note on a New Challenge to Psychiatry," by Robert L. Leopold & L. J. Duhl. Presented to the Pennsylvania Psychiatric Society, Atlantic City, N.J., October 1962. J. nerv. ment. Dis., vol. 137, no. 1, pp. 1–13, July 1963.

27. "The Peace Corps and the Behavioral Sciences," edited by L. J. Duhl, Joseph Colmen & Robert L. Leopold. Papers of a meeting held at the Dept. of State, Washington, D.C., March 4–5, 1963 (mimeo).

28. "New Frontiers in Psychiatry: The Peace Corps," by Robert L. Leopold & L. J. Duhl. Presented at the meeting of the American Orthopsychiatric Association, Washington, D.C., March 7, 1963. Published as a monograph by the Mental Hospital Service, American Psychiatric Association, Washington, D.C., Psychiatric Studies & Projects [series], vol. 2, no. 1, Jan. 1964.

29. "Individual, Family, and Community," by L. J. Duhl & Antonia Handler Chayes. Presented at 55th Annual Meeting of the American Home Economics Association, Detroit, Michigan., June 25, 1964. In "Journal of Home Economics, vol. 56, no. 8, October 1964.

30. "Developing Human Resources—The Family, the Community, and the Home Economist," by L. J. Duhl & Antonia Handler Chayes. In "The Educational Record," Fall 1964, published by the American Council on Education, Washington, D.C.

31. "Social Action For Primary Prevention of Mental Disorders. Some Comments on an International Program—the Peace Corps and the Training of Workers in This Field." Presented at the 5th International Congress of Child Psychiatry and Allied Professions, Scheveningen, The Netherlands, August 29, 1962. Published in Proceedings.

32. "A Mental Health Program for the Peace Corps," by L. J. Duhl, Robert L. Leopold & Joseph T. English. Presented at the 119th Annual Meeting of the American Psychiatric Association, St. Louis, Mo., May 9, 1963. Published in "Human Organiz.," 1964.

33. "Urbanization and Human Needs." Presented at meeting of the American Public Health Association, Kansas City, Mo., November 11, 1963. Published in "Amer. J. Publ. Hlth.," vol. 54, no. 5, May 1964, and in modified form in Christian Century.

34. "A new school—K–4. A Modest Proposal." From remarks made at the Urban School Conference, Sterling Forest, N.Y., Nov. 14–15, 1963, sponsored by Education Facilities Laboratories, 477 Madison Avenue, N.Y. Published in "Trans-action," March 1964.

35. "Crisis, Adaptive Potential and the School." Published in "Psychology in the Schools," A Journal of Research, Opinion and Practice, vol. 1, no. 3, July 1964.

36. "Physical and Mental Health in the City," by L. J. Duhl and E. James Lieberman. Published in "Ann. Amer. Acad. polit. soc. Sci.", Philadelphia, vol. 352, pp. 13–24, March 1964.

37. "The University and the Urban Condition," by L. J. Duhl. Presented at a National Conference Co-Sponsored by Commission on Academic Affairs, American Council on Education and Wayne State University, Detroit, Michigan, June 21–23, 1964. In "The Educational Record," Summer 1965, published by the American Council on Education, Washington, D.C.

38. "New Directions in Mental Health Planning," by L. J. Duhl. Presented at the Urban Issues Seminar, The Urban Studies Center, Rutgers—The State University, New Brunswick, New Jersey, Feb. 26, 1965. In "Arch. Gen. Psychiat." vol. 13, Nov. 1965.

UNPUBLISHED PAPERS

1. "The Ecological View of a Psychiatrist: A Look at the Future of Psychiatry." Presented at the Twenty-fifth Anniversary of the Psychiatric Service, Massachusetts General Hospital, Boston, October 14, 1960. To be published in "Proceedings."

2. "What is Social and Community Psychiatry?" Presented at the Twenty-fifth Anniversary of the Psychiatric Service, Massachusetts General Hospital, Boston, October 14, 1960. To be published in "Proceedings."

3. "The Psychiatrist in Urban Social Planning." Presented at Colloquim, Brandeis University, Florence Heller Graduate School for Advanced Studies in Social Welfare, March 11, 1965.

4. "Mental Illness, Mental Health, and Urban America." By S. F. Yolles, R. Feldman, L. J. Duhl, assisted by A. H. Chayes, NIMH, Bethesda, Md., Oct. 2, 1964.

5. "Mental Health and the Urban World." Presented at the White House Conference on Health, Washington, D.C., Nov. 3–4, 1965.

BOOK REVIEWS

1. "On the Mysterious Leap from the Mind to the Body. A Workshop Study on the Theory of Conversion," edited by Felix Deutsch. New York: Internat. Univ. Press, 1959. Reviewed in "Amer. J. publ. Hlth," vol. 49, pp. 1717–1718, Dec. 1959.
2. "Prevention of Mental Disorders in Children," edited by Gerald Caplan. New York: Basic Books, 1961. Reviewed in "Amer. J. ment. Defic.," vol. 67, pp. 324–325, Sept. 1962.
3. "The Cry for Help," edited by Norman L. Farberow & Edwin S. Schneidman, New York: McGraw-Hill, 1061. Reviewed in "J. nerv. ment. Dis.," vol. 136, no. 3, pp. 310–313, March 1963.
4. "The Vital Balance. The Life Process in Mental Health & Illness," by Karl Menninger, with Martin Mayman & Paul Pruyser. New York: Viking Press, 1963, Reviewed for Behavioral Science Book Service. Extra selection of the Library of Science, Jan. 1964.
5. "Handbook of Community Psychiatry and Community Mental Health," edited by Leopold Bellak. New York: Grune & Stratton, 1964. Reviewed in "Internat. J. Group Psychother," vol. 15, no. 3, July 1965.

EDITORIALS

1. Precedes reports on current knowledge and the state of research in mental retardation by Richard L. Masland and Seymour B. Sarason & Thomas Gladwin. "Amer. J. Ment. Defic.," vol. 62, pp. 979–980, May 1958.
2. Precedes reports of Symposium on Research Design and Methodology in Mental Retardation, jointly planned by the Woods Schools and the American Association on Mental Deficiency Special Project on Technical Planning on Mental Retardation, Langhorne, Pa., May 1–3, 1959. "Amer. J. Ment. Defic.," vol. 64, pp. 227–228, Sept. 1959.
3. Editorial concerning the President's Commission on Law Enforcement and the Administration of Justice. To be published in the "Amer. J. Orthopsychiat.," March 1966.

PUBLICATIONS IN PRESS OR IN PREPARATION

BOOKS

1. "Casebook of Community Psychiatry," edited by L. J. Duhl & Robert L. Leopold. To be published by the Galileo Press, New York.
2. "Man the Measure," by L. J. Duhl and A. H. Chayes. For future publication.

UNPUBLISHED PRESENTATIONS

1. "Mental Health—2000 A.D." Paper presented at the Fifth Annual Mental Health Institute, Tucson, Ariz., Nov. 5, 1956.
2. "Can a Guidance Program Help Your Camp?" Paper presented at the Region V convention, American Camping Association, St. Louis, Mo., March 6, 1957.
3. "Mental Retardation in the United States." Paper presented at the Austrian-American Society benefit, Washington, D.C. (Corcoran Gallery), December 7, 1961.

PAPERS FOR INSTITUTES ON TRAINING IN COMMUNITY PSYCHIATRY (FOR UNIVERSITIES OF CALIFORNIA, TEXAS, COLUMBIA, AND CHICAGO, FALL–WINTER 1963–64)

1. "Conceptualizations of Community Medicine and Health—A Background for Training in Comprehensive Community Psychiatry."
2. "The Problems in Training Psychiatric Residents in Community Psychiatry."
3. "The Psychiatric Evolution." (Universities of California and Columbia.) To be published in "Training in Community Psychiatry," edited by Stephen Goldstein. Government Printing Office, 1965.

CONFERENCES CHAIRED

1. "Problems of Migration Among the American Middle Class." Sponsored by the National Institute of Mental Health and The Brookings Institution. Held at The Brookings Institution, Washington, D.C., December 1–2, 1960.
2. "The Role of Psychoanalysis in Programs of Prevention in Mental Health." Interdisciplinary meeting sponsored by the National Institute of Mental Health.

Held at Washington, D.C., March 16–18, 1961. Summary prepared by Judd Marmor, University of California at Los Angeles Medical School, with introduction by L. J. Duhl (mimeo).

3. National Institute of Mental Health Interdisciplinary Conference on Social and Environmental Variable as Determinants of Mental Health. Report on the conferences, "Considerations of Significance to Architects and Planners" by Byron C. Bloomfield, Pennsylvania State University (mimeo).

4. 1955 to date—Chairman, Committee on Social and Physical Environment Variable as Determinants of Mental Health.

5. Nov. 16–18, 1965—Chairman, Family Session, Planning Session, The White House Conference "To Fulfill These Rights," Washington, D.C.

Senator GRUENING. I recently had occasion to read "The Urban Condition," a book edited by Dr. Duhl. I was impressed with his introduction, his editing, the variety and merit of each of the collected papers, and the whole general substance of this book. I direct that selected parts of this book be included in the record of this hearing, as well as three articles by Dr. Duhl, one from the "Annals of the American Academy of Political and Social Science," one from "Community Development Review," and a third from the "American Journal of Public Health."

Two paragraphs in "Comparative Community Organization" by Richard W. Poston are particularly appropriate. Mr. Poston says:

"When the President of the United States says that America is going to share her storehouse of knowledge with the newly developing countries of the world, the agriculturalist immediately and automatically translates that into manure piles, compost pits, and irrigation ditches. The home economist translates it into nutrition and child care. The educator translates it into school buildings and blackboards. The construction engineer translates it into public works. And the public health doctor translates it into latrines, mosquito abatement, and water wells. Almost nobody translates it in terms of unified, active, responsible, civic-minded, problem-solving communities.

"Specialists in each discipline proceed as rapidly as possible to build up divisions, sections, and budgets around each of the splintered translations they have made, and go out to start work on projects in their respective fields, all operating separately and independently from each other. Each project becomes an end in itself, each designed to improve something which is considered important in terms of the professional values of the specialized field into which the project falls. The project that is eventually judged to be the most important, and which consequently gets the most money, depends primarily upon which division or section of the bureaucracy has been able to marshal the most pressure."

It is obvious that we must marshal our forces as we look ahead to successful legislation. When I review the statements of our many witnesses and read their commentaries—those who are working for human betterment whether they touch on housing, urban development or the physical, mental, or emotional health needs of our crowded and our poor, I am increasingly convinced that the probing of every possible facet of this problem does help to illumine with more clarity the world's population dilemma.

(The articles referred to above follow:)

EXHIBIT 104

THE URBAN CONDITION

PEOPLE AND POLICY IN THE METROPOLIS

(Edited by Leonard J. Duhl, M.D., Basic Books, Inc., N.Y.)

In this book we are concerned with one of the central problems which faces the world today: urbanization in an industrial society. While other issues, notably problems of international affairs and survival in the atomic age, are more immediate, more basic, and more critical, these are great problems which are likely to require renewed solutions and continuing vigilance with each generation. But the solutions we *now* achieve or fail to achieve regarding the urban environment are likely to have major consequences for a long future, less evident than life and death but of enormous significance for human welfare. Our immediate concern is with the problem-producing environment in which increasingly large numbers of human beings reside. And we address ourselves to some of the sources of problems in these urban environments and to some of the potential solutions of these problems.

The problems of the urban environment cannot wholly be separated from a host of other critical issues of human welfare such as education, health, and personal security. This book treats these concerns as part of the larger problem of the expanding metropolis and of the development of an urban America. All too often, a variety of problems associated with urban society are regarded as crises or critical needs in specific and limited areas of social life. For example, the importance of education in our society has lately led to many re-evaluations of our educational endeavors. Similarly, the expanding health and welfare programs have been viewed as a response both to overt and to covert inequities arising from the gap between widespread expectations and desires, and resources which are truly available to our population. Or, again, in the planning of our expanding cities, the mad urban sprawl, which leads to confusion in transportation, business activity, and taxation, has received some of the attention it so critically requires. But, for all of their special foci and their specific components, these issues have a great many common features and represent parts of a larger problem which can be conceived in terms of the development of the vast urban complexes with which we have only recently become familiar.

It is one thesis of this book that the crisis of urbanization of America is the crisis of size, of complexity, and of the large and varied administrative structures that are around us. As such, one cannot deal with it in parts. Many have bitterly attacked size and ask for a return to more rural patterns, or patterns that are more sensibly comprehended. Much as this return appeals to our sensibilities and to some of our values, it is impossible to turn the clock back or to stop the process which has resulted in this mass of organized complexity. What is now needed is a new way of viewing complexity, of viewing bigness and unravelling confusion.

Another theme is the attempt to separate and then to re-combine the rational and the irrational that is "man." On the one hand there is a widespread view that if man could be neatly compartmentalized and structured, and his society with it, man's own rationality could bring him out of the confusion and complexity.

* * * * * * *

We have looked at middle-class America, at the Negro, at new suburban communities, and at slums; and we have asked some questions. We have tried to show that some smaller projects can be prototypes for the study of much larger areas. We have even turned away from the city, at one point, to look at the college as a community; because here we can see the interrelationship between the irrational needs of man and the rational structures of the curriculum and the administrative process.

Since the context out of which the papers arose is that of mental health, we should explain its relevance to problems of the total urban environment. The traditional approach to the problem of mental illness is in terms of the indivdual patient, his family, and the institutions required to treat, care for, and cure him. The larger way to view the problem is in terms of the population from which the mentally ill come; the slum community, the poverty-stricken, the suburbs, industry, college, and so forth. Every problem has its own "community of solution." It is not always the community of the ill. When it is, we study and are con-

cerned with the hospital, as a total institution. Now it seems that we must look further: at the total community, which is at risk of becoming ill, in order to determine all the factors, individual, social administrative, and economic, that play a role. The discussion of poverty in this book is one such attempt; other papers reveal other facets of this approach. It is my strong feeling that for the mental patient, the significant community is not that of the mentally ill, but rather his primary community of identity, whether geographic area or functional group. And what holds true for the choice of "community of solution" for the non-hospitalized mentally ill is also true as we look at questions of delinquency, urban renewal, etc.

Having pointed to the complexity and to its parts, we then find that we must direct our attention to a long-neglected question: How does one take what is known and turn this into social policy and social action? The translation of research into social action is obviously one of the goals of people concerned with the behavioral and social sciences. The very process of planning, of pulling together known information, of evaluating the programs that exist, of searching for the gaps and unmet needs, of assessing the gains and losses of alternative solutions, of involving the relevant people in the planning process—all this is an important and vital part of the answer to that question.

It is our thesis that such planning must be done; we must learn which are the relevant factors that must be put into the judgmental system. We must try to learn how to reassess the hierarchy of values by which we make decisions. We must learn when the values that we associate with human well-being can and must be put above the values that we give to economic gain and physical development. It is only through this assessment that judgments can be made wisely.

Similarly, a democratic society cannot plan without involving people in the very process of planning. Admittedly, we wish to make use of expertise; but in an open society, where secrecy is at a minimum and communication at a maximum, people do and should become involved in decision-making, whether through community action, the courts, or the legislative process. It therefore behooves us to find ways of improving communication among people involved in the development of their own society, as well as to improve the process of community decision-making.

A further dilemma is how to strengthen our planning, and still at the same time optimize the freedom of individuals, groups, and cultures. We believe that the only way out of this complexity is organized rational planning in which governmental and quasi-governmental bodies, including business and labor, play important roles. Yet to some, equating planning with democracy seems paradoxical, since they claim that planning subjugates and makes people dependent. Planning in a closed society does have this effect. Planning in an open society can only facilitate democracy by reducig the inequities, maximizing the range of choice, educating people to use the choices they make, and making these choices more widely available.

These, then, are the concerns of this book. We have talked about our ecological view of complexity. Such a vantage point also represents a plea that we do not turn our backs on complexity in order to return to the more simple models, but rather that we face the complexity in all of its dimensions. We have at least the ability to begin to conceptualize the problem, to begin to investigate its parts, and to turn this information into social policy and action. I say we have this ability; but the decision to do so must ultimately be a political one.

Ultimately it is our political democratic structure that must make the decisions that will allow for the unravelling of the complexity of urban America. It is for this reason that we cannot divorce the concerns of mental health, delinquency, or even mental retardation from the broader questions of poverty, economics, city planning, transportation, or education. It is for this reason that this book, sponsored under mental health auspices, deals with mental health in so indirect a fashion. It is currently the fashion to be concerned with mental health as a total community phenomenon. This means a concern with involving the community in the prevention, care, and treatment of mental illness. However, the world of mental health is not unlike the world of city planning, economics, transportation, and the like, in its inability to see how its very solution is completely dependent upon solutions in spheres entirely foreign to its own. Ultimately, each solution must be sought within its relevant community and also as a part within an organized whole. It must be done with freedom and openness, through the same processes that have allowed America to cope with crisis after crisis throughout its history.

As each crisis occurs, whether for a society or an individual, men seek to cope with it by utilizing the skills and knowledge of the past. These skills and this knowledge may prove inadequate for coping with new problems and new crises, but we also have the opportunity to find new patterns of behavior and growth. Justice Douglas recently pointed out that in Chinese there are two characters used to write the one word, "crisis." One is for "danger" and the other for "opportunity." The crisis of urban America can force us to fall back on all the old inadequate concepts and methods of dealing with problems; or it can offer us the opportunity to find entirely new patterns compatible with our democratic structure, in the hope of organizing the mad complexity that seems to be around us. We have to face the fact that perfect solutions or cures are not to be found. What we have to accept is a continuing process of trying to cope, of a constant effort to adapt and readapt to the complexities and ambiguities as they ebb and flow in the urban scene.

Most of the papers in this book were originally presented at the Thirty-Ninth Annual Meeting of the American Orthopsychiatric Association in Los Angeles in March 1962. The opportunity to use this forum was especially welcome, because the Association itself has been increasingly concerned with the social context of its practice, and because we ourselves needed this stimulus to formulate ideas that we wanted to share with all persons concerned with the welfare of the metropolis and its people.

Primarily, however, the appearance of these papers is one culmination of the long-range program development concerns of the National Institute of Mental Health. Eight years ago, my own interest in the relationship of these many disciplines to mental health, along with John Calhoun's concern with the impact of the physical environment on behavior, led to the creation of this group. The participants are drawn from almost as many fields as they are individuals. They are psychoanalysts, public health physicians, psychologists, animal ecologists, sociologists, biologists, city planners, journalists, humanists, scientists. With all of these, however, this collection of papers still leaves out of account many people concerned with urban life—the architest, the poet, the minister, the businessman, for examples.

The group has become a community of scholars discussing mental health in relation to their own occupations and preoccupations; we are all concerned with different aspects of the same problem. Yet we can not divorce our concerns with mental health from the general objectives of our society, such as justice, education, and the general welfare.

Though each of the articles stands in its own right, it is our deep hope that they will also be seen as a whole—precisely as they have tried to see the American Metropolis.

EXHIBIT 105

PHYSICAL AND MENTAL HEALTH IN THE CITY

(By E. James Lieberman, M.D., and Leonard J. Duhl, M.D., psychiatrists with the Professional Services Branch of the National Institute of Mental Health, National Institutes of Health, Public Health Service, Department of Health, Education, and Welfare; Annals of the American Academy of Political and Social Science, March 1964, pp. 13–24)

ABSTRACT: The intimate relationship of problems of health and problems of the city forms the basis for a dynamic ecological approach to planning for physical and mental health in the city. Rational coordination is required in order to maximize the contributions of health professionals and city planners, who must work with and learn from experts in welfare, education, labor, business, architecture, economics, and related fields in their efforts to plan approaches which are generally acceptable and workable. The uncertainty which is a condition of urban complexity adds to the burden of responsibility and does not excuse inaction. People need sunlight, heat, water, air, and food to live. They also need space, recreation, education, and protection from contagious diseases and other environmental hazards. In addition, there must be provisions for human relationships and creative endeavor; politics, art, science; specialization and interdependence. These requirements are not as susceptible to quantification as bricks, census tracts, or dollars, but it would be a grave error to persist in considering

most what we can measure best. Public health services have altered the world's ecology, though the changes have not invariably been for the better. New conditions, many of which are malignant, will occur. However, a well-planned city will improve human health and growth. Total achievement of ideal conditions is unrealistic to expect, but particular diseases will yield more completely and more finally to the broad environmental approach than to a narrower one.—Ed.

Health is related to everything that affects human beings, including all of urban life. This does not make health professionals experts on city planning, but it does make them necessary collaborators in planning and imposes upon them the responsibility of working with and learning from experts in welfare, education, labor, business, architecture, economics, and so on. A whole host of persons and professions is concerned with the improvement of urban life; all have comprehensive ideals, and limited knowledge and skills. Rational co-ordination of our efforts, without arbitrary restriction, will make a tremendous difference in our contribution to society. It is part of our job to share concerns and to pool our skills to find approaches which are generally acceptable and, therefore, workable. The contemporary health worker must be practitioner, planner, politician, and, not least, scientist.

THE SCOPE OF THE PROBLEM

The manifest complexity of the urban condition demands responsible, rational planning which respects the intricate dynamic balance of ecological systems. Uncertainty will always be present, adding to the burden of responsibility, not to excuses for inaction. As we acquire knowledge and experience, quality of planning will assume its important place among criteria for judging health programs.

One way of judging the quality of a public health program is the amount of preventable disease and disability which occurs in a community. Another is the attainment of optimal levels of function in the population. In more positive terms, the merit of a public-health program rests on its ability to close the gap between the advances in medical science and their optimal application in the community.

It is often difficult to assign causes even in significant relationships, and the urban condition is no exception. Diseases are distributed in the population differentially by age, sex, occupation, education, income, ethnicity; all these and more factors, separately and in combination, provide clues to the epidemiologist and, hopefully, indicators of need to practitioners. Health services are distributed in the population differentially, but all too often, regardless of such indicators, in a pattern determined by wealth and counterproductive political factors. Our purpose is to include these factors in our thinking and planning in the most constructive way possible at the same time we work wholeheartedly for necessary changes.

In most parts of the world prior to this century, urban health was inferior to rural. Public health and other social services, along with technological changes, have now reversed the picture. Water supply and sewer systems more than compensate for the bodily needs of human aggregates. Rapid transportation brings the clinic within reach of many. Schools provide at least some surveillance and education in regard to health. While some areas of the city still concentrate and intensify pathology, the urban center also provides the miracle work of modern medical specialties. Early diagnosis and treatment mean limitation of disability to the individual and limitation of contagon where that is a concern. Of course, the same factors which keep us within reach of medical care contribute to higher totals of morbidity and mortality due to accidents, air pollution, and, perhaps, anxiety. The educational and cultural assets of the city bolster the sanity of many who are sorely tried by density, dirt, and the stresses of modern urban family life.

In health, as with other matters, the great cities have often fared poorly because of stronger rural representation in state legislatures. With massive urban-renewal programs, the federal government is deeply involved in many aspects of city life and planning. Metropolitan government is notoriously fragmented all across the country. Suburbs and cities have grown and coalesced across county and even state lines, making traditional jurisdictions functionally obsurd. Here, as in some other matters, Americans are quick to respond to a crisis but are slow to adopt the less dramatic, stable approach of planning and prevention.

Only forty-five years ago, our population was 50 per cent rural. Now more than two-thirds of the populace resides in cities, and metropolitan areas are absorbing 80 per cent of population growth and, with it, the bulk of health problems. The city's nature is also changing: the center decays, becoming a slum; many with means move to the suburbs, taking with them tax support and social skills so sorely needed by the city's institutions; urban renewal comes, replacing and dispersing a slum, but rarely using this crisis as an opportunity to rehabilitate people or to prevent further decay. City planning and urban renewal is very well motivated, but have we learned from experience? What is the social price we pay in health and other social services when we adopt this program? In isolation from social planning, it is ineffective and even damaging. We are concerned too often with the mechanics and give inadequate attention to the city dweller as a person. What is the gain from a project which clears a slum only to displace the tenants to other blighted areas where rents are within their means? What will become of the best-laid city plans when archaic tax laws deter competent developers and only encourage abandonment of the central city for the suburbs?

People develop attachments to their neighborhoods—and legislators to their statutes—old and poor as they may be, and "improvements" which disrupt these ties will often boomerang. This is not cause for resignation, however. While we can understand that slum tenants might want to stay where they are rather than move to better housing, we cannot shrug off those neighborhood conditions and resistances to change which block improvements in health, schooling, delinquency. A program of planning which is less concerned with blueprints and which more fully involves the people being planned for in the process of planning, utilizing the multiplicity of social, economic, physical, and health skills, will permit us to match our increasing understanding of human behavior with increasingly effective courses of action.

HEALTH IN THE UNITED STATES

Before turning to the relationship of health to the broader problems of urban communities, it is well to look at some of the indices now available to measure the incidence and prevalence of disease.

The United States is increasingly an urban country. The evaluation of needs and planning of services must be done less and less in the archaic political jurisdictions and more on a regional functional basis. National statistics, which we present here, reflect urban trends, but there are great discrepancies within each city: This is a primary concern.

Causes of death and morbidity in the United States are typical of the Western industrial nations generally and very different from the developing countries where infectious and nutritional diseases are still the major problem. Infections still take their toll from infants under one year, and it is also true that tuberculosis and venereal-disease rates are beginning to increase after a steady decline over some years. The leading killers, however, are the so-called degenerative diseases whose toll mounts up enormously with longer life spans, in the later decades of life.

LEADING CAUSES OF DEATH PER 100,000 POPULATION

Over-all	939
Heart disease	363
Cancer	147
Cerebro-vascular lesions	108
Accidents	52

As expected, the chronic conditions—with varying amounts of disability—are as follows:

PREVALENCE OF CHRONIC ILLNESS PER 100,000 PERSONS

Diagnosis:	
Heart conditions	3,000
Hypertension	3,100
Ulcer	1,400
Arthritis and rheumatism	6,300
Asthma and hay fever	400
Mental illness (hospitalized)	324

Efforts to establish the number of nonhospitalized mentally ill persons are fraught with difficulty. A common estimate is that 10 per cent of the population is in need of psychiatric treatment. There is no evidence that city life itself

is a cause of the high rates of pathology in certain groups: it may be that susceptibles are concentrated in the city or that factors such as poverty, social mobility, and changes in family life account for heightened risk of illness. Some observers in newly industrializing nations report an increase in psychoneuroses accompanying urbanization. Doctors in London and New York see a large amount of psychosomatic illness among West Indian and Puerto Rican immigrants, respectively. Mental illness, according to Social Security Administration figures, is the largest single cause of disability among United States workers under fifty years old (28.3 per cent of those compensated in 1960).

Accidents are the leading cause of death among all persons between the ages of one and thirty-six. For youths aged fifteen to twenty-four, accidents claim more lives than all other causes combined; five-sixths of these are males. Obviously, accidents are a public health concern; they take a high toll in death and disability and ostensibly are preventable. Note that accidents became a major concern because of the effectiveness of "death control" in the age groups between infancy and the onset of heart disease: the over-all death rates are lowest between one and thirty-six, hence accidents stand out. Before we can move effectively to prevent this tragic toll, we must understand much more about the meaning of these data and their relation to many other phenomena: intoxication, suicide, homicide, adolescent aggression, automobile design, law enforcement. Accidents may be symptomatic of a number of other processes which may or may not be amenable to benign intervention. Here, as elsewhere in public health—and city—planning, the effects of intervention must be thoroughly weighed, continuously; good intentions are no substitute for this responsibility.

That we can be concerned about accidents, schizophrenia, and geriatrics reflects the relative excellence of health in the United States as compared with many parts of the world. We need not be ashamed of relatively high rates of diabetes or geriatric disease if these rates reflect good case-finding and treatment which keeps more people alive longer. If it represents preventable disease, or the results of inadequate medical care, that is another matter. Diseases which occur predominantly after age fifty have proved very resistant to control measures. Infant mortality, by contrast, is dropping off very sharply in response to modern health practices; it is this phenomenon which has contributed most to the remarkable increase in present-day life expectancy at birth, and, of course, it accounts for the rapid net increase in population growth.

Infant mortality deserves our special attention because the Untied States ranks eleventh among the nations of the world in the measure, and we are falling farther behind. Here we can only touch briefly on the significance of this, keeping in mind that the problem, like that of accidents, has a complex of causes, none of which can be attacked in isolation from the social phenomena of which they are a part.

Currently, 25 of each 1,000 live births in the United States die within the first year of life. While this is an improvement over the past, it compares poorly with the rate of 15.3 registered in Sweden and the Netherlands. Our nonwhite minority suffers from an infant mortality rate double that of the white population: 44 against 23.2. This discrepancy is largely a reflection of the low socioeconomic status of our nonwhites: 11 per cent of the population, they comprise 25 per cent of those living in poverty. In most of the countries with lower rates, midwives under medical supervision perform normal deliveries! The United States has a higher ratio of physicians to population than countries which, in this important respect, must be judged healthier. Factors related to infant mortality include prematurity, extent and quality of perinatal care, and infant morbidity, including anomalies and mental deficiency.

President Kennedy brought national attention and legislation to bear on the last-mentioned problems as a preventive of mental retardation by means of improved maternal and child health care. There is a dearth of such care for low-income groups, and many obstacles stand in the way of full utilization of them: lack of transportation and costs of medical care, long waits, poor quality of service, fragmented services, ignorance about health matters and health services, and, by no means least, lack of birth-planning advantages with consequent hostility or indifference toward many an unborn child. Without attention to family planning, we cannot expect to deal effectively with the situation. This factor is rarely mentioned in this context, although it evidently plays an important part in other countries. For example, the countries doing well with regard to infant mortality either have low birth rates—northwestern Europe—or are less densely populated—Australia, New Zealand. Conversely, in our country, birth rates are highest among the group having greatest infant

mortality, the Negroes. Infant mortality is a crude way to keep population growth down. Birth control is evidently necessary to reduce infant mortality further, especially in the cities, where a large family is usually no advantage but, rather, the opposite.

The reduction of infant mortality is more than a health problem—as are so many other categories of pathology. Its solution will require good data collection and research, a multitude of skills—medical, social, teaching, administrative, political—including sensitivity to and respect for resistances; in short, it will require an ecological approach. There will be no panacea: no matter how good we think a measure is, whether birth control, fluoridation, or seat belts in cars, it has to be "sold" to a distributor first and then to consumers—and often compromised on the way. Some consumers, in fact, will never buy it. Only the naive would suppose that the introduction of any of these programs will quickly and easily change the situation. Here, as with every other social innovation, we are confronted with a complexity of biological, psychological, social, and historical factors.

SOME GOALS AND IDEALS

It is useful to think about some specifications of an ideal urban community in order to recognize the limitations upon translation of the ideal to anything real. Goals and ideals are not blueprints; they, like any plans, can only set directions for the complicated processes which must be set in motion to improve a community's health. Even those who have the rare privilege of starting a city from scratch must build it within some existing political jurisdiction which, chances are, will have many limiting aspects. These features, like the more ideal ones, are manmade, and it is man with whom we—physicians, city planners, politicians—are concerned. A fictional construct labeled "man" or "city," taken as a blueprint, will only lead us astray. But a plan without some notion of the directions in which we should aim would be as unrealistic as a good plan considering only physical amenities and not human ones. Many of these goals are untested by research and reflect values of many concerned with the human condition. We need not wait for research if such values are important.

People need sunlight, heat, water, air, and food to live. There can be no healthy community without these. We can be equally sure, though less precise, about space, recreation, education, and protection from contagious diseases and other environmental hazards. In addition, we must include concerns for human relationships and creative endeavor; politics, art, science; specialization and interdependence. Here again, for these most important factors, we lack hard data, but let us not repeat the error of considering most what we can measure best—bricks, census tracts, and dollars.

Let us postulate a location with climate favoring a variety of outdoor activities, breezes enough to disperse the gathering smog, and water for hydration, cleanliness, electric power, and recreation. Parks and playgrounds will make space in neighborhoods and green belts to freshen the landscape and the air. More important, though, may be the aesthetic pleasures of green areas; no research can measure its importance. If grass is important to people, we do not need research as much as vocal constituents.

Safe, efficient transportation will put physical and cultural amenities close at hand. Regulations based on the most advanced engineering techniques will reduce environmental pollution to a minimum. Automobile traffic will be rationally governed to reduce chaotic competition with pedestrians and other forms of transportation. Housing will meet aesthetic as well as structural and health criteria; youngsters must have fit places to play, toddlers their protective enclosures, the elderly some place to walk and rest outdoors. Resources for physical maintenances and renewal of the city shall be included from the beginning.

What about the city's size and population balance? The city, like our planet, cannot hold an infinitely expanding populace. More important than specifying size is regulating growth. Unless we do so, we face a time in the future when parenthood itself will have to be restricted. Right now, the United States family averages 3 children or more; an average of 2.7 would replenish the population. The difference between 2.7 and 3 accounts for an annual rate of population increase of 1.7 per cent—very substantial, especially when one considers the state of our schools, the unemployment picture, and the fact that those with highest fertility are hardest pressed by poverty.

Another factor of balance is age distribution: how much of the population is productive in economic terms, and how much dependent? Our population has

been expanding not only with new babies but with more surviving senior citizens. We must somehow increase production, education, and geriatric services. We cannot keep them apace of an indefinitely growing population, and hopefully we will achieve some balance before the physical environment compels it: by that time, our already substantial problems of health, education, welfare, employment, and recreation will be overwhelming.

The sociopolitical part of our ecological ideal is hardest to define, although there has been an increasing amount of helpful study and discussion.[1] Poverty, ignorance, and crowding are associated with high morbidity and mortality from tuberculosis, malnutrition, maternal and child disorders, untreated psychosis. Socioeconomic status has proved to be a frequent correlate of health and illness, with the brunt of pathology falling on the poor.

Recent National Health Survey statistics reveal a direct relationship between poor health and poverty—and not only among the elderly, who comprise a disproportionate fraction of the poorest. Obviously, sparkling new clinics and expensive drugs will not make a dent upon illness related to substantial living conditions. We will have to diminish the amount of poverty, which today affects an estimated 40 million Americans.[2]

As matters now stand in most cities, even those who stand to benefit greatly from existing services may have a jurisdictional obstacle course to run to obtain them. Multiple screenings and diagnostic evaluations, splitting up of family services, and arbitrary eligibility requirements are all too common. The ideal city would offer co-ordinated—not bureaucratically stultified—services addressed to human needs and potentials rather than proof of income, length of residence, and moralistic judgment. Political jurisdictions would coincide rationally with the metropolitan area: the fragmentation of city governments into traditionally sacred but totally outmoded districts is a menace to public health practice, among its other liabilities. Organization of certain services at regional, national, and international level is essential to the health of the modern city.[3]

There would be places for newly arriving migrants to live and to learn how to manage in an urban world. Much of the housing would be owner occupied, and health, building, and tax codes would be designed to motivate residents and owners toward maintenance and improvement of neighborhoods. Social and health services would be accessible in neighborhoods and also through functional groups such as unions, schools, clubs.

The threat of financial ruin by illness would be removed by programs of insurance which soundly and equitably distribute the financial risks. Provision of medical-care benefits in lieu of wage and salary increases will continue, putting health programs even more under the scrutiny of consumers—and powerful consumers such as labor and industry. The results should be an improvement in both quality and distribution of services, including preventive services, but it will require a good deal of learning and adjustment on the part of physicians and consumers alike. It appears certain that both private and governmental programs will be increasingly necessary to insure adequate medical services for those who bear the highest risk of illness or who are not adequately protected through existing channels.

The university and medical school will be judged by their community services as well as their academic and research achievements. Students, now taught in run-down city hospitals and in ivory towers devoted more to the rare diseases than the common man, will, instead, find a new balance between everyday needs of the community and the exotic clinical syndrome. Medical students themselves cannot provide adequate care, but it is true that their questioning presence definitely bolsters the quality of medicine provided by their elders. These facts argue for distributing students—and their teachers—more widely in the field of medical practice. Of course, doctors would organize their practices consistent with high standards of quality and ethics. In training institutions, bed space and personnel would be allotted to community services, teaching, treatment of selected populations or diseases, and research: In short, health facilities should carry their own weight in the community. It makes no sense, say, to invest in surgical repair of

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[1] L. Duhl (ed.), *The Urban Condition* (New York: Basic Books, 1963); Alvin Schorr, *Slums and Social Insecurity* (Washington, D.C.: U.S. Department of Health, Education, and Welfare, 1963); Lowdon Wingo, Jr. (ed.), *Cities and Space* (Baltimore: Resources for the Future, Inc., The Johns Hopkins Press, 1963).

[2] Dwight MacDonald, "Our Invisible Poor," Sidney Hillman Reprint No. 23 (adapted from *The New Yorker*), 1963; and Michael Harrington, *The Other America: Poverty in the United States* (New York: Macmillan, 1962).

[3] World Health Ogranization, *Urban Health Services*, Techn. Rep. Ser., 1963, p. 250.

rheumatic heart valves at the expense of preventive programs against rheumatic fever. Certainly it is more dramatic to restore an invalid to health than to prevent the invalidism in the first place. Our "ideal city" planners and health officials may be expected to devote much effort to dramatizing prevention or redirecting public fervor.

Mental-health programs should also have a neighborhood orientation, with appropriate facilities, co-ordinated within a larger community. This means early diagnosis and prompt treatment, with no waiting list: the timing of intervention in crises and the rational use of resources must be weighed along with depth and duration of treatment. Mental-health workers will, through consultation, assist and learn from those community care-givers who are close by in many situations of emotional distress: physicians, clergy, police, teachers, scout leaders, bartenders. There will be facilties for night or day care in addition to regular inpatient services so located that the mentally ill will not be removed from their families and the community as now often happens. There will also be halfway houses and similar arrangements for patients who need to return to the community gradually and independently. Vocational training and sheltered workshops will provide opportunities for rehabilitation. Mental-health manpower will be bolstered from the ground up with recruitment of persons with human relations aptitude from the increasing roster of unemployed workers. They will assist in case-finding, group work, and community organization, counseling and leadership, and rehabilitation. Thus we will draw upon tremendous resources of caregiving power, at the same time providing education and dignified, challenging work to those facing social and health crises, diminishing social dependence and increasing their ability to cope with problems of an urban world. The special capabilities of women must be considered. No city should countenance the breakup of a family because of a mother's illness; an ever-ready homemaker service would be available in such an emergency.

Untreated psychosis among lower socioeconomic groups is notoriously prevalent. More vigorous and equitable approaches to treatment will doubtless help, but, again, prevention is a key word. On this score, we are far from the solution; there are no vaccines or nutriments to be administered and tested as preventives of most mental illness. It is difficult to know what aspects of poverty, for example, are most damaging to health; we cannot alter factors one by one so easily as in the search for the causes of heart disease in executives. Undoubtedly, the elimination of poverty must precede the prevention of many diseases—and, inevitably, will lead to increasing occurrence of others. Some of the strengths peculiar to poverty-stricken people will be lost also, as they become more affluent, unless new challenges emerge as their horizons extend farther and farther beyond the next meal and the next day. In our quest for solutions to health as well as other problems, we must be wary of substituting one sickness for another.

Public health services have altered the world's ecology, made some of our worst maladies bad dreams from the past, though the changes have not been inevitably for the better. We can assume that a number of new conditions, many of which are malignant, will occur. Hopefully, a well-planned city will improve human health and growth. It is a false picture of life, however, which omits conflict and compromise, and so we conclude our discussion of ideal health goals with a reminder of its unreality.

THE ATTAINMENT OF URBAN HEALTH

The problems faced by metropolitan areas in planning for comprehensive health services is indeed a difficult and complex one. We have pointed out that the development of model programs in any one of many areas, though needed, cannot answer the total needs of the community. Similarly, we propose at attempting to achieve an ideal state of health is unrealistic. We have posed, therefore, a comprehensive ecological model relating health to almost all the other problems faced by metropolitan areas. This model relates health to poverty, to education, to planning and architecture, to transportation and population control, among many others. In view of this complexity, it is obvious that no program in health can achieve its goals unless it fits into other activities and programs related to it in a host of others areas. Thus the utilization of health facilities is related to the availability of information, transportation, baby sitters: what is critical is understanding something about these complex interrelated processes.

When faced with such complexity, one can be completely overwhelmed because one sees innumerable obstacles in the way of success. Another reaction

to the enormity of the task is to propose a program of saturation of all services which presumably will bring to bear the best of all programs on the problem. Such an approach is unrealistic from various points of view. No one seriously argues the feasibility of saturation programs in all the metropolitan areas. We do not have the manpower or the resources to achieve this end. What is needed is a way of conceptualizing the total problem relating health to other areas and determining what the key critical leverage points may be which will achieve the goals desired by the community. Following the ecological model, such leverage points, for health, may be in fields such as education, research, physical planning, or even economics and law. Conversely, achievements in some of these fields may only be accomplished with the development of programs in the health field.

If one's leverage points are ascertained, it is possible to anticipate what the effect of such actions would be on a host of related fields in achieving the goals indicated. Having done this, it becomes clear that one can then make a choice between interventions, making only those that are most necessary and those which will have the maximum effect at minimum economic and social cost in achieving the goals desired. The role of planning should be primarily the reconceptualization of the problem, the collection of information and ideas, and the ability to set a process in motion. The actual determination of goals must be decentralized, and the implementation of all programs must meet the specific needs of total populations and of the various geographic and functional groups in the community. This is a tall order, for we are asking for an increased responsibility on the part of the citizens to participate in the planning for their own future.

One might easily say that they are inadequately prepared to assume such a role because they do not have the skills and technical abilities of the experts. It is our contention that our responsibility in developing the process of planning is to set as the highest priority the learning by the people who are being planned for how to participate in the planning process and to take a place in the political arena. If, through a variety of processes, such as community organization and education, we can achieve the goal of the people knowing how to organize, to evaluate, and to play a role in determining their own future, they can then make use of the expert knowledge available.

Perhaps we are stating too idealistic a goal, but we feel this is the direction that we must take. The essence of democracy is the political participation of its citizens for its own welfare. The essence of education is learning how to do so. The critical problem in the field of health, as it is in the whole field of general welfare, is to bring together our current skills, knowledge, and ability with current practice. As we narrow this gap and as we meet the needs of people who know how to make choices, we will achieve a much more healthy situation.

With this as our primary goal we cannot lose sight of the need for dealing with specifics. Services are necessary for treatment. In this country, services will continue to be given by a variety of means, both private and public. No single system of health services will ever be attained. However, what is critical is the need for persons in the community who can see to it that, whatever people desire in terms of service, they can get and make use of the available resources. There has been much talk about multipurpose workers or urban agents in the community. Their job is seeing to it that the consumer and services are brought together and that, in fact, use is made of the array of services we now have. In fact, the services that we have are very diverse, and, if they could be utilized well, we might have a co-ordination by means of the urban agent where we cannot get it on the administrative level.

It is clear that, in this broad ecological model, no matter how good the planning or how much we achieve, solutions to problems beget new problems. As one medical philosopher suggested, the health professional's main function is to help the patient choose the most socially acceptable set of symptoms. Another way to put this is that, as we solve the problems of infectious disease, we are left with problems of the chronic ones. As we deal with problems of nutritional defect, we will encounter problems of vitamin poisoning.

The problem of health, viewed in an ecological framework, is a never-ending process. Each time society achieves new values, produces new devices, we will have new problems. It is critical, therefore, since we are a nation in favor of progress, to develop organizations capable of meeting unforeseen problems. This means flexibility, rather than bureaucratic scleroses. This means the ability to let organizations die and new ones be created.

At this moment, in the field of health, the technical advances have been so great that physicians and the technical experts too often are concerned with the hardware and the science and too little with the needs of the human being and the population. In this instance, the problem of health is like the problem in many other areas. Technology has moved fast, leaving the human being at the wayside. It is important, therefore, to create new organizations, such as the Peace Corps, which offer the opportunity for work on a person-to-person basis. To have similar organizations on the domestic scene, either nationally or in the form of local voluntary groups, seems to us to be of highest priority. The need to maintain the human touch with children in institutions, as homemakers in homes where parents are sick, or in hospitals where the patient is waiting to recover from an operation, or even waiting to die, is essential. One of the most important things about our country is concern for the individual. In our technological advance, we cannot forget that, and, therefore, within the metropolitan area, we need more programs encompassing the human dimension.

Thus, it is important that our health concepts and vital statistics grow in subtlety as well as completeness, so that we can determine the interrelationships of ulcer, hypertension, accidents, suicide, crime rates, poverty, in large and small population groups. Fortunately, this has begun in some areas where urban centers are gathering information data banks on many related problems. Failing this kind of effort, our action programs, like some examples of urban renewal, may push down one ugly head of pathology only to have another pop up somewhere else.

Our suggested approach, rather than utopian, is an ecological one. We look at the available measures, but, before launching the attack on a particular disease entity—as though such a thing really existed—we examine the functional universe in which the phenomenon exists and address ourselves to what we find. By focusing narrowly on particular diseases, we alter the ecological balance anyway and perhaps create new problems. We believe that the particular diseases will yield more completely and finally to this broad environmental approach, just as the symptoms of an illness yield to treatment of its many causes. This is a tentative approach, not a dogmatic answer. It will be useful if it makes us as respectful of socioeconomic facts of life as we are of the biological and as skillful in community planning as we are in opening the heart.

Epidemiologic studies repeatedly point to socioeconomic factors in illness. Medical-care studies indicate vast differentials both of quality and quantity of services utilized by our city dwellers. To reduce the high levels of sickness occurring among the poor will require far more than the noblest efforts of men and women in white. A planful, energetic, humane attack on the phenomenon of poverty will necessarily go hand in hand with reduction of its many accompaniments: disease, social incompetence, apathy, and illiteracy. While illiteracy is primarily an educational problem, it is hard to conceive of an illiterate being healthy in the terms we have used. Mental health, especially, brings into focus the need to include education, labor, leisure, economics, and social history into proper relationship. The ability of our cities to integrate relevant disciplines in the area of health services will be another qualitative criterion of achievement.

In this paper on health and urbanization, we offer no blueprint. We have pointed to some critical issues in urban health, perhaps with a new perspective for those who have tended to look at health in more usual terms. We have not forgotten that in the field of health it is often necessary to treat symptoms. We have not suggested that there is any lack of need for *ad hoc* programs to deal with emergencies and with the many ills of our urban society, but we do hope that, as more knowledge comes and with information, we can come up with a new conceptualization, a diagnosis, and perhaps an understanding of the very complex etiology of the disorder. By doing so, we will be able to go beyond the symptoms of our urban ills and with the combined resources and skill of the health and other professions as well as the people who are being planned for, we may be able to develop ongoing solutions.

While the process of urban planning and coping with problems of health is a complex one involving social, economic, political, as well as health problems, the health worker, modest but unabashed, ought to be in the thick of it.

EXHIBIT 106

THE CRISIS OF WORLD URBANIZATION

(By Leonard J. Duhl, M.D., Consultant on Urban Affairs for the Secretary of the Department of Housing and Urban Development; Community Development Review, June 1963, pp. 3–5)

Meeting in Greece, a group of thirty-four persons representing a wide variety of scientific, political, planning, and other intellectual disciplines signed the Declaration of Delos pointing to one of the major crises facing modern man, the urbanization of the world.

The participants at Delos, like thoughtful persons throughout the world, have increasingly become concerned by a process which has increased the world population, world urban areas, and brought the remainder of the population where it can no longer be isolated from the technological and social changes brought about by this shift in living patterns. Where the technological age has created extensions of man's physical abilities, the age of electronics and communication has brought the world into each man's consciousness in such a way that he is overwhelmed by the information he receives, the choices he can and cannot make, and by the course of distant events that affect him as if it were in his neighbor's yard.

There is little disagreement about the nature of the crisis. We are faced by a far-reaching social revolution with implications beyond anything that occurred in the industrial revolution. We must begin a search into our society and ourselves if we are to turn the threat to our survival into an opportunity for man. "Crisis," Justice Douglas reminded us, in Chinese is written with two characters: one for danger, the other for opportunity.

The danger that we face is multiple: will we fall back on old solutions to new problems; will chaos result as we find inadequate social tools to cope with the complexities involved; will solutions offer themselves that are authoritarian and handed down from an elite that in a Platonic sense are the only ones who know how to rule the incapable; will man know who he is and what he is capable of, or will he continue to feel impotent in the face of oppressive complexity? These are only some of the questions that can be raised. There are many more, and they deserve to be asked, answered, debated, and revised.

The principal question posed by the Declaration of Delos is whether responsibility for the answer lies with the experts, or with the majority of those who are affected.

For the past eight years, a similar group to those assembled in Greece have been meeting within the United States under the auspices of the National Institute of Mental Health. Where the international meeting arose out of the concern of nation builders and city planners, the American one started with the concern with man and his relationship to his environment. If we are to be concerned with the mental health of the population of the United States as the National Mental Health Act states; and, if we are to prevent psychological and social breakdowns in our people, what are the relevant concerns? Increasingly, the work of the planners, the architects, lawyers, economists, and governments affect man's development, the onset of disease, and his ability to cope with problems within himself, his family, and the outside community. The work of this group, as well as those of the many independent workers in the behavioral and social sciences, has continually focused on all aspects of human behavior, biological, social and institutional. Each step that has been taken has forced us to take a new look at man. He is not just a psychological being, an economic creature, or any other narrowly defined problem. Sometimes a disease cannot be looked at in the simple terms of cause and effect; it is part of a complex process.

Psychoanalysts, and others, have turned inward and have implied that if man can find an answer within himself he will be able to find answers on how to deal with the world outside. At the Delos symposium this view was typified not only by psychoanalysts but by a Pakistani lawyer, Dr. A. K. Brohi, former foreign minister and leading international jurist. Dr. Brohi reminded his colleagues that all the changes one makes in the outside world are of little consequence, if man does not understand his whole being, if he has no control over his feelings, and does not know who he is, or what he has to offer his family and society.

One is easily reminded that if on a magic Monday morning all the demands of the American Negro community are met, there would be left the question as to whether the Negro and the White could cope with the choices they are faced with.

Indeed, would they know what the choices were, and would they be prepared with the skills of living, including the psychological and social ones, needed to face this newly achieved world.

The question of finding oneself is not purely a personal one. It is one that implies a greater challenge. Can we as a society provide the opportunities and the social institutions which can start the process within each man so he knows who and what he is? The Peace Corps, it has been suggested, is a demonstration of man's ability to give of himself to help others. Perhaps more importantly, it offers the opportunity to the rest of the world to give an experience which allows the Volunteer both to work jointly with others to find solutions to problems and to find resources in himself that he did not think he had. The returning volunteers are evidence, that his experience has started many of them on a new road to their own identity. They have rethought their own personal goals and careers. They are turning for more education so that they can offer themselves and their skills in a meaningful way in solving some of the problems brought about by this complex world.

But the Peace Corps is one small organization making a small dent in the problems of the world and its citizens. Attempts must be made to find further social innovations which offer similar opportunities to other parts of our population. The necessity of teaching the skills required for urban life was pointed to by Lyle Fitch, former city administrator of the City of New York. He pointed out to the Delos symposium that the in-migrants to the city have the least ability to make use of the opportunities it offers for a good life. They do not know how to make use of the elemental facilities that middle class residents take for granted.

Ellen Lourie, a community consultant in New York writing in "*The Urban Condition*," the book produced, by the participants in the NIMH sponsored group, reports on experiences in Puerto Rican Harlem, where slowly a small population with help can learn these simple but essential skills. How to save money, how to find a lawyer and protect your rights, where to turn for medical and welfare aid, how to learn a vocational skill so a man can find a decent job were the essentials of her work. But with a cry of an enraged and socially concerned woman, she asks how all this work can be of help, if the very governments and agencies whose job it is to give such help, are caught up in bureaucratic sclerosis, stimying any full resolution of the critical issues.

Marc Fried, looking at the Italian Sicilian slum that was once the West End of Boston, points to the impact of major social policies on a stable population whose mutual supports aid them in attaining a comfortable life. To take away a home by urban renewal, tearing up the social fabric of their society, leaves a gap in social relationships and a grief for the lost home.

Consider then the needs of man satisfied in the small towns and villages of the past. Consider the city-states of Greece, 5,000 persons living an integrated total life. Consider the lack of confusion, the ability to know where one stands in relation to the known world. Consider too the minimal amount of communication limited by geographic distances easily traversed by man. And then imagine what happens when this is rapidly torn apart, with the people thrown not only into a new world but one where the very signals of life, the clues to behavior and to social norms are unknown; where the language, though the same tongue, is foreign, and where the big impersonal organizations ruled by figures one cannot affect impinge upon one's life, without recourse or rebuttal. Consider then the challenge.

The challenge is to create an urban world that meets the need of man with a technology that does not get out of hand with a life of its own controlling man's destiny against his will. Consider a society that cares to meet the challenge of complexity not by returning to the simple life of the past, but by reforming its institutions, its buildings, its educations, its jobs, and its goals to meet man's needs for a meaningful life.

The urban condition of the world is a challenge to our ability to modify, to cope, and to adapt to the world. It is a challenge to our ability to raise children by family and society to meet this complex world. It means mechanisms to meet complexity.

In meeting with people from different countries it is increasingly clear that these problems are worldwide; they are the problems of Algiers, and the emerging nations; it is the desegregation crisis in the United States; it is the challenge of delinquency and the unemployed. It is the need for new governmental relationships like compacts between states for education, and between nations in the Common Market. It is the question as to whether you are a Negro with

ties to Africa or a new Negro American. It is the challenge faced by the U.N. and other multinational organizations dealing with economic development. It is a challenge to the communication experts, to the city planners and the politicians. It is the challenge to create new cities not bound by geographic boundaries but by new ones where the functions of complex living can be provided for, and at the same time provide on a human scale for the essential needs of men, women and children.

Our job is just beginning. The dialogue highlighted at Delos, and the declaration proclaiming the problem are just reminders that we are in the midst of a complicated process which will be with us for a long time to come.

America has demonstrated in the past, not only that it has the technical skill to adapt to a modern world, but that in crisis it has been able to modify itself and its institutions and take a new look at itself. As President Kennedy reminded us in his American University speech, now is the time to do this reassessing. It is time to look both at our own problems and at our relationship to the rest of the world.

We have a language of complexity, and ways to cope with the technical sides of it. Our machines, our computers have demonstrated their abilities. McNamara has shown that man cannot only control the confusion and technology but he can shake loose the sclerosing bureaucratic institutions that find only old solutions satisfactory. Industry has shown that it has the know how with technology. Other countries can adopt this technology, expand it and use it to produce bombs and machines to produce more. But with a social revolution the skills required are social skills. America has that language not only in its behavioral sciences but in its people. Consider the President's speech. Consider too what John R. Seeley calls the psychoanalization of the American unconscious, the seeping in of concepts of psychoanalysis and social science into everyday life.

By contrast the American skills in this area are found less frequently elsewhere. To show the way by coping with our own society, our own urbanized America, our own poor, can serve as better guides to the social revolution than all the technology and arms that we export.

The urban crisis fraught with danger, is an unprecedented opportunity for man to show that what we want to have happen we can. We can lead in this social revolution by designing a new urban society, and we can give man the opportunity to come to terms with himself by finding his untapped skills, and how all the people, not just the elite, can plan for man.

EXHIBIT 107

URBANIZATION AND HUMAN NEEDS [1]

(By Leonard J. Duhl, M.D., Consultant on Urban Affairs for the Secretary of the Department of Housing and Urban Development; American Journal of Public Health, vol. 54, No. 5, May 1964, pp. 721–728)

Throughout the world people are increasingly concerned with the problem of urbanization. More and more persons in government, in the specialized disciplines of architecture, public administration, public health, and psychiatry have become aware that changing patterns of our society are having a marked impact on their work. The changes that are occuring affect the kinds of problems we are increasingly going to face as well as the programs to be developed to cope with them. To point up the human issues that are involved—complexity, identity, and poverty—I present five illustrative vignettes of urban life faced by those of us concerned with health in the urban world.

In a northeastern city, in a part of town known to be run down, where the city administration has been concerned for years about the high costs of city services and the need for urban renewal, in-migrants tend to congregate. In this city the in-migrants are Appalachian whites looking to the city to meet their needs and those of their families. They move there with a minimum of possessions; an old car and often a relatively large family. They go where the kinfolk are with a dream of better jobs and opportunity. When they arrive in the city they

[1] This paper was presented before the First General Session, Association Symposium, of the American Public Health Association at the Ninety-First Annual Meeting in Kansas City, Mo., Nov. 11, 1963.

have difficulty finding jobs. There is already some unemployment, especially among unskilled workers. For these in-migrants the only opportunities that offer themselves are the jobs open to those with little if any training. They are ill-prepared to meet the demands of modern industrial society.

Along with the difficulty of finding adequate jobs, they also have the problems of getting along in an urban environment. Children get sick; medical care is needed. The public health nurse is a frequent visitor. The house is cold and drafty, the landlord turns down the heat, and there is little recourse because they have minimal ability to use the mechanisms for justice which might help in such a situation.

Almost universally prejudice surrounds them because they do not have the niceties of behavior that are required to live in the better urban community. They may be too loud, too dirty, have inadequate standards of behavior, or maybe they are just so atypical that they are foreign to everyone around. They live where they can, in poor surroundings, often taken advantage of in their own world. Social and health agencies usually find them, but only after a pattern of nonfunctional urban living has been well established. This is one aspect of the culture of poverty—the invisible poor—whose life offers little opportunity to break the bonds that hold them enchained to their world. Most of the "do-good" agencies though empowered and perhaps even responsible for their care, would rather choose cases in which there was hope, and which did not offer the tremendous difficulties, the foreign ways, the resistance to changing to "middle class" ways of living, and which do not present problems of eligibility or complexity. These people cannot take the opportunities offered.

The second vignette has to do with another kind of urban slum, but one that is relatively long established. Often the people in such an area are eastern European, Latin, or other foreign immigrants living together in an environment of extended first, second, and third generation families. This is a world common, and at the same time foreign, to the American city. Outside people may go slumming there because of unusual foods, smells, color, and "adventure" but most often they are frightenend by it, or else they do not see anything but the outer appearances. There is mystery, strangeness, and a way of life that is not typically white Anglo-Saxon, Protestant American. Government and private agency workers who are concerned with a community such as this are often middle-class Americans. Usually they come from a group who are well adapted to the American way of life and who often look back on their immigrant past more as history than as a value that could be useful to anyone in the present.

In one of these communities—and indeed the same thing could be said for others—the quality of family warmth, love, affection, and mutual support was universally observable. As problems arose, family members, friends, or even the policeman who had been there for 30 years could be of some help in resolving them. Though this area is know to social agencies, there is a greater tendency by the population to turn towards those close to them for help, rather than to strangers.

Because this part of town is in the central part of the city, land values begin to skyrocket. The city is concerned with taxation, its costs of services, and a desire to bring new life to the center. It prepares and succeeds very often in developing a program of urban renewal. People are displaced and relocated. Families are broken up because of the unavailability of large homes, or apartments where they can live close to each other. Many are asked to go to housing projects, which, in their sterile institutional nature, cannot recapture the urban village quality, color, or even smells; thus the new life for many is a problem.

The third vignette concerns the family who brings a child to a psychiatric clinic. The child has been brought only after the family has gone through a maze of bureaucracy, helping hands and services which, all too often, leave them on the doorstep of the psychiatric clinic because of sheer frustration. The pathway to such service is long and arduous. Many are referred, some are diagnosed, fewer are treated.

Once the child and the mother arrive at the clinic, and if an adequate evaluation of the total situation is made, the problem unfolds as one of apparently infinite complexity. The family is in contact with many agencies, each concerned enough to be involved, yet few ready to assume responsibility of tying together the scattered parts of the complicated story. The school is faced with a reading difficulty; the health department with a crippled child and multiple pregnancies; welfare with problems of family support; the husband either has an unskilled job or has recently been laid off. Retraining for new jobs has been thought of, but somehow the idea has never been adequately dealt with. Other brothers and

sisters are dropouts from school and problems to the courts and to a myriad of agencies. This is the chronic poverty stricken problem family, claimed to be so difficult that one cannot adequately cope with it. If, in addition to all other complications, the family is Negro, more difficulties may very well be present.

My fourth vignette takes us to the office of the mayor of a major American city. This is a progressive city with grave concerns about its ability to meet the needs of its people. It is a city in which the middle- and upper-class have moved to other political jurisdictions in the suburbs. They come to the city for business, and perhaps for recreation and culture.

The inhabitants of the central city are poor. There are Negroes and other minority groups contained in large pockets of the city, with health and welfare problems and a high cost of social services. There are the slums—urban blight with plans for urban renewal. At the mayor's disposal are the taxes that the city receives. The money that he might be able to have reallocated from the state treasury is always difficult to obtain because the urban areas somehow never have received a fair share in the distribution of state funds.

Currently, state plans are under way for new mental health services, public health programs, and changes in the school system that will affect his city's budget. How do these plans relate to all others he is faced with? In his city, the mayor is under pressure to increase services in every area. He must change the work pattern of his hiring policy so that he does not segregate and yet, he does not know where to recruit from. He is forced to consider plans for desegregating schools that are segregated primarily because of residential patterns.

Within recent months the Housing and Home Finance Agency, through the Community Renewal and the Urban Renewal Administrations, has given him funds to plan for comprehensive services and redevelopment of his city. Highways are to cut a gash through a major portion of the city. On top of this, the president's Committee on Juvenile Delinquency has asked that he plan comprehensive services for the delinquent. I could go on and on.

The mayor is faced with an infinite amount of pressure, minimal funds, limits on his jurisdiction, and the awareness that his problems are not just city problems, but are regional, statewide, and national. He has a wonderful staff, albeit poorly paid, the usual number of political hacks, and he must come up with answers to questions as to how to allocate his funds and energies wisely, without displeasing too many people while getting re-elected in the bargain.

My last story concerns a distraught father and his youngest son. During a lifetime he has achieved success in business and family. All his children have gone to school and done well, save for minimal difficulties with them that he correctly suggests are common to all families. Good schools, opportunities for scholarships, and the best colleges were offered each child. Suddenly, with no warning his son says, "I'm not going to college." "I'm not sure of the reason, but I don't think it's what I want."

Further exploration of the reasons only unfolds a confusion about who he is, what he wants to do, the meaningfulness of his activities, the unknown future, no appreciation of the contribution further education can make to him, and a feeling that the only thing worth doing is having a job driving a truck in order to have some money, and participating in the sit-ins and freedom marches.

Though there is much in this story that can be elaborated upon and discussed, the critical question is the relationship between this boy's lack of identity, his attempts to find it, and a search by many others throughout the world for the same thing.

"Is what we have what we want?"; "Let's get what it is we want . . . it's clear and understandable": "When we right the injustices, we will then look to the other things we need to live in the new found world."

Perhaps as with any minority group, adolescents are the "have nots" in the world, unhappy with others' achievements for them, and the need to find new answers, through the uncomfortable processes of searching, involving themselves in the critical problems around them, finding in them a possible solution to their problems. The search is on for the "have nots" through peace marches, freedom rides, rebellious adolescent demonstrations, and volunteer programs.

The problem of the adolescents, however, is not theirs alone, it is a problem of society as well. Do we provide the institutions, values and leadership that give an opportunity to answer questions of personal identity? Are our schools, colleges, voluntary organizations, and jobs providing meaningfully for the needs of these young people?

In each of these five stories, I have perhaps overstated my points. What I have reported is not universally true, for there are indeed successful in-migrants; urban renewal has, in fact, been extremely helpful to many of the people who are invloved; clinics faced with chronic problem families have been able to contain and pull out of the complicated mess a solution for child and family; many cities have indeed begun to find patterns of solution to the complexity of government; and finally, many adolescents do find a meaningful role for themselves in an urban world.

Time has been spent outlining these five illustrations because they portray some of the human factors we must face in our concern for urbanization. Human needs unfulfilled take many forms, from the extreme cases of mental pathology to the difficulties of the average man coping with the new patterns of urban life. Each is related to the central themes of my remarks—complexity, identity, and poverty.

The human problems that I am concerned with are obviously not those of the central city, nor even the metropolitan area, though it is in these areas that most of them manifest themselves. What I am calling attention to is the much broader problem—the impact on the individual in the urbanization of the world. The five illustrations that I have outlined are the current end products of the processes that are taking place, not only in the U.S. but all over the world in the changing relationship of man to his environment.

Recently 34 representatives from countries all around the world met in Greece and, in sharing their experiences, pointed to urbanization as the most important problem that we will have to cope with in the present and in the years to come. Wherever one comes from, populations are moving into cities in great numbers. This mobility, coupled with the explosive growth of population, would in itself present enough of a difficulty. Yet it is not only the physical changes that are our concern but what happens to the individual and his view of himself and his world.

Major revolutions that have taken place throughout history have affected the changing relationship of man to his environment. We are completing the era of vast technological development in which the main emphasis has been on the extension of man's ability to build, construct, and create. Man has extended his arms and his legs, adding, through technology, a wide variety of tools. These developments undoubtedly will continue but will be overshadowed by another area increasing ease of communication.

Increasingly, man, through electronics, has made a new kind of revolution which forces him to take as major, a look at himself. For as man has extended his ability to receive information via a variety of electronic devices—notably, telephone, telegraph, radio, television, and other similar devices—he is faced with a paradoxical situation. He has extended his consciousness so that the whole world is now sending information to him. Thus, on the one hand it is easier to communicate with his fellow man and to find out what is happening elsewhere on the globe, which might possibly affect him. On the other hand, this tremendous increase of information is now being received in both an overwhelming and, in many cases, a confused way, leading to the difficulty for the individual of sorting out impressions and evolving a position or identity for himself. If this results in a review of the self, it suggests major changes in his self-perceptions and his relationship to the outside world and with it new roles for himself.

To return to the past for a moment, to a small village in which the contact with the outside world has been minimal, one easily sees how the input of information, though diverse and to each person all-inclusive, tended not to be overwhelming because the community over a period of years has developed its own system of values, perceptions, and ways of coping with a variety of information. Thus a child growing up in such an environment is not faced with the problem of making value choices but one in which commonly held ones were reinforced, and the identity of the self was clearly presented.

On the other hand, a child and an adolescent growing up in the current world cannot comfortably rest, since the values transmitted by parents, the things learned in school, in church, and from friends often are contradictory. Puberty is, in fact, being pushed back to an earlier and earlier age. Studies show that in the last century the age of menarche has dropped four months per decade, from 17 to about 12 and one-half. As they grow children face an adult body sooner, a postponed social maturity and an increase in the possible choices open to them with increased availability of funds, mobility and sexual license.

Children are thus faced with a dilemma. How do they make choices of values? How do they choose directions? Do they have skills to go one way or another? Are the skills learned in school going to be helpful in meeting their needs? Are they prepared to make use of opportunities that offer themselves?

This problem has many manifestations. The world is faced with a major social revolution of such proportions and intensity that it is quickly enveloping everyone. Everywhere this social revolution is taking place in one form or another, whether it is the Negro revolt asking for equal opportunities under the laws of the land and fulfillment of the decisions of the Supreme Court, or it is the Negroes of Angola rebelling against the years of tyranny of the mother country, or the adolescents of Poland and Russia bringing in American jazz, American abstract art, and raising questions that conflict with the values of their elders, or whether it is the impact of Southern Europeans or Scandinavian culture heretofore unaffected by such in-migrants, or the multitude of adolescents of the Far East looking for new answers for themselves and rebelling against authority.

In each instance we are faced with this problem of human identity: Who are we? What are we? Can we find a livable solution to this problem? Do the institutions we have provide the skills necessary to cope with a society? Do they give us an opportunity to contribute meaningfully to it, or are we just slaves to machines, or to bureaucracy? How to answer these questions is the real challenge of urbanization.

What I am talking about is man's ability to deal with complexity. We are asking for a way to deal with the great complexity. What occurs so easily in coping with complexity whether for the individual, an institution or society as a whole, is the search for simplicity and the hope that simple remedies will solve the problems at hand. We see around us much evidence of this point of view. We hear people say, "if we can prevent desegregation we will be able to stem off the problems." On the other side we hear the cry that all will be well if we are allowed to attain the goals of desegregation. Another solution offered by those with differing political views is that an all-inclusive ideology can blueprint an evolving society. In none of these cases do I feel the solutions will be found. Complexity must be dealt with in a complex way with new tools, new organizations, and differently trained people. We must allow for constant amplification and revision of existing programs.

My thesis is that, despite the psychological temptation of man to deal with complex problems simply, it will not work—not for desegregation, nor for physical or mental health.

The problems of urbanization are thus not simple ones. All around us we see a variety of symptoms of pathological urbanization. We find the inability to maintain traffic flow through cities. We see how this difficulty alone affects the availability and use of health and welfare resources, the relationship between the working husband and family, the problem of smog, as well as many other problems related to health. Similarly, when concerned with comprehensive planning for mental retardation, we are faced not just with the effects of brain damage but the problems of social class, of educational opportunity, family attitudes, social welfare resources, nutrition as well as clinical and preventive service. If we are to look searchingly into the question of economic deprivation, we are concerned with social, psychological, and educational deprivation as well.

The unskilled poor have neither the skill nor the ability, socially or economically, to make use of the technological advances in the health field or any other field. It is not that innate ability is not present, but rather that they have not learned the skills of living required to cope with this increasingly complex society. Their inability to deal with funds, or food choice are but two examples, which lead quickly to nutrition difficulties, perhaps pregnancy complications and retardation. In broad epidemiological studies of urban population we consistently find that the unskilled poor are the population-at-risk for a wide variety of disorders, including mental retardation. We are not faced with a simple public health question but one in which our total society is involved.

A dilemma faces any of us as we try to cope with problems of this population group. On the one hand, when people are incapable of coping with the complex world there is the temptation of the expert to offer solutions and prescriptions to follow. This is a notion of an elite, which through history, from Plato to Lippmann, has taken many forms. A look at the "haves" makes it increasingly clear that, as man's productive skill and consciousness have extended, it is the

elite that has used this extended consciousness to know what is going on. To the unskilled and undeserving poor, utilizing the fruits of man's technology and health is hardly a dream. And yet we cannot afford to leave them out of our considerations of urban complexity.

Let us differentiate between my use of the appellations, the deserving and undeserving poor. The deserving poor were defined by George Bernard Shaw as those who, given a chance, can succeed. These are the in-migrants to the city who year by year become part of the upwardly mobile population learning how to use the benefits of society. They enter the labor force—they may remain in a ghetto, or blend into suburbia—but they have arrived. Their income, made sufficient by moonlighting, allows them to buy into the discount and credit paradise. They can acquire things, or an education for themselves and their children. They can make choices, and do. These newly arrived, upwardly mobile people may not make the same choices as I would but they defend their right to do so, and prefer it to any other. They buy medical care plans, use doctors, get glasses, and increasingly use psychiatrists. What more can we want? They do not necessarily support fluoridation or all public health measures, nor understand how studies of goats can help human beings. To some they are considered impediments to the public health.

Unlike the undeserving poor who have lost or perhaps never had the ability to dream, or the initiative and skill to make the moves into the complex society, the deserving working class poor make political and social choices, becoming part of the ebb and flow of decision-making that is American democracy. The poverty stricken are indeed stricken with the inability to act and get what they want.

A new day is dawning, the "have nots" are demanding equality of treatment, whether in Accra, Bagdad, Birmingham or Boston—whether Negroes, the poor or just adolescents. They may not achieve their goals but a period of readjustment and rethinking is ahead.

We are thus faced with a problem which is baffling. How can we create institutions in our field of health or others that will prepare the people now being planned for, to assume a participating role in the planning process of democracy itself. If, as our society becomes wealthier—psychologically, socially, and economically—and indeed it has, how can we increase the opportunities of an increasing part of the population? The problem is not one just of availability and distribution of resources but rather the ability to make use of choices that can be increasingly available.

This is our challenge. The problem is not simple. How, in the face of the change of urbanization, complexity, new institutions, and requirements, can values inherent to our society be maintained. What values despite all technological development, are essential to human development? What values do special minority groups have which must be maintained? Both for those concerned and the broader society many of the values of the remaining American urban villages containing minority groups should be held on to—closeness, mutual support, child care. Children at their early stages of development require an environment which is relatively stable and free of the confusions and of the complexities of the world.

As one follows generations of migrants into the urban areas, they become urbanized, and Americanized; they demand the trappings of society as well as the services and the way of life that our society holds dear. Unfortunately, too often, in the process of urbanization, the result is homogenization; people give up the values which were important and essential to them. Minority groups give up their culture as they pass through generations of urbanization and Americanization. Children give up older persons who were their parents and early guides as they move further and further into the new world of which their parents are unaware. The problem that faces us, therefore, is how to maintain those values which are important and yet help people meet some of the new problems by achieving a balance between these two needs.

I do not pose a simple problem for the health and other professions. There are, in fact, no simple solutions. To make one choice opens new ones for the present, and new alternatives for the future. But in doing so we close the doors to other areas. How many doors we are willing to close in order to open new ones is a problem faced by every human being.

Similarly, as we create programs in health, we cannot achieve the goals of health without being concerned with the goals of housing, of urbanization, of education, and other problems faced by our society. We are faced with a prob-

lem of how, if we are to attain and maintain the human values, we evaluate various program choices and objectives and achieve a properly balanced program.

City after city is faced with the broad metropolitan problems. The Supreme Court decision leading to the reapportionment of the state legislatures may very well be heralding the beginning of the new "city-states." New political authorities and arrangements, metropolitan in scope, will develop. Increasingly, metropolitan areas are beginning to participate in comprehensive social, health, and physical planning. They are just at the beginning but the tools are at their disposal. The problem faced in this new social revolutionary development is how to reallocate our funds in such a way as to achieve the goals of human betterment that have been set. These new tools should alert us to the problem of utilizing the marginal dollar and marginal manpower. It should help us raise the question whether we are using manpower wisely, whether we should retrain our existing professional manpower and create new disciplines, or in fact abolish some of the institutions.

It is my firm belief that until we include the "skilled amateur" into the broad array of people concerned with meeting human needs, and specifically in public health, we will continue to fail to meet the needs. And yet we can give many examples where professionals have undercut any use of new skilled amateur manpower. Moreover, until we develop further the concepts of either the urban agent or the multipurpose worker, we will be unable to tie together the myriad available services. Until we do so, we will not be able to help the individual caught in the complexity of services which, though available, are unusable because of lack of knowledge on how to work one's way through the maze of organization. We must reorient, and reevaluate our services so that we meet not only the needs of the middle and upper classes but also the needs of the people whom we least understand. Our health services are geared to the needs of the middle class. We must adapt our services and begin to teach people in the lower socioeconomic group how to make use of these services. Either way, it is a challenge.

In many cities solutions are coming. The human being is not completely lost. The social revolution I have referred to is making changes in institutions, and in the people themselves. That we can do so is a recognition of our strength, our adaptive potential in meeting complicated problems. Human beings tend to get lost in complexity—bureaucratic sclerosis tend to calcify both organizations and men, limiting their ability to cope with change. Urbanization is but a symptom of the changes now occurring. Its brick and concrete offer enough calcification to our landscape. What is needed is the warmth and concern that get through from one human being to another. Our inventions must now be social ones—new patterns of community organization, and new uses of human beings.

Senator GRUENING. Do we have an unending amount of space on earth? Should we rethink our land planning policies? Author George Macinko has some pertinent thoughts on this and I shall place in the record at this point excerpts from his article entitled "Saturation: A Problem Evaded in Planning Land Use." And what happens when rural citizens crowd the cities? These problems are not confined to the United States and other highly developed areas. Author Aaron Segal discusses them and the need for family planning in his article on urban unemployment in Africa which appeared last year in Africa Report. I direct that it be inserted in the record at this point, directly following the Macinko excerpt.

EXHIBIT 108

SATURATION: A PROBLEM EVADED IN PLANNING LAND USE

(By George Macinko, Science, July 30, 1965, pp. 516–521)

THE ENVIRONMENTAL CONSEQUENCES OF SUSTAINED POPULATION GROWTH HAVE YET TO BE RECOGNIZED BY PLANNERS

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The operating assumption that a continuing demand for space can be met by ingenuity in allocation of space is untenable for a limited space subject to a

continuing demand. Such space allocation is a delaying or rearguard action that slows down the ultimate confrontation. It does not "solve the problem," and may in the long run have adverse effects. By appearing to be a solution, it temporarily hides one of the most pressing reasons for public concern—the fact that open land is in danger of becoming exceedingly short in supply.

The analysis above is not intended to deny the usefulness of recent land-planning proposals but, instead, to delimit more closely their capabilities and limitations. Measures such as cluster housing can provide certain real advantages in the economics of street and utility layout and in the arrangement of buildings to fit the physical characteristics of their sites, to name but a few. But to hold that, in the absence of some measure of population control, cluster housing creates "permanent open space" (*10*) is to practice self-delusion. Consider, for example, what happens to a county-wide area when all its land is under cluster development. How do you keep land between clusters open unless you stop all further growth? And if you are willing and able to limit growth, then land planning takes on an entirely different character and many new opportunities present themselves.

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It is my belief that, when faced with the space situation that a long-term perspective on growth discloses, planners all too readily subscribe to the popular supposition that the ecological law of space saturation under favorable conditions is inapplicable to man. However, the fantastic growth of world population over the past half-century (*16*) indicates that this law does have relevance to man, and, in fact, is more relevant to man than to any other species, for man has developed and is in the process of developing powers that will enable him to extend conditions favorable to his increase throughout the entire planet.

Fremlin (*17*), in a chilling essay, reminds us that progress in technology (allowing for vast increases in human numbers) does not negate the fact that population growth has limits, but, instead, merely emphasizes that mankind faces the collective choice of determining at what population density it wishes to call a halt—or, in the absence of deliberate choice, of having limiting conditions imposed on it. It is thus seen that the law will be inapplicable to man *only if* man chooses to make it so by exercising his power of foreseeing the consequences of his actions and by then taking appropriate measures to avert those consequences he deems undesirable.

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Reconstruction of land planning must begin with recognition that any land-use policy that completely evades the issue of population control can be no more than a temporary luxury which can lead only to an increasingly painful reckoning in the not-too-distant future. The problems posed by population growth will not disappear if they are ignored: their solution in a democratic society must come by way of common consent, and this will require time and understanding; therefore the sooner these problems are confronted honestly and directly, the more likely it is that measures designed to alleviate problem situations will be successful. In the area of land planning such a confrontation would, it is hoped, reveal the true nature of the land problem by showing that the chaotic land situation cannot be attributed solely to sprawl resulting from development of large, single-family lots, but, instead, would show that the amount of available open land at any time depends on both (i) the size of the individual bites taken from a stock fund and (ii) the number of biters.

EXHIBIT 109

THE PROBLEM OF URBAN UNEMPLOYMENT

(By Aaron Segal, Nairobi, Africa; Africa Report, April 1965, pp. 17–21)

As more and more rural Africans are propelled to the cities by the magnetic attraction of cash wages and the rising expectations generated by independence and the spread of education, urban unemployment is now added to the problems with which governments must somehow cope. Although the extended family system cushions the problem of sheer survival for the jobless ones who have employed relatives in the towns, the influx inevitably intensifies the problems of overcrowding, slum living, and the breakdown of hygiene and moral standards. Moreover, the frustrated job-seekers provide ideal raw material for political demagogues urging radical measures. In East Africa, the situation is particularly acute in Kenya.

There are several reasons for the increasing imbalance between job-seekers and jobs in Nairobi, Mombasa, and other larger population centers of Kenya. Primary education is widespread here, and expectations are accordingly high. Meanwhile, the country has been in an economic recession caused by the partial withdrawal of European confidence and capital before independence in December 1963. The number of employed fell from 597,000 in 1959 to 535,000 in 1963, while total population is increasing by three percent annually, one of the highest rates in the world. The urban population is growing at a rate of six percent a year, twice the overall rate. There is, moreover, less organized village life in East Africa than in the West African states, and thus fewer restraining bonds on the movement of rural youth. Another factor accelerating the population flow to the cities in Kenya (as compared to Uganda and Tanzania) is the limitation on subsistence agriculture imposed by the severe land-shortage and overcrowding in certain rural areas.

The Kenya Government is fully conscious of the problem on its hands, and of the inflammable political potential of this growing army of unemployed. It was noted in Nairobi that jobless urban workers have already played major roles in overthrowing governments in Togo and Congo-Brazzaville. The Kenyatta government's first major measure after independence in 1963 was to reach a tripartite agreement with the employers' federations and trade unions stipulating increases in employment by 10 percent in the private sector and 15 percent in the public sector in exchange for a one-year moratorium on wage increases and strikes. This unusual approach caused the number of unemployed registered with the government Labor Exchanges to jump from 10,000 to 205,000 in one month. The register was formally closed after work had been found for 45,000 who were either landless or previously employed.

The short-term attack of the tripartite agreement was followed up by specific attention to unemployment problems in the new development plan for 1964–70. The plan proposes the creation of 144,000 new semi-skilled and unskilled jobs (as well as others requiring higher qualifications) between now and 1970 through total investment of $150,000,000 per year, of which 60 percent, or $90,000,000, is expected to come from the private sector

DIMENSIONS OF THE CRISIS

The dimensions of the crisis which lies ahead can be seen by concentrating on just the number of young men coming into the economy each year. The high rate of population increase means that an estimated 51 percent of the present population is under 16 years old, and that about 720,000 young men will reach the age of 17 in the next six years. Nearly half of the 720,000 will be primary school-leavers (*i.e.*, will have completed eight years of schooling) and will be conditioned to think in terms of cash incomes.

At best, perhaps 36,000 of the 720,000 will find places in secondary schools and will thus be temporarily deferred from the ranks of the unemployed. Perhaps 280,000 will live in areas where there is unused arable land or where the amount of good land available per family is sufficiently high that they can go into farming on their own—making the optimistic assumption that they will be willing to stay on the land. But at least 400,000 will come from already overcrowded areas where there is little or no land to spare; they will almost certainly want to go elsewhere in search of paid employment or better opportunities for subsistence farming.

The development plan anticipates that various forms of non-wage employment will provide for this balance of 400,000 young men. It lays down a number of programs which lead to the projection that "unemployment . . . may be a less significant problem in 1970 than it is today." Analysis of these programs does not support this conclusion—not because the plan is over optimistic but because the planners have underestimated the full implications of the population increase.

Irrigation projects listed in the plan should provide support for an additional 12,260 self-employed on the basis of four acres of irrigated land per family. Beyond irrigation projects now under way, the plan envisages that studies on the Tana River Basin irrigation project will be completed by 1970. Until this is done and the necessary finance for the scheme obtained, it cannot be expected to provide new employment; moreover, the Tana River project will probably not be ready to receive its first settlers before 1974.

The plan also anticipates increased self-employment from such land development projects as reclamation in the semi-arid areas, a tsetse clearance scheme on

4,000 acres in Nyanza, and minor schemes for presently unoccupied land in the Lumbwa Valley, the Kwale hinterland, and the bracken zones of the Central Region. The plan makes no estimates of the capital costs of these schemes, some of which are still under study. Even if all these essential projects get underway by 1970, they would provide self-employment for only about 5,000 persons.

The new National Youth Service hopes to enlist 7,000 young men annually for a year's training and work on self-help and agricultural projects. This is a most worthy program, but one year does not seem to be enough to provide the education, skills, and experience required if the cadets are to increase their chances of obtaining wage employment on completion of their training. Assuming some previous academic instruction, at least two years are required for sound modern farm training and more carpenters, bricklayers, and painters. Thus, the Youth Service will at best take a small proportion of young job-seekers off the labor market only temporarily, without giving them any long-term hopes of obtaining gainful employment. We might optimistically hope that 10,000 would be given a new lease on life by 1970.

The plan also allocates $550,000 to "several programmes to develop and finance African entrepreneurs." No figures are given on the number of jobs already created by such programs in Kenya, but it is known that some have suffered from a high default rate on loans. Based on this experience, more careful supervision is planned and they are being broadened to include commercial education for the African participants. Although it is very important to provide this kind of encouragement to African participation in commerce and industry, now dominated by Asians and Europeans, it will primarily enable existing African entrepreneurs to extend their businesses rather than increase the size of the entrepreneurial class markedly.

Another means of increasing self-employment will be through programs to increase agricultural productivity, thus enabling more persons to be employed on (or at least live on the products of) the same amount of land. This kind of program is costly because it requires intensive instruction and supervision, agricultural credits for fertilizers, seed, improved stock, and other services. And unfortunately, the areas of Kenya where the greatest increases in productivity are taking place are the very areas which are most overcrowded and where the pressure of increasing population on the land is greatest. Holdings have often become so small that no amount of productivity will enable them to support more persons; the only hope is to lift the meager standard of living of those now working such plots.

Since the settlement schemes under which former European-owned farms are being purchased for transfer to African smallholders are in their infancy, the data available on the economic significance of this effort warrants only tentative conclusions. A reasonable estimate, based on action to date, would seem to be that 30 percent more persons are being supported on the same land at comparable or higher levels of income. Working under extreme pressure, it was possible to settle 10,000 families during 1964, which amounts to some 20 percent of the annual increase in population. Of these, 3,000 families can be recorded as a net addition to the land over and above the number of persons formerly employed as farm laborers.

The government has announced its intention, assuming that Britain will provide the funds, to purchase an additional 2,000,000 acres, which should nearly complete the transfer of the formerly non-African high-potential land used for mixed farming. The remaining non-African land will be ranching areas or intensively cultivated estates. While this latter land may be purchased in due time for political reasons, it cannot be expected to provide gainful employment for more people as it is already highly developed.

LIMITATIONS OF PRESENT PLANNING

Adding up these figures, we can project that the plan will take care of perhaps 59,260 of the 400,000 young men looking for employment or land by 1970—12,260 in irrigation projects; 5,000 inland development; 10,000 in the National Youth Service; 2,000 in various entrepreneurial ventures; 10,000 through present land settlement schemes; and 20,000 on the additional 2,000,000 acres. Thus the plan, though an imaginative and bold effort to tackle the unemployment problem, will leave over 34,000 new unemployed by 1970 even if it fully succeeds in reaching its specific goals. Clearly, Kenya's war on poverty must be extended to new dimensions.

The first need is for a more comprehensive land-use policy. The semi-federal constitution adopted just before independence safeguarded land on a regional and tribal basis and sharply restricted the authority of the central government to introduce planned redistribution of population outside the former European-owned areas. The new presidential constitution which came into effect in December 1964 gives the central government new controls over land and land-use however, and the Ministry of Agriculture has already begun to take over mismanaged or unused farms in the national interest. The objective is to redistribute population throughout Kenya for optimum use of arable land.

Even though the amount of arable land with at least 30 inches of annual rainfall is limited, there is enough to make about three acres of good land available per head of the present population if it were evenly distributed. As the development plan states, "one million acres of good land is both unoccupied and idle, while much of the occupied land is under-developed and under-utilized." The constitutional change is crucial, for much of this land is held under tribal tenure by the Masai and other pastoral tribes which have traditionally scorned crop-growing.

Although the government has officially instituted a back-to-the-land movement to induce the urban unemployed to return to their family homesteads, the only punitive measure now in force is a threat to confiscate the farms of persons who leave their land to seek jobs in the towns. Since a high proportion of the job-seekers come from overcrowded areas and are relatively landless, the back-to-the-land movement cannot really affect them unless it puts specific land at their disposal. The government has been understandably reluctant to resort to the unpopular *kipande* or pass system, whereby anyone unable to show proof of employment can be deported from the town to his rural home. This system, used in South Africa and in Kenya during the Mau Mau emergency, has recently been introduced in Tanzania to clear Dar es Salaam of unemployed.

An effective national land redistribution policy will require a detailed inventory of all agricultural land, whether under freehold or communal tenure, establishment of suitable cash crops for each sub-location, and scientific appraisals of the potential population each segment can support at certain levels of income. There would have to be provision for land which falls short of a prescribed standard of land-use within a certain period of time to come under government direction. Land taxes on unused or misused land could help finance the policy and government would necessarily retain authority to purchase misused land for settlement of other Kenyans, paying full compensation to the previous owners. During the long preparatory period needed for completion of the detailed land-use study, some of the known areas of high-potential unused land could be designated for settlement by school-leavers organized in cooperatives and trained in modern agricultural methods.

BIRTH CONTROL ESSENTIAL

But even more than a national land-use policy and planned redistribution of population is needed to avoid the eventual social tragedy of uncontrolled urbanization and the day when the number of persons in Kenya exceed the finite capacity of the land and industry for gainful employment. The other requirement is for an immediate curb on the population growth rate. Mushrooming population means that the economy must run faster merely in order to stand still; increases in total output provide only the same, not an improved standard of living.

Kenya's development plan proposes an annual economic growth rate of 5.7 percent—of which three percent is absorbed by the increasing population, leaving only 2.7 percent for both increased consumption and investment. A lower rate of population increase would mean more food in the individual's stomach, more cash in his pockets, and more government revenue to help improve his lot. Experience in Asia and Puerto Rico suggests that obstacles to birth control are more human than technical. The overriding problem is to induce individuals to want to limit the size of their families.

Although the privately-managed Kenya Family Planning Association has provided instruction at urban clinics for some years, little research has been undertaken here on changes in attitudes toward family size since the days when high infant mortality rates, the need for additional hands in subsistence agriculture, and sometimes the incentive of daughters' bride-price made large families valued. There is some evidence, however, that the climate of opinion is changing with the new sense of responsibility about educating one's children and the extension of wage employment and cash-cropping.

As part of its nation-building program, the Kenya Government is considering means of emphasizing family responsibility for ensuring proper standards of nutrition and education for each child, and the desirability of postponing marriages until there is an adequate material basis to start a family. It is also rethinking its pre-independence pledge to finance primary education through taxes rather than fees, for fees are a specific negative inducement to restrict the size of families while the tax burden hits fathers of large and small families equally.

The technical means available for birth control are sterilization, abortion, contraceptive pills, and devices for both sexes, and the rhythm method of contraception through abstinence. The latter is the only method approved by the Catholic Church, which has an estimated 1,000,000 adherents in Kenya. Of the other possibilities, only contraceptive pills and devices would be socially and morally acceptable to Kenyan non-Catholics. The limited experience of the Family Planning Association indicates that, at least on a small scale, concrete results are possible within Kenya using these methods alone.

The government could encourage birth control by providing for instruction on procreation and family planning in the upper standards of primary schools, by making contraceptive devices and pills available at little or not cost at government hospitals and dispensaries, by encouraging community development and other social workers to provide adult education on family planning, and perhaps by a modest financial contribution to enable the existing Kenya Family Planning Association to extend the number of its centers.

Some quarters are urging the government to incorporate in the revised edition of the 1964-70 development plan the modest goal of reducing the population increase from the present three percent to 2.5 percent. This would, it is pointed out, enable projected family income to rise by $104 instead of $84 by 1970, though it would take many years more to affect the unemployment problem.

A comprehensive long-range land-use policy and a serious effort to halt the population explosion would give new meaning to the present development plan's attack on the unemployment and urbanization problems and the tripartite agreement. Although the menace of unemployment and the population explosion are more serious in Kenya than in most countries of the continent, Africa still has a unique opportunity to profit from the experience of its Asian neighbors and tackle these problems before they reach unmanageable proportions.

Senator GRUENING. Thank you very much. We will stand in recess until next Wednesday.

(Whereupon, at 11:40 a.m., the committee recessed, to reconvene Wednesday, April 6, 1966.)



EXHIBIT 110

Witnesses who testified on S. 1676 before the Subcommittee on Foreign Aid Expenditures, April 6, 1966 were: Mr. Arnold H. Maremont, Dr. Joseph P. Martin, Dr. William Vogt, Hon. John R. Bermingham, State Senator from Denver, Colo., aand Dr. Stephen Plank. (Pictured, left to right, seated: Dr. Vogt; standing: Senator Gruening, Subcommittee chairman; State Senator Bermingham, Mr. Maremont, Dr. Plank, and Dr. Martin.)

POPULATION CRISIS

WEDNESDAY, APRIL 6, 1966

U.S. SENATE,
SUBCOMMITTEE ON FOREIGN AID EXPENDITURES,
COMMITTEE ON GOVERNMENT OPERATIONS,
Washington, D.C.

The subcommittee met at 2 p.m., pursuant to recess, in room 3302, New Senate Office Building, Senator Ernest Gruening (chairman of the subcommittee) presiding.

Present: Senator Gruening.

Also present: Herbert W. Beaser, chief counsel; Carole Ransom and Harriet Eklund, editors; Mary A. Miller, clerk, Subcommittee on Foreign Aid Expenditures; and Laura Olson, special consultant on population problems.

OPENING STATEMENT OF THE CHAIRMAN

Senator GRUENING. The hearing will please come to order. At this time I direct that the photograph taken today of our distinguished witnesses be made part of the hearing record.

I have to announce that an executive committee meeting of the Interior Committee has been called for 3 o'clock, and I may have to absent myself briefly during that period. I hope that will not interfere with the plans of our witnesses.

This afternoon the Government Operations Subcommittee on Foreign Aid Expenditures is holding its 24th public hearing on the population crisis at home and overseas. Thus far 84 men and women have contributed to this ever-expanding population dialog on S. 1676, my bill to coordinate and disseminate birth control information upon request, here and abroad.

Since we met last on March 31, 1966, President Johnson has again publicly expressed his concern about the population problem.

SOLUTION TO FOOD PROBLEM SHOULD INCLUDE POPULATION CONTROL

In his message on economic aid to India, which he sent to the Congress on April 1, the President said:

"The Indian Government believes that there can be no effective solution of the Indian food problem that does not include population control. The choice is now between a comprehensive and humane program for limiting births and the brutal curb that is imposed by famine. As Mrs. Gandhi told me, the Indian Government is making vigorous efforts on this front."

The subcommittee has been following the public comments on population by President Johnson with a great deal of interest. His statement of April 1, 1966, is the 20th time the President has commented on this problem since his election as President.

Today the Subcommittee on Foreign Aid Expenditures will receive contributions to the population dialog from concerned Americans who have come from Chicago, Ill.; Cleveland, Ohio; Denver, Colo.; Boston, Mass.; and New York, N.Y. I think the geographical distribution is a clear indication of the growing national concern about the population crisis.

Before we begin today, I should like to announce that the subcommittee will hear from the Secretary of Health, Education, and Welfare, the Honorable John Gardner, tomorrow at 10 a.m.; on Friday at 10 a.m. the Administrator of the Agency for International Development, Mr. David Bell, will contribute to the population dialog; and on Monday, April 11, at 2 p.m. the Under Secretary of State, Mr. Thomas C. Mann, will appear before the subcommittee.

All of these hearings are open to the public and visitors are welcome. The hearings will be held in room 3302 of the New Senate Office Building.

BIOGRAPHIC STATEMENT: ARNOLD HAROLD MAREMONT

Our first witness today will be Mr. Arnold Maremont. Mr. Maremont was born in Chicago, Ill., August 24, 1904. He received his Ph. D., from the University of Chicago in 1924 and his J.D. from the same institution in 1926. He and his wife Adele have three children.

He is president of the Maremont Corp. of Chicago.

Mr. Maremont is director of the Mental Health Society of Greater Chicago and a member of the executive committee of the Illinois Association for Mental Health. From 1962 to 1963 he was chairman of the Illinois Public Aid Commission. He is the first vice president and a director of the National Association for Mental Health and a member of the board of the Institute for Psychoanalysis. He is active in Planned Parenthood-World Population.

He is interested in the development of culture in the United States and serves on many boards related to cultural improvement, including the New York City Center Opera & Ballet Co. He is also a governing life member of the Art Institute of Chicago. He is a member of the board of trustees of Southern Illinois University and Bard College in New York State. He is a member of the Standard Club of Chicago as well as other clubs and makes his home in Winnetka.

Mr. Maremont, we are very happy to have you. Will you come forward and proceed in your own way?

STATEMENT OF ARNOLD HAROLD MAREMONT, PRESIDENT, MAREMONT CORP., CHICAGO, ILL.

Mr. MAREMONT. Senator, I have read much of the testimony you have heard. The arguments of the demographers, that we are threatened with a population explosion both in the United States and throughout the world, are unchallenged. I do not know of a single competent authority in this field who disagrees with the premises or the conclusions.

LOWER INCOME—HIGHER BIRTH RATE

The existence, today, of not one but at least six proven methods of assisting families in avoiding unplanned births is a fact.

The desire by mothers, and mothers and fathers, to avoid bringing more children into the world than they can educate and support is confirmed in polls taken by such respected authorities as Gallup, Louis Harris, and National Opinion Research. Experts in the field of social service confirm these conclusions again and again. Though women of the lowest incomes desire small families their families actually are larger than those of middle and upper income.

The reasons for this inconsistency are equally as clear. The ability to control the size of one's family depends on literacy, knowledge of how to control parenthood, and the money with which to do it. It is true that outside the United States there is also a lack of medical or paramedical competence.

But why is legislation necessary by our Congress? Will education solve the problem? Will the States solve the problem? Given enough time, I believe we will develop a society in the United States that will be literate enough to utilize birth control, but what happens in the interim? What happens to the children born but not wanted? To the extent that these children represent a higher risk of delinquency, to the extent that they are members of families dependent on welfare, our society is deeply involved, and must be equally committed to finding solutions.

ILLINOIS GIVES BIRTH CONTROL AID TO MOTHERS ON WELFARE

My primary competence as a witness here is as an interested citizen who has been involved in welfare administration. During part of 1962 and 1963 I was chairman of the Illinois Public Aid Commission, which since has become the Illinois Public Aid Department. It was during this period that a family planning program was initiated in Illinois through the welfare machinery. Today, Illinois does have such a program, providing birth control assistance to all mothers on welfare requesting it.

Without going into a lengthy review of the developments in Illinois, I believe it is of some importance to this committee and to Members of the Congress to understand how this policy came about. When I first proposed in 1963 that family planning services be made available to all mothers who wanted it regardless of marital status, there was some opposition and the legislature decided to appoint a commission to study the matter. During the period of the commission's study, the policy adopted by the legislature permitted family planning assistance to be provided only to married welfare recipients. The commission, composed of eight Catholic lawmakers and seven non-Catholics, studied the issue for 2 years and in 1965 reported back to the legislature. Their recommendation last year was that family planning assistance be extended to all mothers on welfare over the age of 15, regardless of marital status. This recommendation was approved by overwhelming majorities of both houses of the Illinois Legislature. Thus the policy which I first proposed 3 years ago has been in effect in Illinois since last July.

In the past 2 years, I have spoken on the subject of birth control and the population explosion in 14 States in the United States and abroad. As vice chairman of Planned Parenthood-World Population and a director of International Planned Parenthood, I have visited New York, Michigan, Minnesota, Illinois, California, Massachusetts,

Ohio, Nebraska, Wisconsin, Georgia, Virginia, South Carolina, Pennsylvania and Texas.

FAMILY PLANNING IS ECONOMIC AS WELL AS MORAL SOLUTION

Since I am also a businessman by profession, my special emphasis is, of course, related to dollars and cents. Let me make it quite clear that the issue of family planning is primarily a human question, a moral question and a social question. Your committee has heard copious testimony from respected authorities.

It is not at all out of order to count costs—dollars involved. In Cook County, Ill., during 1964, about 15,000 babies were born to mothers who are recipients of welfare. Eighty-seven percent of the mothers receiving ADC assistance in 1964 were unmarried, or not living with their husbands. At Cook County Hospital during 1964, about 12,000 babies were born out of wedlock. I believe you would concede that it is a conservative statement to say that at least 10,000 of these births would have been avoided if the mothers had known how to avoid them, or had received birth control assistance.

At this point I want to state categorically that mothers who are relief recipients do not give birth to children to receive additional relief payments. I have heard this canard all over the country. It is sheer fabrication, a downright lie. I believe it was given currency originally by racists who were anti-Negro and who wanted to equate cruelty with the poverty and illiteracy that our society had created. To accuse an indigent mother of purposefully bringing a baby into the world for the few cents a day extra she will receive is to make her subhuman and without the capacity to love her children or to want to provide for them. Sure, there is a small proportion of such women; there is a small proportion of them who have cancer, tuberculosis, and mental illness, too, but indigent mothers are still mothers, and they want for their children the same good things that you and I want for ours.

COST OF ONE CHILD RAISED ON WELFARE PAYMENTS FROM BIRTH TO AGE 17 IS $7,000

My research on the subject has confirmed the fact that the cost of supporting a child born into a welfare family who remains on welfare until he is, theoretically, self-supporting at 17, is approximately $7,000. This figure varies little among our industrial States. This figure constitutes food, clothing, lodging, medical care. It does not include education, nor the extra costs which are produced by the higher incidence of delinquency. What I am saying is that in Cook County, Ill., each time an unwanted child is born into a family on welfare, the State and Nation have incurred a liability of $7,000 payable over the next 17 years. If we assume that of those 12,000 babies born in Cook County—and the figure varies from year to year—that 10,000 is a reasonable estimate of the births which could have been avoided that year, then 10,000 multiplied by $7,000 is $70 million for the year of 1964.

Even if you were to argue that we cannot take 10,000 and that a more appropriate figure would be 8,000 or 5,000 or 3,000, it is still easy to see that we are not talking about annual savings of hundreds of thousands of dollars, but of millions, and in just one county of one

State of our country. I do not have to point out to this committee that these millions could be used very effectively right now for urgently needed programs of rehabilitation, job training, housing, education, and other efforts to reduce poverty and dependency.

Next, suppose that for all of Illinois we were to use a figure of $80 million a year, based on my assumptions. If Illinois represents 5 percent of all ADC families (a conservative figure), we see that the liability being created annually nationally is about $1.6 billion. Of course, it is payable over the next 17 years, but it is cumulative. We are today supporting all of these children born during the past 17 years. Also, this amount times 17, or $27 billion, becomes the total projected cost in the 17th year to all underwriting agencies, city, State, Nation, directly and indirectly.

There is a tendency in the face of such staggering numbers to say this cannot possibly be, or that we are talking about futures, not sums of money that are actually out of pocket.

It seems to me that these amounts are of such significance that the necessity for Federal action is patent.

POOR NEED PUBLIC AND PRIVATE FAMILY PLANNING PROGRAMS

It is in the light of such staggering numbers that the cost of providing adequate voluntary family planning services to the Nation's poor must be assessed. As Dr. Alan Guttmacher, president of Planned Parenthood, testified before this committee last August, and as Planned Parenthood-World Population Chairman George Lindsay projected in February, it is our considered judgment that the cost of providing competent medical services in family planning to the 4.5 million impoverished women who are fertile and who are not pregnant or seeking a desired pregnancy would come to between $90 million and $100 million per year. It is entirely feasible to close the gap in the availability of family planning services to the poor through a combined public-private expenditure of this magnitude by the year 1970. These projections are realistic and these programs could be accomplished over the next 5 years if there is sufficient Federal leadership and sufficient funds.

I am happy to see, Mr. Chairman, that you have become cosponsor of the bill introduced by Senator Tydings, S. 2993, which would make available for family planning purposes in 5 years a total of $75 million in Federal funds. The appropriation of funds of this magnitude and a clearcut policy on the part of the Federal agencies to get on with the job will, more than anything else, make clear our commitment to move ahead.

POPULATION OFFICE IN HEW COULD ACCELERATE NATIONAL ACTIVITY

There is no doubt that an office in the Department of Health, Education, and Welfare, charged with the responsibility for family planning activities and administering a budget of the kind I have described above, will accelerate the process whereby States and cities can develop adequate programs. I would like to suggest to your committee

that you not only approve S. 1676 but also provide that active programs offering voluntary family planning services to recipients of public assistance shall be made a condition for matching Federal welfare grants. In this connection, the committee might want to look into the criteria which have been developed under title 19 of the Social Security Amendments of 1965, under which States will have to provide comprehensive medical services to the indigent in order to qualify for matching Federal grants for medical care. It seems to me imperative that the concept of "comprehensive services" under this program include adequate medical services in the field of family planning.

There are other conditions imposed on the States. Proper record-keeping, nondiscrimination, cash payments direct to the recipient—these and many other prerequisites to matching funds have long been mandatory.

FAMILY PLANNING IS PART OF COMPREHENSIVE MEDICAL CARE

Thus there would be nothing unusual at all if the Federal Government were to explicitly make the provision of family planning services a condition for matching grants: For medical guidance in family planning is nothing more than a part of the comprehensive medical care which is enjoyed by the more affluent sections of our population and it is the intent of the amendments of 1965 to make this kind of care available to all Americans.

I want to repeat this, because I consider it most important. It has been historical in the United States that where a problem of such magnitude threatens our entire society and the States either will not or cannot provide the remedy as swiftly as needed, the Federal Government has taken action. It has been true of medical care, of education, of countless programs. It is Federal action that I propose here, the only type of action that will insure sufficient acceleration of this program to offer us—as a society—some hope. Again, I stress the importance of making such a program voluntary among the indigent. There must be safeguards built into it. There can be no coercion. It must be solely for those who can accept it. Yet, without such a program that would make the availability of family planning services mandatory in the States, we may be headed down a road to disaster, making plodding gains that never quite keep up with the rate of inundation.

FAMILY PLANNING PROGRAM ALLOWS 22-PERCENT DROP IN BIRTH RATE IN CHICAGO IN 4 YEARS

In my own city of Chicago, an intensive family planning program in slum neighborhoods was accompanied by a 22-percent drop in the birth rate from 1960 through 1964.

Also, an estimated one-third of the 16,000 persons seen annually in Chicago's Planned Parenthood clinics have been women on public assistance. Not a single unwanted pregnancy has been reported among these clients since they began to practice birth control.

AVAILABILITY AND USE OF APPROVED TECHNIQUES CREATES JUDICIOUS FERTILITY

There is a consensus of Americans who desire active family planning programs for our entire population. It is certainly consistent with prudence for us to insist that every fertile woman be familiar with the availability of this assistance and a knowledge of the approved techniques.

We cannot in good conscience argue that the problem is in India, or in Brazil. The problem of overpopulation exists in every country in the world, and this includes our own country. John D. Rockefeller III was hitting close to the mark when he said recently that this moment might be the last chance we have to solve the population problem voluntarily. None of the alternatives which might develop are cheerful.

CONGRESS SHOULD APPROVE BIRTH CONTROL PROGRAMS

My experiences across the country have convinced me that at this moment our Federal Congress should approve programs to attack this problem of birth control frontally. Programs like this cannot be a middle priority of another agency, like the Office of Economic Opportunity. Such programs too easily bog down, they fall outside the spotlight and they just do not get done.

If we believe we can eradicate poverty, or reduce its incidence and are willing to spend upward of $1.5 billion annually to do it, good sense makes the investment of a fraction of this seem desirable if it will assist in containing the number of persons who must be assisted.

Thank you.

Senator GRUENING. Thank you very much, Mr. Maremont, for a very constructive and helpful paper. I particularly welcome your suggestions as to what the committee should urge in addition to the enactment of this legislation. We will know very shortly when we hear from the Secretary of Health, Education, and Welfare and the representatives of the State Department how friendly they are to this legislation. I have a suspicion that they may approve it in principle and say, "We are doing these things now anyhow," which I consider completely unsatisfactory, because I think this is a very moderate piece of legislation, and merely provides an entering wedge.

ENTHUSIASM NEEDED FOR LEGISLATIVE ENACTMENT

The extent to which the program, a successful program, an active program for birth control is carried out depends upon the enthusiasm with which these departments take hold, and so it remains to be seen.

I am very hopeful that this legislation will receive favorable reports from these two Federal agencies. You know it is a pretty well established fact that unless reports from the agencies are favorable, legislation does not become enacted. In any event, if we do not enact it this year, we are going to pursue it vigorously in the next session of Congress, but I am hopeful that we will get some action at this session.

Mr. MAREMONT. Thank you very much, sir.

Senator GRUENING. Thank you very much.

Your pamphlet, "Birth Control and Public Responsibility," published by Planned Parenthood-World Population has been brought to my attention. I shall insert it at this time in the hearing record.

(The article referred to follows:)

EXHIBIT 111

BIRTH CONTROL AND PUBLIC RESPONSIBILITY

(By Arnold H. Maremont, Planned Parenthood-World Population, New York City, October 16, 1963)

I am going to tell you about how I "backed" into birth control—and what I think are the implications of our experience in Illinois.

When the Governor of Illinois asked me to become Chairman of the ex-Illinois Public Aid Commission (it was abolished with me), I had no background in social service. I had served my apprenticeship in various sectarian philanthropic organizations, but always as a layman with the emphasis on fund raising, not in policy or administration. I was and am active in the National Association for Mental Health, serving as its first vice president. But the Governor didn't select me for these reasons. He selected me because he had just concluded a row with the previous chairman—also his appointee. The job had a history of difficulties. It was fraught with dilemmas, and while it would be nice to say I was eminently qualified to head up the policy makers on welfare, the truth is I was probably the only one who was naive enough, or idealistic enough, or foolhardy enough to undertake it.

In my own defense, though, I suppose I should say that I also fitted the description of the hard-headed—later some said hard-hearted—businessman who would cut through the miasma of problems and redtape which was costing the taxpayers of Illinois $350,000,000 a year, about a million dollars a day.

The only request the Governor made of me was that I should leave no stone unturned to reduce the welfare costs. This sounded both reasonable and doable.

At this juncture maybe I'd better tell you something else about myself and my philosophy. Years ago, in fact almost at the beginning of my business career, I decided that to succeed in business I had to be a hard-headed pragmatist, but I also decided that in terms of my own integrity, outside of business, I could and would indulge the idealism that I hoped would make this life a little more comfortable, a little safer, a little more rational. Beginning with the fight to have the United States join the League of Nations in 1919–1920, I have placed my energy and contributions behind causes. For example, in 1960 I undertook to organize a statewide campaign to have the voters approve the borrowing of $150 million for Mental Hospital construction, even though the same proposal had been beaten very badly in 1958. Every expert was sure we would lose again. but we polled 70% of the votes that were cast, and we won. This isn't meant to be any personal backslapping, but a testimonial to the people. They make the right decision when they have the facts; and there's a real analogy in this birth control matter. The public has already made its viewpoint known and will do so even more forcefully, as they become more acquainted with the facts and the nature of the problem.

And so I made the decision—good or bad—as you may judge—that my position as Chairman of the Public Aid Commission was not in the commercial area of my life. It was in the area of being a "do gooder", if you please. I decided I wasn't going to pull my punches. I was going to accomplish something or I didn't want the job. When I took the chairmanship, I mentally allotted about three or four hours a week to the job. Within two weeks, I was spending four or five hours daily, all of Saturday and most of Sunday.

CREATING AN INFORMED PUBLIC

The first thing I did was to rule that Commission meetings would be public. Not public in the usual sense of going through the official acts publicly, but public in fact. I decided we weren't going to adhere to the tradition of premeetings to decide what would be done. We were going to discuss all of the issues publicly. We were spending a million dollars every working day—of taxpayers' money. By what right could we justify this behind-closed-door operations? During my tenure, I might have made some questionable decisions but this wasn't one. As taxpayers we should insist on this public dialogue in every

sector of State government. There isn't any better way to create an informed public.

Within the first month of my appointment, a reporter called me and said that my newly appointed Executive Secretary Harold Swank had said he believed we should make birth control assistance available to all ADC mothers who requested it. In the first place, this sounded sensible to me, and in the second place I wanted to back Swank and to work with him. He was my man and I was all for him. I believe what I said was that if Swank proposed such a program, I would support it, and whang—I was on Page One of that newspaper and every other paper in the state.

THE PEOPLE WRITE

Obviously, I had many opportunities to retreat—to cry "misquote"—to crawl back. But at that point I began investigating what birth control meant in public aid. I did some reading—not only the usual materials, but also hundreds of letters. At first, most were from my fellow Illinoisans, but soon from people all over the United States. I talked to the Planned Parenthood people in Chicago, and it was fortunate that in Chicago Planned Parenthood has Executive Director Jane Browne, Medical Director Frank and their tireless staff and committee of citizens. They were an energetic resource from day one and they never let me down. I talked to social workers, to Catholic laymen, to Catholic clergy, and to the man on the street.

From this modest research, I learned a number of things about which most citizens have little or no inkling.

I found for example that comprehensive surveys have shown that poor people say they would like small families—smaller in many cases than the more well-to-do families. Although they endorse the idea of family planning even more strongly than the general population, I learned that the incidence of unwanted accidental pregnancy is very high among the low income and low education groups. And it didn't take long to discover at least one of the important reasons for this discrepancy: the simple fact that many poor parents have little or no access to authoritative sources of birth control service. In Chicago, where our welfare problem is particularly acute, they cannot get such service at Cook County Hospital, where they deliver their babies, nor at Board of Health clinics, nor until recently could they get it from the welfare department.

I concluded that Mr. Swank's proposal to offer birth control to welfare recipients was not only a matter of elementary justice for the unfortunate women and their existing children, if they ever were to have a chance to escape from the vicious cycle of poverty in which many were entrapped; it was also a matter of common sense for the entire community.

Initially, I felt that one would disagree that permitting an unwanted illegitimate child to be conceived is immoral. I was naive.

In the beginning, I believe that all of us in Illinois were guilty of a conventional wisdom. Galbraith calls conventional wisdom a popular belief that is, either no longer true or never was true. Our conventional wisdom—and perhaps it's yours—was that the Catholic community would oppose birth control based on the argument that public funds should not be used for contraceptive methods which the Catholic Church condemns.

This turned out to be untrue. In Illinois, Catholics have shown that while they are not ardent advocates of publicly supported birth control services, they recognize the pluralistic society in which we live, and will not seek to impose their own religious doctrines on others.

NOT A RELIGIOUS CONFLICT

This became clear to us when the Catholic legislator who introduced the bill prohibiting any expenditure of state funds for birth control quickly amended it to prohibit such expenditure for unmarried women only. Thus, the concept that Catholics will oppose any state sponsored birth control program is outmoded.

The obligation of the public welfare agency to provide birth control to families under its care was no longer questioned; the only issue remaining in dispute was what kind of birth control program the welfare administration should offer—and to whom.

The issue was joined not at the level of conflicting religious doctrines, but at the level of conflicting views on morality.

It was argued that the state was fostering immorality in its policy to give birth control assistance to a woman with no legal husband in the house—an unmarried

mother. Let's examine the ramifications of this argument and look at it in the context of the relief problem.

The Illinois policy for which I was responsible stated that only a mother could receive such birth control assistance—and then, only if she requested it. May I point out that we were talking about women with no legal husbands, who had already given birth. We weren't out to give it to single women on an at-random basis, freely distributing contraceptives throughout the state.

The state had already committed itself to supporting the children who are the fruits of whatever immorality had already transpired in the conception of the illegitimate birth. But if the state would be fostering immorality by making birth control available to these women, isn't it, by the same argument, fostering immorality by supporting the children? Yet, we live in a Judeo-Christian society where it would be unthinkable not to support and care for the children. But we don't have to be hypocrites about it.

THE MORALITY OF SERVICE

When a woman who has already brought one, two, five illegitimate children into the world and onto the welfare rolls says, "How do I not have any more?" isn't it up to us to do something?

Isn't it more moral to do something about the continued births of unwanted, unloved children? Do we close our eyes to the conditions of their birth by saying to the mothers: "Go ahead and indulge yourselves; we'll be here to pick up the tab"?

Or do we permit the women to have contraceptive information and services when such assistance is requested, thereby acknowledging that she doesn't want these illegitimate children brought into the world. Wouldn't it be better for all concerned—the mother, her children, and the balance of society to provide this service?

IMMORALITY BY INACTION

Although there's not a shred of evidence that availability of contraception encourages or discourages people from having sexual relations, our opponents in Illinois answered no to these questions. And so we do support the children, and in so doing we are in my judgment hypocrites by our own permissiveness, and guilty of even greater immortality by our inaction, inaction that permits our society to stand by with cotton in our ears when a mother requests assistance to avoid bringing still another stigmatized, unwanted, unloved child into the world.

As I stated, in the ultimate alignment, all of the Catholic forces accepted the statewide policy of public funds being used to control births where the mother had a legal husband living in the home—only about 13% of our ADC mothers in Illinois—but they refused adamantly to permit us to assist other mothers, mothers who requested such assistance. This was not on religious or doctrinal grounds but was stated in terms of promoting morality.

I am unable to understand how this decision was reached. The late Vicar General Casey of the Chicago Archdiocese took this morality position in a telegram he sent me, and also in a conference I had with him.

We all know the position of the Catholic Church on family planning and we respect the right of self-determination in matters of methodology. In fact, we took pains to assure that the consciences of relief recipients would be respected and that the rhythm method would also be taught to those who wanted it. But nowhere do we find doctrine to substantiate what became the apparent Roman Catholic position and the opposition to the policy in Illinois.

Therefore, since there is no dogma which requests such opposition, the opposition arose from the determination that the policy was immoral, without dictum. This question then became whose morality should prevail?

POLL SHOWS PUBLIC SUPPORT

In Illinois the Council of Churches representing 4,500 churches of all Christian faiths other than Catholic, supported the program for birth control assistance to all mothers on ADC. So did the Church Federation of Greater Chicago. The rabbinical groups endorsed this policy solidly, as did the State Chamber of Commerce, the Illinois State Medical Society and countless other representative organizations.

And may I say here that a poll was taken very recently in Illinois, which clearly indicates that sixty-three percent of those polled thought that distributing

birth control information and materials to persons on relief was a good idea. Only twenty-six percent thought it a poor idea and eleven percent had no opinion. Seventy-three percent of all non-Catholics polled thought it was a good idea, while 10 percent had no opinion and 17 percent thought it a poor idea.

And to elaborate just a little further, 39 percent of all Catholics polled on that question thought it was a good idea; only 46 percent thought it a poor idea and fifteen percent had no opinion at all. The poll sampled residents of Urban Cook county, suburban Cook and non-Cook County.

COURT TEST PENDING

It is important that all of us understand that in Illinois people of all faiths accepted the principle of public funds being used to space children and limit births among ADC mothers. The limitation of the Illinois policy was to mothers not living with their husbands, representing 87% of the ADC mothers. The Illinois Attorney General ruled the original enactment by the Commission was against public policy. You can be sure we will soon ask the Supreme Court of our State to resolve this. Fortunately on such matters the Supreme Court has the last word. It is possible that the issue might be presented to the United States Supreme Court. I believe that today rendering such assistance to all mothers is good sense and public policy, I believe the Supreme Court will so rule.

May I quote from a recent New York *Times* article. "A prominent Catholic in Chicago said, 'We have lost the fight, not won it. The principle of state-supported dissemination of birth control information is now in practice in Illinois, and while only a few welfare mothers will receive the birth control help this year, you can be sure that a bill will be introduced in another year or two extending the program to all those on relief, including the unmarried. We will lose that, too. But we are in a pluralistic society, and we accept the defeats. We are trying, however, to lose as gracefully as we can.'"

To this statement, I would add only a brief comment. This view is a harbinger of efforts to come, Catholic, Protestant and Jewish efforts to develop a realistic program of birth control. This would be the ideal way: to have all faiths participate in the development of programs—once it has been acknowledged that our society, in fact, wishes to have such programming.

A MONEY QUESTION, TOO

The real validity of this family planning program is not soley a question of morality. It's also a question of hard dollars. Each child born to an ADC mother in Illinois will cost the taxpayers about $7,000 until the child becomes self-supporting, theoretically, at seventeen years of age. What this means is that if a mother didn't want the child, asked for birth control assistance and used it effectively, we could have saved $7,000, which could certainly be better spent on rehabilitative efforts. In Cook County where there are approximately 13,000 children born annually to ADC mothers, if we assume 80% were unwanted, we would have 10,000 fewer births. These 10,000 births represent as much of a liability to the state and Federal Government as though the state had borrowed $70,000,000 in one year to be repayable over the next seventeen years ($7,000—a year)—and we continue to incur similar liability each year. It seems to me that we should have the same right to vote on saving $70,000,000 a year as we have to vote on borrowing $70,000,000 a year.

SPURRING OTHER STATES

In Illinois, the decision by all faiths to accept the use of public funds for birth control has already been made.

There is now a program, which, although modified at present, represents the acknowledgment that such a program has a rightful place in the Federal-state subsidization of welfare recipients. Meanwhile, a state commission is studying whether the program should be extended to all recipients regardless of marital status.

A group of citizens outside of political life, and dedicated to public sense, had the courage to inaugurate such a program. But in how many other states will this occur without a nudge?

Therefore we must insist that the nudge come from the Federal Government. Senator Joseph Clark in a recent paper said, "As a former chief executive of a large American city, as a member of the United States Senate, as a public servant who, in both capacities, has been obliged to know a good deal about the working

of state government, I have no hesitation in stating my deep conviction that the legislatures of America, local, state, and national, are presently the greatest menace to the successful operation of the democratic process." He also said that "State Government is the weakest link in this chain." Other political scientists argue that we are witnessing the total elimination of state government. Everywhere we turn we see shocking evidence of this total failure of states to govern, and yet we are dependent on such decadent institutions to help us solve such serious problems as public welfare.

In the field of mental health, the Federal Congress appropriated $1.2 million for the study on improving care and maintenance of the mentally ill. The study took five years and showed that the only real answer appeared to be through Federal matching grants, the same way that we attack our housing crises, highways, hospitals and other problems of national import. When the states become delinquent, the Federal Government must at least furnish the spark. Remember that in Public Welfare, particularly in Aid to Families of Dependent Children, the Federal Government pays from 50% and up, of the bill. The current regulations provide that the Federal Government will reimburse the State for 17/20 of the first $20.00 per person per month paid plus at least 50% of administration and in some cases 75% of administration. In many states we are paying 75% or more of the costs. So we are all concerned with what each state does or does not do. If an inadequate birth control policy will compound our current problems, our Federal Government should be obligated to intervene to enforce such safeguards. In the highway program specifications must meet Federal standards for matching grants. This is equally true of airports and public housing. We do this in order to insure lowest maintenance costs and longevity. Why then shouldn't our Federal Government insist that State Public Aid programs include birth control assistance to ADC mothers—upon request.

PRECEDENTS PREPARE THE WAY

Actually, the Federal Government through the Department of Health, Education and Welfare regulations could and should inaugurate a national birth control program to assist ADC mothers.

At this instant the Department of Health, Education, and Welfare has imposed various conditions requisite to a state's eligibility for the Federal subsidy. For example, the aid recipient cannot be deprived of his free choice for spending his allotment. His identity cannot be disclosed for any commercial purpose. His citizenship cannot be entailed such as loss of voting rights. Suppose the Department of HEW added a provision that for a state to be eligible for subsidy ADC mothers must be provided with birth control information and material *if they request it.* The question of public policy, I am confident, will be fully resolved in Illinois.

I have said and I reiterate, that within ten years every state will have such a birth control program. But to what avail patience. Why not now?

It should also be resolved elsewhere. The impetus should come from the top—from the Federal Government. When states abdicate their responsibility to come to grips with problems within their jurisdiction, the Federal Government should provide the prod.

Let me illustrate the importance of such a measure. If in Illinois we are creating a liability of at least $70,000,000 annually, payable over 17 years, we can assume that in 17 years this liability will be 17×$70,000,000 or $1,190,000,000 and this is only for Illinois. If Illinois has 6% of the U.S. population and represents about 6.8% of the nation's ADC cases, the liability nationwide in 17 years will be about 17.5 billion dollars. Think of it, in Illinois where this liability we incur is almost ½ of what we spend on higher education. Couldn't we better spend this money on job retraining, on preschool or vocational education, or on other deserving programs?

All of you know the social implication of unwanted, illegitimate children in an expanding society.

All of you know the threat this represents to our physical, economic and sociological well being. All of you know the increased costs and responsibilities incident to educating young people to find productive work. How long can we go on passively permitting good government and a better society to be thwarted? We cannot export birth control unless we recognize its validity any more than we can export democracy without making it a reality in our own country.

We must dramatize our objective. The day of debate is past. We must be prepared if necessary to take to the streets—to the majority of the people

in this country. Based on every poll that has been taken, that majority is enlisted on our side. It is our responsibility to lead them. Let us make 1964 the year in which we are going to move the United States of America into the sunlight of adequate population control.

Senator GRUENING. Now let me see. Is there anyone here who has to catch a plane or a train? If so, we would give them priority because I will have to absent myself, I hope briefly, at 3 o'clock for another committee meeting. If not, I would like to ask Dr. Joseph Martin of Cleveland to be the next witness.

BIOGRAPHIC STATEMENT: JOSEPH P. MARTIN

Dr. Joseph Popel Martin is a physician and surgeon. He was born in Washington, D.C., on July 17, 1918. He graduated from Dunbar High School in this city and received his B.A. and medical degree from Howard University.

He and his wife, Hazel, have three children.

He is president of the board of trustees, Birth Control Clinic at Bell Center, Cleveland, Ohio. He is clinical instructor, obstetrics and gynecology, Western Reserve University College of Medicine; vice chairman, Medical Advisory Board, Maternal Health Association of Cleveland. He was a participant in the White House Conference on Health, November 1965.

From 1944 to 1946 Dr. Martin was a rotating intern and resident at Freedmen's Hospital in Washington, D.C. He was an obstetrics and gynecology resident at Harlem Hospital and New York Hospital, New York City; and Provident Hospital, Baltimore, Md., from 1948 to 1949.

From 1949 to 1953 Dr. Martin was in private practice as an obstetrician and gynecologist in Cleveland, Ohio. From 1953 to 1955 he was a captain in the U.S. Air Force Medical Corps where he was chief of the obstetrical-gynecological services at Carswell Air Force Base, Fort Worth, Tex., and the Chateauroux Air Force Base, Chateauroux, France.

Dr. Martin is a diplomate of the American Board of Obstetrics & Gynecology. He is a member of the National Medical Association, a member and past president of the Cleveland Medical Association, a member of the Academy of Medicine of Cuyahoga County, the Ohio State Medical Association, and the American Medical Association.

Dr. Martin is a member of the Infant and Maternal Mortality Committee of the Academy of Medicine, chairman of Perinatal Mortality Committee of the Cleveland Society of Obstetrics & Gynecology, and member of the Cleveland Society of Obstetrics & Gynecology. He is a life member of the NAACP. He is vestryman at St. Andrew's Episcopal Church. He was a member of the delegation of the National Medical Association tour of Russia, Poland, Hungary, and Czechoslovakia to study medical problems and progress in 1960. He was chairman of the Special Project Committee (National Council of Churches) for Voter Registration and Education in 1965, and is a member of the board of trustees, Karamu House, Cleveland, Ohio.

That is a very distinguished record, Dr. Martin, and we are very happy to have you here. I see that you are not only an expert in your field but that you have wide interests which are certainly most commendable.

STATEMENT OF DR. JOSEPH P. MARTIN, CHAIRMAN OF THE BOARD OF TRUSTEES, THE BIRTH CONTROL CLINIC AT BELL CENTER, CLEVELAND, OHIO; AND VICE CHAIRMAN OF THE MEDICAL ADVISORY BOARD OF THE MATERNAL HEALTH ASSOCIATION OF CLEVELAND

Dr. MARTIN. Thank you, Senator. I appreciate the opportunity to appear.

Senator GRUENING. I would like to say I was a member of the NAACP in its very early days in the beginning of this century when it was started by Oswald Garrison Velard, Dr. DuBois, and one or two others.

LACK OF FAMILY PLANNING CAUSES MYRIAD PROBLEMS

Dr. MARTIN. I was not aware of that. I think that is wonderful. I will begin by presenting some doggerel.

> There was an old woman who lived in a shoe,
> She had so many children, she didn't know what to do;
> She gave them some broth without any bread,
> She whipped them all soundly and put them to bed.

Though she did have a problem with family planning, that old lady also had a housing problem, the children had behavior problems, there is no mention of a father figure in the home, and a dinner of broth alone would certainly seem to indicate poverty.

In that day and this then, family planning is one of the least important needs of those in poverty, but it is one of the few that is amenable to direct community action. Far greater needs are jobs for men and for teenagers; for husbands, for women who have been made husbandless by the rigors of social disadvantage; and for responsible fathers to meet the needs of a generation of boys and girls who have no father image to emulate and who never encounter the mutual give-and-take of a husband-wife relationship and are consequently unable to establish such patterns in their own adulthood. Far greater is the need for adequate housing and for ability to purchase such housing freely on an open market, restricted only by financial ability and taste. Placed in proper perspective therefore, to the above-listed greater needs, family planning is needed to stabilize the American family, to stop its current alleged deterioration, and to end the chaos that results from complete social breakdown.

EXCESSIVE FERTILITY IS SCOURGE OF THE POOR

Our concern is not only related to the birth rate per se, but to the overwhelming effects that excess fertility have on the poverty-stricken themselves. I feel there is no need here to repeat the elements of the recent Monyhan report with its rediscovery of the sociologic effects of chronic underemployment, but as a physician—although in private practice—I am concerned with the health impact of the lack of available family planning services.

Cleveland in 1963 with an estimated population of 861,000 recorded 18,643 births—a birth rate of 21.6 per thousand of population—11,732 were white, 6,611 were nonwhite. The perinatal mortality rate, which

includes stillbirths and infant deaths up to 28 days of age, was 28.8 per thousand for the white and 50.8 per thousand for nonwhite—almost double; 7.8 percent of the white births were premature as opposed to 16.4 percent premature births for nonwhites—more than double. Of these prematures, the loss was 7.5 per thousand for white and 9.5 per thousand for nonwhite.

EFFECTS OF POVERTY PRODUCE SHOCKING COMPARISONS

In this same year, 1963, in five predominantly Negro social planning areas, though having a birth rate only 6 percent higher, there was a premature rate 52.7 percent higher, an infant death rate 92 percent higher, a stillbirth rate 128 percent higher, and an illegitimacy rate 415 percent higher than the rest of the city. Study of a somewhat broader area of the community in 1964 showed that ten social planning areas with the worst indexes of social disadvantage with an area population of 42 percent of the city total, accounted for 44 percent of the county's low-income families, 45 percent of the male unemployment, 35 percent of the low education, 61 percent of substandard housing, 82 percent of the ADC and general assistance cases, 47 percent of the juvenile delinquency, 78 percent of the illegitimate births within the city, 20 percent of the older persons in the community, and 80 percent of the nonwhite population. Six of these areas were predominantly nonwhite and four were predominantly white.

For these areas combined, the neonatal deaths were 56 percent of the total, stillbirths were 52 percent of the total, infant deaths 54 percent of the total, prematures 55 percent of the total. Stated another way, an area population of 42 percent produces 44 percent of the births, and well over half of the accidents of pregnancy and pregnancy wastage. Again, our concern is not with overpopulation per se, but with the effects of poverty that make pregnancy hazardous. Improved nutrition, living conditions, proper child spacing, control of family size, prenatal care, and hospital deliveries are all required to alter these figures, but nowhere in the health field is the cost of poverty translated as directly in the cost of lives as in its relationship to the risks to the pregnant female and to her offspring. These statistics are for Cleveland. But in every major community where urban slums have occurred a similar disparity in the death rates for infants and for mothers, on the basis of socioeconomics, still occur.

". . . ONE ABORTION FOR EVERY FOUR CHILDREN BORN"

The actual number of both spontaneous as well as the illegal abortions in the county are probably incalculable. Accepted medical thought indicates that normal loss of pregnancy by spontaneous abortion is approximately 10 percent. For Cuyahoga County there would have been 3,755 for 1964. One nationally prominent obstetrician—Dr. Guttmacher, referred to by Mr. Maremont in his statement—states that the rate of illegal abortion in an average urban community approaches 20 percent of the total pregnancies or one abortion for every four children born. This would amount to 7,449 in our community. These two figures combined, if accurate, mean that over 10,000 abortions occur annually in Cuyahoga County. These abortions usually contribute approximately one-third of our annual maternal

deaths. Many of these illnesses are followed by serious medical and psychiatric complications as well as to deplete available hospital beds and supplies of blood available in our blood banks.

CLEVELAND SEEKS TO FIND SOME ANSWERS

So what are we doing about it? In Cleveland, I am a participant in two projects aimed at correcting some of these problems. Project I is to operate a voluntary, nonprofit family planning clinic in one of our slum areas as a pilot demonstration unit and the second to utilize our experiences and findings from Project I to implement Project II, the establishment of family planning clinics in all of the health stations operated by Cleveland's Division of Health.

Project I celebrates its first anniversary on the 15th of April 1966, having had an intake of over 200 new patients in the first year. For 1965, we had an all voluntary, rotating staff of 25 physicians and a volunteer group of 5 registered nurses and operated only 1 day a week. For 1966, we have obtained private donations from the community to the extent of $12,000 which will provide a modest stipend for our staff and cover total expenses above donated services and will be open 3 days a week. Unfortunately, most of these grants will expire at the end of this year.

PROJECT I—BIRTH CONTROL CLINIC AT BELL CENTER

Our clinic is known as the Birth Control Clinic at Bell Center and was established in a neighborhood settlement house by a coalition of preexistent community organizations. These were the Cleveland Medical Association—an all Negro professional society of physicians—the Urban League of Cleveland, the Maternal Health Association of Cleveland—a Planned Parenthood Federation and World Population affiliate—and the Cleveland branch of the American Cancer Society. Our program includes not only family planning services and supplies, but also a cancer detection and cancer education program and a sex and reproductive education program more recently added with the assistance of the Family Health Association of Cleveland.

Another reason for establishing this clinic was to find out why people did not take advantage of services previously offered. The Maternal Health Association has three East Side branches and a mobile unit, and one West Side branch. In addition, there are four major teaching hospitals that do offer family planning services. Few hospitals, however, are mass-service oriented and few of the clinics heretofore provided are particularly convenient to the poverty areas.

PILOT PROJECT PROVIDES MANY SERVICES FOR FAMILIES

Our pilot demonstration project therefore is in the middle of one of the worst of the slum areas and we provide babysitting service, transportation to and from the clinic, and an outreach program utilizing neighborhood social service staff aids who go into the homes to interpret the program of family planning and how it may help people achieve their life goals. These aids also extend reassurance to prospective patients as to the manner of dress and their acceptability and warm welcome to the clinic. Handbills and flyers have been dis-

tributed throughout the immediate neighborhood in churches, neighborhood street clubs and in the area food-stamp offices and county relief and welfare offices.

CANCER MORE FEARED THAN PREGNANCY

We have also made direct contact by another gimmick. Our largest turnout was an evening meeting where two movies provided by the Cancer Society were presented by one of our physicians. Many of these women—actually more fearful of cancer than of pregnancy—did return at a later time for birth control services. We hope that the lectures and programs in sex and reproductive education will have similar ancillary values as well as the intended improvement of sex education to be passed on to their offspring.

PROJECT II—ESTABLISHMENT OF PUBLIC TAX-SUPPORTED FAMILY PLANNING CLINICS

Project II, the establishment of public tax-supported clinics, has been somewhat less successful for several reasons. The background of community attitudes includes class conflict about sexual matters. There is middle- and upper-class rejection of the supposed sexual overactivity and irresponsibility of the lower classes and anger at their lack of motivation. Simultaneously, the lower class rejects middle-class interference with its sex life. Lack of significant prior identification of the upper classes with much more greatly needed social reforms brooks suspicion of the sudden interest and the concern for birth control for the lower class.

". . . FAMILY PLANNING IS BECOMING LESS AND LESS CONTROVERSIAL"

Since Cleveland is a predominantly Catholic community, there has also been fear of religious antagonism by both medical and political leaders. However, family planning is becoming less and less controversial. I devoted 3 hours to a live radio broadcast just this past week, and after 2 hours of talking about family planning with two of my colleagues and the announcer, there was to follow 1 hour of questions from the general audience. The majority of the questions which came forth during this hour related to cancer and sex education and not one question was asked regarding family planning. Fear of anticipated opposition has been as effective a deterrent to progress as if it were real.

RAPPORT LACKING BETWEEN THE TAXED AND THE POOR

The poor utilization of present public health and family planning services produces resentment by taxpayers who feel that they are already doing more than "these people want done for them." Poor utilization of the present services aside from geographic and transportation problems is, we feel, produced by poorly offered, casual, and indifferent efforts of poorly trained, poorly paid, poorly motivated auxiliary medical personnel and by a tendency for indigent patients to resist being used as experimental material in some of the teaching hospital clinics. While it is true that the poorly educated generally

reject new and untried experimentation, even middle class acceptance of the concept of birth control has been slow. Margaret Sanger began in the 1920's. Forty years later, 90 to 95 percent of Americans approve family planning.

PROFOUND CHANGES APPARENT AS RESULT OF EDUCATION

Implementation, then, of Project II involves a reeducation of the divergent classes as to the others' motives and needs. Statistics in the Monyhan report and in the most recent publication by the National Research Council's "The Growth of U.S. Population" are having a profound effect on the middle and upper classes when presented. Our current effort is to persuade those who fail to recognize the need for self-protection for their own good as well as for the good of society as a whole and to persuade society to assist its less fortunate citizens for the sake of the individual as well as society. Some few persons may be trying—perhaps subconsciously—to punish society for real or imagined slights by compulsive hyperfertility. These we may not reach, but the largest number of patients to be reached are the involuntarily hyperfertile who either do not know of, or do not trust techniques of contraception. Current survey indicates that both groups are changing—the upper are becoming genuinely concerned about how to help the lower and the lower is actively trying to move up socially, to reduce family size, and is discarding some of its suspicions about the basic motives of the upper classes.

"... A LOW DOLLAR EXPENDITURE FOR FAMILY PLANNING WILL PRODUCE LARGE DOLLAR WELFARE SAVINGS"

Attempts at interpreting cost figures are sometimes infuriating to those who place human values above dollar costs, but we have simply pointed out in Cleveland for the sake of the fiscally oriented that prenatal care, delivery, and discharge of one mother and new-born on public assistance costs the country approximately $450. The county also expends $100,000 per year in well-baby conferences. The cost of maintaining one patient on birth control pills for 1 year averages $20. There is a significant community desire to keep taxes and operating costs at the lowest possible level. Ohio's expense for public education, for example, is 34th in the 50 States and Cleveland's $400 per pupil, per annum in the public schools compares poorly (30th) with the average of $700 for the rest of the surrounding county school systems. ADC in Cleveland is only 60 percent of the national standard and general relief is only 70 percent of the national standard. Therefore, if we can use this dollar guarding constructively, a low dollar expenditure for family planning will produce large dollar welfare savings. Dollars saved by reduction in welfare costs could be utilized for improvement in education and improved public safety.

We have obtained resolutions from major Protestant denominations and from rabbinical sources in Cleveland to shore up and give support to our medical and political leaders. Since no religious group opposes family planning, and since 53 percent of Catholics approve of family planning and 34 percent are actively using some form of family planning, then offering all techniques within the framework of the religious convictions and mores of the individual to be served cannot become a source of conflict.

On the basis of a steady and concerted effort to interpret these facts to multiple community groups and on the basis of other recent developments, we will soon be able to achieve tax supported, publicly operated, voluntary family planning facilities in the city of Cleveland.

But the road is not yet clear. In 1960 in Cleveland, health expenditures including hospitals, clinics, and both governmental and private agencies totaled $118 million, of which 95 percent went for treatment, care of the sick, and the disabled. Less than 4 percent was spent for preventive programs including public health. Family planning is just one such preventive program, and we urge that it be regarded as a health measure and aggressively sponsored in all public clinics by our health department.

NEED TO TEACH RESPONSIBLE SEXUALITY AND RESPONSIBLE PARENTHOOD IN THE PUBLIC SCHOOLS

Other health care needs include basic health education at a practical level that will encourage and instruct in proper nutrition to offer greatest protection from illness; that will insist on proper programs of immunization of children; that will teach everyone how to recognize illness; and that will alert people where and when to go for help when illness strikes. The need and value of prenatal care starting early in pregnancy must also be taught. There is also a great need for improved public reproductive education. The so-called birth control revolution has outmoded many of our present concepts as to how to protect our young. Currently, the rates of illegitimacy, the national illegal abortion rate (1.5 million per year), and the resurgence of venereal diseases demonstrates the inadequacy of our present sex-education system. The public must be awakened to the screaming need for teaching responsible sexuality and responsible parenthood in the public schools.

"RECENT STUDIES SHOW THAT 60 TO 80 PERCENT OF CHILDREN BORN TO WOMEN ON RELIEF ARE UNWANTED"

Our community does not have available financial resources for immediate expansion to such inclusive public health programs. In Cleveland, we are further recommending that county welfare agencies be allowed and encouraged to refer medically indigent and welfare recipients to family planning and child spacing services on a voluntary basis to learn techniques consistent with their religious beliefs. Recent studies show that 60 to 80 percent of children born to women on relief are unwanted. These agencies should also assist in financing such services for those who are unable to afford it. Simultaneously, planned parenthood affiliates in our State capital, Columbus, are working to obtain legislation that will provide this much needed help.

MULTIPLE USES SEEN FOR NATIONAL OFFICE OF POPULATION PROBLEMS

A national office of population problems, if it were operative at this time, would enable us to reduce time spent on promotion, public relations, evolutionary policy changing, and allow us to devote more time to effective help for those who need it.

Communities just starting would have a source of information, know-how, and guidance which was not available to the pioneering communities like Chicago, Baltimore, and New York. Fragmentation, frustration, and duplication of effort would be thereby reduced.

Techniques for finding personnel and guidelines for obtaining funds would similarly be available. Finally, as a data collection center, our State legislators would have immediately available reference data from other States, perhaps even enabling suitable periodic revision of State health laws consistent with medical and scientific progress.

Central collection of scientific data from agencies providing birth control services would also be of great scientific value and interest in pursuing even more effective, less costly, and simpler means of family planning and population control.

The provision of a White House Conference on Population would then provide a forum from which an evaluation of the work of such a domestic agency would be objectively made.

My testimony in regard to S. 1676 has been predominantly related to its domestic possibilities. With the experience gained at the domestic level, an excellent international program could also be initiated.

I have related some of the problems concerned and techniques being used in one urban community and assure you that our efforts are being duplicated all over the Nation by interested and dedicated citizens. Certainly, you may be assured of their support for this legislation. The Nation's poor will also support it.

I would close with a bit of doggerel in the modern idiom:

> There was an old lady who lived in a shoe,
> She had too many children because she didn't know what to do;
> But she learned to take pills without any dread,
> And now she is working and makes plenty of bread.

Senator GRUENING. I think there is truth in your poetry. It is very appropriate.

Dr. Martin, in the second paragraph of your first page (page 702) you say: "In that day and this, then, family planning is one of the least important needs of those in poverty."

Why do you consider it one of the least important? It seems to be that your whole paper indicates that that is what they need primarily.

Dr. MARTIN. This was an attempt at a soft sell, but I did indicate that I think that the greatest needs are in housing, education, jobs, and economics.

Senator GRUENING. Well, at the same time that they plan their families, they might diminish some of the other negative aspects of their lives.

Dr. MARTIN. Absolutely. This is what I had hoped to point out, though not as succinctly.

PUBLIC-SUPPORTED FAMILY PLANNING TO COME SOON IN CLEVELAND

Senator GRUENING. In the last paragraph on page 707 you altered your text. You said: "We may at some time in the future be able to achieve tax supported, publicly operated, voluntary family planning facilities in the city of Cleveland."

And you altered that to read: "We will soon be able."

Does that indicate that there is some optimism, some hoped for news on the horizon?

Dr. MARTIN. Absolutely, sir.

Senator GRUENING. Tell us about it.

Dr. MARTIN. I would much prefer that the release be made by the director of public health and welfare in the city of Cleveland, but we are about to launch into the business of public-supported family planning.

Senator GRUENING. That is very gratifying. This has been a most constructive paper. Really, you have come to grips with the problems as you have seen them in Cleveland and as they are, no doubt, in every other major city of the United States. We are very, very grateful to you, Dr. Martin. You have been very, very helpful.

Dr. MARTIN. Thank you.

Senator GRUENING. Three clippings concerning the population explosion—written in 1963–64 by the then Washington correspondent for the Portland, Oreg., "Portland Reporter," Mr. Allen Hoffard—have been called to the attention of the subcommittee. Because they are still pertinent, I now direct that they be made a part of this hearing record. Regrettably, the Portland Reporter is no longer being published.

(The articles referred to follow:)

EXHIBIT 112

2,000,000!

(By Allen Hoffard, Washington Correspondent for the Portland, Oreg., "Portland Reporter," Sept. 3, 1963)

WASHINGTON.—An incisive and penetrating speech by Sen. Joseph S. Clark (D-Pa.) has focused attention on the world's most serious continuing social and economic problem: overpopulation.

The frightening fact is that the population of the world is growing at the incredible rate of 2,000,000 per week. That's right, per week.

"Let us stop sweeping this critical problem under the rug and get to work at its solution," Clark told the senate. He noted that world population in 1900 was 1,500,000,000. It had doubled by 1960, and will double again by the year 2000 unless steps are taken to halt this escalator to disaster.

"Most of this growth has been and will be in the countries which can least afford it," Clark observed, noting that hunger and poverty are widespread in many countries where population expansion is out of hand.

"Yet we should not smugly conclude that the population problem is one for the underdeveloped nations alone," the Pennsylvanian pointed out. "Our population of 180,000,000 will, if present rates continue, double, or increase to 360,000,000, by the year 2000." Glancing at his conservative colleagues, he added:

"Already we are hearing moans and wails from members of this body about the expansion of the Federal budget and the amount which is being devoted to social services and unemployment relief....

"Can there be any doubt that the growth of population in this country will inevitably result in greater unemployment, higher taxes and bigger government?"

Clark praised the report of the American assembly, which met last May at Harriman, N.Y., and recommended a program of action in this field. Eighty prominent Americans, including Portland's Rabbi Emanuel Rose, participated in the assembly.

Dr. John Rock and his recent, much-discussed book, "The Time Has Come: A Catholic Doctor's Proposals to End the Battle Over Birth Control," also drew commendation from Clark. Rock advocates a more realistic and modern approach to the topic by members of his faith.

Clark asks for the channeling of a portion of foreign aid funds into research of the population problem, increased efforts by the national institutes of health

in the field of fertility control, and free and frank discussion of the subject, in and out of the halls of congress.

With Sen. Ernest Gruening (D-Alaska) as co-sponsor, Clark also has introduced a resolution calling on President Kennedy to name a White House commission to investigate the scope of the problem and alert the Nation to it.

This corner seconds that motion.

EXHIBIT 113

GRIM SPECTERS

(By Allen Hoffard, Washington Correspondent, special to the "Portland Reporter," Oct. 22, 1963)

WASHINGTON.—Another U.S. senator has spoken out lucidly and forcefully on the long-taboo topic of birth control.

Sen. Ernest Gruening (D-Alaska) joined Sen. Joseph Clark (D-Pa.) in voicing deep concern over the problems posed by the Worldwide population explosion.

"Two grim specters beckon mankind toward oblivion today," Gruening told the senate. "One offers instant and wholesale death by nuclear means. The alternative guarantees eventual starvation when the human population exceeds the food supply."

But the Alaska solon is an optimist about it all.

"I am convinced that both challengers will be bested," he asserted. "Man this year is taking his first international step which will permit many who are concerned to resolve the birth control problem by acceptable means."

Gruening remarked that he is "happy to see the Catholic church coming to grips with the population control issue," and quoted Dr. John Rock, a Catholic physician who authored the recent book, "The Time Has Come," as opining that the end to the birth control battle is imminent.

It will come, wrote Dr. Rock, when "courageous national leadership which has the wisdom to recognize the community of interest uniting men of all faiths" also has "the power to insist that ancient stereotypes must be discarded for the common good."

Gruening praised the establishment of the new population study center opened in July at Washington's Georgetown university, a Catholic institution.

Gruening and Clark are co-sponsoring a resolution calling on President Kennedy to step up federal participation in population research.

Clark, meanwhile, implied that "a great deal of undue political timidity" was the reason that other senators had not flocked to the front desk to sign as co-sponsors of the resolution.

"I received no adverse criticism of any consequence because I was advocating positive research and discussion in this area," reassured Clark, frankly adding this footnote:

"When I ran for re-election in Pennsylvania last fall, it is true that I did not speak out with the same candor that I have since I was given a new six-year lease on life."

This corner hopes somebody is listening to the two senators' pleas.

Readers of Hep, Jive, Sepia, Ebony, Redbook, and 14 other magazines (including, of course, Modern Bride) may be a bit surprised by an advertising campaign which made its debut this month.

It plugs Emko, a product bluntly described as a means of family planning. An estimated 30 million potential customers will see the ads in the 19 magazines.

The drug industry and Madison (Mad) Avenue are both curious about the reaction readers will have.

Progress in the same field is under way in the District of Columbia, where funds have been asked to launch a "pilot program" of assisting women on welfare to gain information about birth control, similar to the new Oregon plan. The population explosion is a real blast here.

EXHIBIT 114

NUMBER ONE

(By Allen Hoffard, Washington Correspondent, special to the "Portland Reporter," May 5, 1964)

For a welcome respite from the trite remarks and irrelevancies which pervade their 1964 Voter's Pamphlets, we suggest that Democratic voters turn to page 12 for a refreshing discussion of a substantive topic.

Because it will become the number one social issue on this planet before too many years have gone by, it is worth the attention of every thinking American.

We quote from the pamphlet copy of Salem lawyer Steve Anderson:

"Some day, of necessity, a political party in the United States will campaign on birth control—domestic and worldwide. Then there will be hope of solving the terrifying human problems that increase frightfully without such policy.

"We pour billions into South America to better the living standards a few percentage points annually. The fantastic birth rate nullifies any gains!

"And so it is throughout the world. Even in Oregon, the problem plagues Welfare, and increases the tax load . . ."

Anderson seeks support in his race for delegate to his party's national convention on grounds that he will seek to raise the question of population control before the Democratic platform committee.

"Help our party come to grips with the most demanding challenge to humanity!" he declares.

By raising the issue, Anderson has performed a distinct service. Serious thought on this subject should be inspired by turning the spotlight on it whenever possible.

Two U.S. Senators have recently begun historic dialogue about birth control on the senate floor. They are Joseph S. Clark (D-Pa.) and Ernest Gruening (D-Alaska).

The depressing thing is that not one of the remaining 98 senators has come to their aid or joined in the effort to bring the subject to public attention.

It is to be hoped that the searching logic of their arguments will eventually cut through the wall of silence erected by their colleagues.

And perhaps a future Democratic convention will even come around to take a realistic look at this subject.

In the meantime, it is clear that candidate Anderson (one of 54 aspirants for 14 delegate seats) harbors no illusions about the readiness of the public to face up to the question.

He recalls his narrow loss in the Democratic 1st District congressional primary in 1960 after he raised the topic. "Obviously," he says, "it was not a winning issue."

"But," he adds, "it should be."

This corner seconds that comment.

Senator GRUENING. In October of 1965 Dr. Martin gave a very fine speech—"The Implementation of Family Planning: Experiences in an Urban Community"—at the District V meeting of the American College of Obstetrics & Gynecology at the Statler-Hilton Hotel in Washington, D.C. I direct that his presentation be included in the record of this hearing.

(The presentation mentioned above follows:)

EXHIBIT 115

THE IMPLEMENTATION OF FAMILY PLANNING: EXPERIENCES IN AN URBAN COMMUNITY

(By Joseph P. Martin, M.D., Chairman of the Board of Trustees, the Birth Control Clinic at Bell Center, Cleveland, Ohio)

If our present rates of fertility and mortality continue, in only 650 years there will be one person per square foot of surface area in the United States. This postwar population boom produces many socio-economic problems and aggravates pre-existing difficulties with education, unemployment, slums, delinquency, air and water pollution, and traffic congestion. There is also a threat to our outdoor recreational facilities, our non-renewable resources and living space.

The burden of excess fertility falls in overwhelming disproportion on the uneducated and impoverished in the United States as elsewhere. The effects of this fertility are not as great on the country as a whole as on the underprivileged themselves. In 5 of Cleveland's 30 social planning areas, these effects are demonstrated by such high rates of certain complications associated with childbearing as to demand medical intervention.

In 1963, the Central, Central East, Central West, Hough and Glenville areas, though having a birth rate only 6 percent higher, had a prematurity rate which was 52.7 percent higher, an infant death rate 92 percent higher, a stillbirth rate 128 percent higher, and an illegitimacy rate 415 percent higher than the rest of the city.

Largely on the basis of these statistics, the Maternal and Infant Care Project is being established in Cleveland by the Children's Bureau (Department of Health, Education, and Welfare). In cooperation with the Ohio Department of Health, Metropolitan General Hospital and with the endorsement of the Cleveland Society of Ob-Gyn, this Agency will provide an improved quantity, quality, and accessibility of care in these low-income areas.

There are birth control services now available in our major teaching hospitals and the Maternal Health Association has one main and four branch clinics and one mobile unit operating in the area. The Maternal Health Association will also be invited to help provide family planning services under this new agency but we feel there is an immediate need to assist in reducing these appalling statistics and to demonstrate that publicly operated clinics will be helpful in effecting this reduction.

There are 29 States and the District of Columbia that now have publicly supported clinics including the most recent one in Corpus Christi, Texas, that, like Cleveland, is composed of a population that is 60 percent Catholic and we feel that the time has arrived when Cleveland's Division of Health must find ways and means to provide these services.

The Director of our Health Department has indicated his awareness of these health problems and of the gap between services offered and the potential consumer and of the need for more realistic programs. A community group that I represent has established a pilot demonstration clinic on E. 81st Street between Hough and Chester Avenues to show how *some* services can be offered to those who need them and how people can be encouraged to take advantage of them. In the hope that you may be assisted in a do-it-yourself program if you find similar statistics in your hometown, we present here an orderly sequential approach that I wish we could have followed.

There are two major ideas I would propose: I. It is necessary to develop community understanding and obtain its support. II. It is necessary to develop understanding of the patient and to obtain her support.

The development of community understanding and support is the most important step in the implementation of family planning and the following techniques are required.

A. DOCUMENTATION OF THE NEED

Documentation of the need for family planning services is the most effective means of developing understanding and support. Specifically, the statistics collected by both Community Action for Youth and the Health Council of the Welfare Federation have been most helpful to us.

B. LEARN THE BACKGROUND OF COMMUNITY ATTITUDES

President Johnson's "War on Poverty," the state of the Union speech, the Supreme Court decision re Connecticut, the recent amendment of the Birth Control Act in Ohio, statements endorsing birth control by the major American Protestant religious denominations, policy statements by the American Medical Association and American College of Obstetrics and Gynecology endorsing family planning consistent with the religious and moral convictions of those served, a recent treatise by Allen Guttmacher for the Cleveland Health Goals project, and the imminence of new considerations by the Vatican Council have had immeasurable value in establishing a less negative community attitude. These combined with maternal health's long-standing and well-established community image espousing responsible parenthood have resulted in little or no opposition to our new clinic.

C. BUILD ON EXISTING ACTIVITIES

Opening our clinic was much easier because the location was preestablished and a survey of the area made by the requesting agency indicated great neighborhood receptivity. Our invitation came from a well-respected neighborhood settlement house in the heart of the Hough Area which has been very effective in the past in completion of many area projects. This Center has a close tie to the surrounding clergymen, good rapport with the people, and is staffed by a dedicated group of well-trained social workers who speak the language of the people they serve. We have learned much in relation to our clients from these social workers and were thereby enabled to accept techniques of patient finding which were novel to us.

D. ESTABLISH LIAISON WITH OTHER GROUPS AND AGENCIES

Early in 1965 when the Cleveland Medical Association was requested by Bell-Goodrich Center to establish a birth control clinic there, we were able to call upon the Urban League, the Maternal Health Association, the American Cancer Society, and Family Health Association as the major supporters of our program. This organizational support should not be construed as sponsorship and the liaison established does not compromise any of these organizations. Simultaneously, we suggested that Bell Center obtain the support of the clergymen in the neighborhood.

At our last ACOG Convention in San Francisco, we were told that sex education is a physician's responsibility. Having good intentions, I analyzed my capabilities only to find to my deep chagrin that the social values that were valid in my private practice were not applicable to the teenagers I had been requested to teach here. However, the Family Health Association has a trained faculty, has worked in Hough in the past, and will support our efforts with a sex education program. Our physicians and nurses as spectators will probably learn as much as the teenagers do as students.

Since we are not a treatment facility per se, any pathology found is referred to the appropriate hospital clinic on the basis of location of residence of the patient. Venereal diseases discovered are referred to the Health Department Venereal Disease Clinic at City Hall.

We have also attempted to solicit direct referral of public assistance recipients through Welfare Agencies since Ohio's amended law became effective on September 28, 1965. Our arrangements have not been completed but seem promising.

E. OBTAIN PHYSICIAN SUPPORT

The Cleveland Medical Association has 70 to 75 Negro physicians as its membership and is the local constituent society of the National Medical Association. All of these men and women are members of the Academy of Medicine and the American Medical Association but have historically felt the need for continued existence as an ethnic group in order to best serve the peculiar needs of the Negro community. Certainly the statistical conditions delineated above represent a natural area of concern for these physicians and they have consequently worked as volunteers in our clinics every Wednesday afternoon since April 15, 1965. This sacrifice of golf and leisure time has been amply rewarded by the gratitude expressed by the people served.

The breadth of the program, which includes pelvic examination, PAP and Neisseria spreads, birth control services and supplies, sex and reproductive

education, and teaching about the early detection, recognition, and prevention of cancer offers sufficient variety to attract physicians of all persuasions.

A bonus has been the opportunity to enable general practitioners and specialists to work together toward a common goal. Generalists have not been able to participate in large numbers in many previous programs but are the backbone of our volunteer group in prescribing birth control pills or the rhythm system where appropriate. One Wednesday per month is staffed by a gynecologist who will see those patients found to require more specialized techniques such as diaphragms or IUD's. It is also my hope that we may obtain the support of the Cleveland Society of Ob-Gyn and we will also attempt to find support from the Academy of Medicine.

F. USE CARE IN NAMING THE CLINIC

Our Board decided that the time had arrived to spell out the major function of the clinic in its title. We felt that a less sophisticated clientele should not be confused by the title and also felt that if this name, "Birth Control Clinic at Bell Center", could be used without engendering community opposition, that this would make future disguises of name in our town unnecessary.

G. IDENTITY AIMS AND GOALS

We hope to help reduce some of the misery the statistics reflect; to provide combined services not now available in this location for people reluctant to leave the area; to assist in the education of a segment of the population that inherently distrusts and instinctively rejects any interference with its sex life; and to demonstrate to our Division of Health some alternative techniques to attract those who are in need of the services offered. In accomplishing the above goals, we would hope to develop a nucleus of people in our community who will help convince City Hall of the need and desirability of multiple public clinics throughout the City, and of the saving of human resources and the savings of welfare funds that would result. We have not yet obtained financial support though a grant has been requested.

Major Idea II. Develop understanding of the patient and obtain her support

Understanding the patient demands that (A) we determine the major characteristics and cultural patterns of the people to be served and (B) to investigate their attitudes, fears, misconceptions, and myths and then (C) to use all possible techniques of patient solicitation.

A. Some of the conclusions

The following is a list of some of the conclusions from "Growth of U.S. Population" just published by the National Research Council and thus help to understand the patient's characteristics and cultural patterns.

1. 90–95 percent of American couples approve of family planning but 14 percent of American couples don't use and don't plan to use contraception and 20 percent who have tried, failed either because of lack of motivation or ineffectiveness of method.
2. The highest proportion who don't use contraception or have unintended children are nonwhites who live in the rural south or have a rural southern background.
3. Poor families do not want more but have more children than higher income families because of lack of information or resources.
4. Low income families do have more children but the difference is not great (less than 1 above the average for higher income families).
5. Even though the larger number of children have little effect on average family size or on total number of children born, or on U.S. birth rate, it has a profound effect on the underprivileged family itself.
6. Unwanted children occurred in 17 percent of white couples and 31 percent of nonwhite couples (if the wife's education was grade school or less, this was 32 percent for the white and 43 percent for the nonwhite).
7. Failure to use effective methods is probably one of the most important reasons for illegal induced abortions.
8. An even larger number of couples increase their families more quickly than they desire.
9. The deformation of character and personality culminating in juvenile delinquency often results from the feeling of having been rejected (much more apt to happen as a result of an unwanted pregnancy).

The Livingstones, two social workers in Columbus, Ohio, completed a study titled "The Implications of Unwanted Pregnancy Among Public Assistance Recipients" in March, 1964, and their conclusions shed further light on the difficulties. (1) 50 percent of all children born to these families were unwanted. (2) These unwanted pregnancies added to the financial responsibility of the welfare agencies, the community agencies, and caused and aggravated serious problems to the family itself.

The direct cost of confinement and the cost of health problems related to pregnancy were borne by county relief. Some families became chronic relief recipients dependent on many categories of aid as the father's ability to support the increasing family diminished. Expenses to schools, public health agencies, state hospitals, child guidance clinics, courts, and penal institutions were all increased. Welfare expenditures were increased and the family's ability to remain self-supporting and maintain a standard of living was lost by reduction of family income by the mother's incapacity to work as a second breadwinner. (3) The mother's health was seriously impaired by and marital discord was caused or aggravated by frequent and unwanted pregnancies (greater than 4).

This resulted in separation, desertion, divorce, abusive treatment of the wife, alcoholism, misdemeanors, infidelity of both parents, and behavior problems in the children as family deterioration set in. Marked mobility resulted from the above preventing any stability in a neighborhood or in schools. These then are the major characteristics, traits, and cultural patterns of the patients we seek to serve.

B. Investigate attitudes, fears, misconceptions, and myths

As we conceived of the "wonderful" services to be rendered in our clinic, we anticipated door-shattering crowds. Sobering consultation with the area social workers made us aware of the need to combat a multiplicity of myths, the backlog of hysteria produced by concern for embolisms, and the ubiquitous fear of cancer. We also developed a more reasonable definition of the term "lack of motivation." This factor is closely related to the burden of many children in the home with or without a male father figure, the lack of transportation, the lack of suitable clothing for appearance in the clinic, and general reluctance on the part of patients in these areas to leave a familiar neighborhood setting to attend planned parenthood clinics. We also became aware of the relative indifference, if not hostility, of the male consort to responsible parenthood, produced in part, we found, by similar indifference on the part of our legal and social agencies to insist that these males support their families.

C. Use all possible techniques of patient solicitation

To open the doors is not enough. The most effective source of growth in any medical practice is word of mouth referral by satisfied patients. This source has less than its usual effectiveness here for two reasons. The patient's domestic status may make it difficult to notify her friends that she's using birth control techniques for fear of announcing infidelity, and second, the wide practice of "granny" medicine has not kept pace and the patient's home consultants may advise strenuously against her new techniques of birth control.

Publicity by way of mass media has been handled in a somewhat delicate manner. There was television newsreel coverage of our first day of operation and there have been many subsequent stories in the weekly newspapers as well as the area radio stations that have special appeal in this sector of the city. Especially helpful have been the ladies morning coffee shows. More of this is planned now that we are cloaked with legality.

Handbills and fliers have been distributed throughout the immediate neighborhood and in area food stamp offices and the county relief and welfare offices.

Our most effective technique, however, has been the use of direct contact by social service staff aides. Initially, we had three part-time aides who were directed to known large families and also went on a door-to-door campaign on random streets or in areas of high concentration of children (in our block there were 659 children representing 150 families '63).

These staff aides also serve to activate neighborhood church and social groups, street clubs, and area councils. They arrange for babysitters, transportation, and extend reassurance and support insofar as manner of dress is concerned. These trojan efforts have provided a small but constantly increasing number of patients, now numbering over 120 new patients. Even with these hand-holding methods, there still is some attrition between the number of promises made and the number of appearances made. We may have to pass out Eagle stamps.

We have also made direct contact by another gimmick. Our largest turnout was an evening meeting where two Cancer Society films, "Time and Two Women" and "Breast Self Examination" were presented by one of our physicians. Many of these women—actually more fearful of Cancer than pregnancy—did return for birth control services. Sex and reproductive lectures may have similar yields in attracting patients for family planning in addition to the intended improvement of sex education passed on to their offspring.

During the Papanicolaou campaign conducted last year by the Academy of Medicine and the American Cancer Society, the Central and Hough areas were poorly represented in the large number of women who did get PAP spreads. Now, however, many women in the area have finally accepted the idea and mastered their fears sufficiently to come in for PAP spreads and stay to hear about birth control services as well. Direct contacts are also made by a group of settlement house volunteers known as the Eastern Hough Family Life Advisory Committee. They assist in making contacts for the staff aides and also help to create an aura of community acceptance of the techniques involved and to promote the general idea of responsible parenthood. In addition, there is a staff of five volunteer registered nurses most of whom, incidentally, are wives of physicians. Our nurses pre-teach the patient, then reinforce the physician's instructions for the method chosen. We also have a clinic secretary on loan from Community Action for Youth.

In summarization, Cleveland, in areas of economic deprivation, demonstrates serious risks and complications attendant to pregnancy which demand attention by the medical profession.

Improved maternal and infant care will be provided by the proposed federally supported project of the Children's Bureau but the immediate need for publicly supported birth control clinics in being illuminated by a pilot demonstration project which is attracting a steadily growing number of patients. We have enumerated some basic steps in implementation of family planning in our community and several novel techniques for attracting our patients. To recant these:

I. Develop community understanding and support by documenting the need for family planning services, learn the background of community attitudes, build on existing activities, establish liaison with other groups and agencies, obtain physician support, use care in naming the clinic, and identify your aims and goals.

II. Develop understanding of the patient and obtain her support by 1) determining the major characteristics and cultural patterns of the patients, 2) investigate their attitudes, fears, and misconceptions, and 3) use all possible techniques for patient solicitation. All of these and many more may be necessary in your location and must be custom-tailored.

Organized medicine must exert a greater positive influence on the American way of life if a greater society is to be achieved. I am very happy to announce for the first time that as of this week, pursuant to amendment of Ohio's Birth Control Law, our Division of Health is no longer opposed to public birth control clinics! Implementation will require active support by the Cleveland Society of Ob-Gyn, the Academy of Medicine of Cleveland and of District V, A.C.O.G.

Senator GRUENING. Senator Dominick wanted to present Senator Bermingham, but Senator Dominick has not arrived. I wonder whether we could, under the circumstances, pass over Senator Bermingham for the moment and ask Dr. William Vogt to testify.

BIOGRAPHIC STATEMENT: WILLIAM VOGT

Dr. William Vogt is an ecologist. He was born in Mineola, N.Y., on May 15, 1902. He received his A.B. degree in 1925 from St. Stephens College which we now know as Bard College. In 1953 he received his doctor of science degree from Bard College. In 1959 he was married to Johanna von Goeckingk.

From 1930 to 1932 Dr. Vogt was assistant editor of the New York Academy of Sciences. He was curator of the Jones Beach State Bird Sanctuary from 1932 to 1935.

He was editor of "Bird-Lore" (now the "Audubon") magazine from 1935 to 1939 and at the same time was field naturalist and lecturer for the National Association of Audubon Societies.

From 1939 to 1942, he was ornithologist, Compania Administradora del Guano, Lima, Peru, and in 1942 he studied in Chile on a fellowship for the Committee for Inter-American Artistic and Cultural Relations.

Dr. Vogt was a consultant for the War Department in 1942.

He was associate director of the Division of Science and Education, Office of the Coordinator of Inter-American Affairs in 1942–43 and Chief of the Conservation Section of the Pan American Union from 1943 to 1949.

He has been a national director of the Planned Parenthood Federation of America and has been a delegate to the International Planned Parenthood Conferences in India, Sweden, and Japan.

Dr. Vogt's work in the conservation field has been honored many times. In 1949 he received the Mary Soper Pope Medal. He received the Lasker Foundation Award in 1951.

He is a member of many associations concerned with conservation, public health, geography, and ecology in this country and in other lands.

Dr. Vogt is the author of many books and the contributor to many magazines. He lives in New York City.

I will at this time direct that his official biography be placed in this hearing record preceding his testimony.

(The material referred to follows:)

EXHIBIT 116

DR. WILLIAM VOGT

(Biography)

Ecologist; born Mineola, N.Y., May 15, 1902; s. William and Frances Bell (Doughty) V.; A.B., St. Stephens (now Bard) Coll., New York, 1925; Sc.D., Bard College, 1953; m. Johanna von Goeckingk, Dec. 26, 1959, Assistant editor N.Y. Academy of Sciences, 1930–32; curator Jones Beach State Bird Sanctuary, 1932–35; editor Bird-Lore (now Audubon) Magazine, and field naturalist and lecturer for National Association Audubon Societies, 1935–39; cons. Ornithologist, Compañía Administradora del Guano, Lima, Perú, 1939–42; studied in Chile on fellowship of Com. for Interamerican Artistic and Cultural Relations, 1942; expert consultant, War Department, 1942; asso. director, Div. of Science and Education, Office Coordinator Interamerican Affairs, 1942–43; Chief Conservation Section, Pan American Union, 1943–49; national director Planned Parenthood Federation of America, 1951–61, Member national Board of Directors, Planned Parenthood Fed., delegate to the International Planned Parenthood Conference, Bombay, India, 1952, Stockholm, 1953, Tokyo, 1955, Delhi, 1959; Latin American consultant, Conservation Foundation 1963, Secretary, 1964. Recipient field research prize, Linnaean Society, N.Y., 1938, Mary Soper Pope medal, 1949, Lasker Foundation award, 1951, Guggenheim and Fulbright Fellow, Scandinavia, 1950–51, Fellow A.A.A.S., American Ornithologists Union, N.Y. Zoological Society (Fellow), American Public Health Association, Soil Conservation Society of America (Fellow); Linnaean Society of New York (former pres. and sec.), Ecological Soc. America, International Soc. for General Semantics, British Ecological Society, American Geographical Society, Sociedad Geográfica de Lima, Sociedad Mexicana de Historia Natural, also Population Association of the U.S. Clubs; Cosmos, Century Association.

Senator GRUENING. It might be well to have a list of some of the books that you have authored, Dr. Vogt. The Library of Congress has provided the subcommittee with a list. We will be glad to include

it. If you can give us a more complete list, we would like to have it. I think a man's literary productions are an essential part of his career.

(The bibliography referred to follows:)

EXHIBIT 117

A BIBLIOGRAPHY OF WRITINGS BY WILLIAM VOGT (1902–)

(Prepared by Adrienne Driben, Government and General Research Division, Library of Congress, Washington, D.C.)

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No Bread, No Circuses. "Saturday Review" 37: 13, March 13, 1954.
Birth Control Woes; India and New York. "Newsweek" 41: 62, January 26, 1953.
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Senator GRUENING. We are happy to have you. Will you proceed?

STATEMENT OF WILLIAM VOGT, SECRETARY OF THE CONSERVATION FOUNDATION

Dr. VOGT. Thank you, sir. I shall send in a list and not bore you at the present time.

This testimony is offered as a personal view. The Conservation Foundation with which I am affiliated has not formalized its position on some of the detailed matters I should like to offer for your consideration.

"EVERY CHILD A WANTED CHILD" NOT ENOUGH

During the past decade or so it has become increasingly clear that the size, rate of growth and distribution of human populations, with all their manifold activities, affect nearly every aspect of human welfare. We have outgrown the simple concerns of Margaret Sanger, great though they were in her pioneering period, and it is imperative that we look far beyond the simple slogan of "Every child a wanted

child." An understanding, in depth, of phenomena governed by human populations in their multiple environments, is necessary for the welfare of mankind.

". . . ECONOMIC DEVELOPMENT MAY BE DEFEATED BY EXCESSIVELY RAPID POPULATION GROWTH"

As we have grown in the understanding of man's ecology—his relationships with his environment in their widest and fullest senses—it has become clear that we must concern ourselves with much more than balancing death control with birth control. A notable change was obvious, for example, at the meeting of the Society for International Development in New York 3 weeks ago where, for the first time, there was a general recognition that economic development may be defeated by excessively rapid population growth.

"WE ARE STILL SPENDING AT LEAST 1,000 TIMES AS MUCH ON DEATH CONTROL AS ON BIRTH CONTROL"

A few people were worried, in 1949, when President Truman announced his Point IV program, because of its possible impact on populations. Since 1950, world population has increased over 25 percent and the number of people added nearly equals the total world population in 1800; most of the recent growth has taken place in countries where we initiated Point IV and other aid programs. The chief cause of expansion, as has been repeatedly pointed out to this committee by other witnesses, has been a sharp drop in death rates (which we have notably accelerated) without a comparable drop in birth rates concerning which, until very recently, we have maintained a "do-nothing" policy. We are still spending at least 1,000 times as much on death control as on birth control.

My remarks today are in a sense an extension of testimony before the Special Senate Committee to study the Foreign Aid Program before which I was privileged to appear on the 15th of April 1957.

". . . DESTRUCTIVE PRESSURE OF HUMAN POPULATION ON NATURAL RESOURCES"

My concern about population control grew out of research and conservation work in Latin America, beginning in 1939, where there is and has been for many years a destructive pressure of human population on natural resources. The apparent lack of interest of our foreign aid administrators and policymakers in the maintenance of an environment that could decently support a rapidly growing population has left me with a sense of bewilderment. I trust that this committee will mention this problem to Mr. Bell when he comes before you. Soil erosion is spreading at an appalling rate, because of both bad land use and heavy population growth, from Mexico to southern Chile as well as in Africa and Asia. There are more malnourished and hungry people in Central America, today, than the total population when I first went there approximately a quarter century ago. A conservationist cannot ignore population changes.

". . . S. 1676 . . . I HEARTILY ENDORSE"

I trespass on your time with these introductory remarks as a preamble to comment on S. 1676 which, needless to say, I heartily endorse though with some minor reservations. I hope it may lay out an ever broader highway toward understanding of the population situation and more ambitious plans for doing something about it.

OVERCROWDING IN CITIES CAUSES AIR AND WATER POLLUTION

My apprehension concerning population grows, in part, from the increasingly obvious effect of population as a phenomenon, force, and process. Los Angeles is a truly poisonous city because an excessive number of people are pouring into its atmosphere the byproducts of the combustion of their fuels. New Yorkers live surrounded by a virtual sump of sewage because there are some 11 million human beings, with their supporting industrial structure, dumping their wastes into waters that have, after all, finite capacities for oxidation and transport. Diminish the population of either city sufficiently and the problems would largely vanish. Of course, this cannot be done. However these problems are solved, expense, discomfort, and probably monetary losses will be involved. We have so long had our cake and eaten it too, that real estate boards, chambers of commerce and industrialists who poison our air and water do not like to be confronted with reality—and the long overdue bill. The mere cost of separating sanitary and storm sewers, in a city like New York, will be staggering, but with such enormous concentrations of wastes, probably unavoidable. A recent hearing before Health, Education, and Welfare estimated it would take something like $470 million to do an adequate job on the sewers of New York City. We have passed the point where economics can be the primary, or even an important, concern. We are now being forced to adjust ourselves to the reality of atoms and molecules organized as both plants and animals, and into environments with complex structures.

THE LATE J.F.K. ". . . DREW PARALLELS BETWEEN HUMAN AND LEMMING BEHAVIOR"

Ecologists have long been concerned with what we call density dependent phenomena, by which we mean the effects of concentrations of living organisms. John F. Kennedy, before he was President, made a little noticed speech in which he drew parallels between human and lemming behavior. Few statesmen, it appears, have approached his understanding. They are now talking about "saving" the beauty of the Hudson Valley under the pressure of a future 30 million inhabitants, as though this would be possible.

CLIMATE GOOD FOR CARS—NOT FOR PEOPLE

New York's city fathers, by some twisted logic, have continued to pile people higher and deeper and, under the gentle pressures of our traffic commissioner, Henry Barnes, to make the habitat as attractive as possible for the automobile, thereby increasing its numbers and, in view of finite space, its density. Even parts of our national parks,

notably Yosemite, Yellowstone, and Great Smoky, on Sunday summer afternoons look like New York's Fifth Avenue.

Far in front of most political leaders at the State level has been Governor Brown of California, who reported to a January symposium at the University of California Medical School:

> There is, in short, a growing realization in California that uncontrolled population growth is a serious public problem and that limitation of births is an acceptable means—if not the only means—of dealing with it.
>
> Our people see with increasing clarity that the question is at once a medical problem, a social problem and an economic problem.

The Governor might well have added that it is a biological problem and an ecological problem—a health problem before it becomes a medical problem.

Wide, informed, and penetrating discussion of the problem is needed since it cannot be solved easily. We must concern ourselves not only with how many people there are, but where they are. California has unhappily oversold its charms, many of which have been destroyed as a result. A few communities in New York State, recognizing that they are running out of water or sewage disposal facilities, have begun to post "No Admittance" signs. This is a practice, in view of the limits of space and other resources, that must inevitably be extended.

". . . ONLY ONE WORD . . . HAS SLOWED POPULATION GROWTH . . . 'NO' "

I am concerned that S. 1676 seems so largely pointed at the verbal level, with perhaps an overemphasis on studies, information, research, reports, data, and so forth. We need more of some of these, but there is only one word that has slowed population growth, and that is "No."

While a White House Conference would place a stamp of approval on consideration of the problem, which President Johnson abundantly has, plus giving valuable educational publicity, there might not be sufficient time by January 1967 to structure understanding, as must be done.

IS TIME RUNNING OUT?

And it seems to me that there is far too little time, and this rather worries me about the bill, to organize informed and perceptive groups in the various States before the end of this year. There could be considerable danger of merely assembling meetings that would indulge in the repetition of cliches—by all kinds of people, including some economists and demographers—and where organized prejudice could be given maximum opportunity to express itself effectively if not necessarily wisely.

No one has ever accused me of excessive caution concerning the immediacy of the population problems; indeed, I have long been accused of falsely crying "Wolf." However, it seems to me that possibly a year or two of exploratory effort at the citizen level might actually speed practical action. The population problem is not likely to go away.

It is enormously complicated and no one, or no group, has all the answers. My sole reservations concerning S. 1676 have to do with tactics and since I am no expert in politics, may be quite unjustified.

We do need fresh, creative thinking of at least as high a quality as that which has produced such astounding successes in our space program.

"... POPULATION RETARDATION WILL BE A SLOW PROCESS AT BEST ..."

But effective and not symbolic or substitute action is needed as quickly as possible, since population retardation will be a slow process at best, in view of our mores. There is plenty of opportunity for "social engineering" even before we agree on a national population policy. Overseas, in many countries, the importance of slowing population growth is widely accepted, though not in all.

Senator GRUENING. Would you suspend for a moment, please?

Dr. VOGT. Surely, sir.

Senator GRUENING. Senator Dominick has just come in, and as I explained to the group here, I will have to leave in 1 or 2 minutes to attend an Interior Executive Committee meeting. I wonder whether it wouldn't be appropriate for you to introduce Senator Bermingham now, and when I return we will conclude with Dr. Vogt's testimony and then put Senator Bermingham on, but I don't want to delay you while attending a committee meeting.

STATEMENT OF HON. PETER H. DOMINICK, U.S. SENATOR FROM THE STATE OF COLORADO, INTRODUCING JOHN BERMINGHAM, STATE SENATOR FROM COLORADO

Senator DOMINICK. Mr. Chairman, I would be delighted. I very much appreciate your courtesy. I apologize to Dr. Vogt for interrupting his testimony.

I am happy to appear today to introduce a great friend of mine, a gentleman who graduated from Yale and got his law degree from Columbia, a highly intelligent and able legislator who led the fight in the State of Colorado to get through our first population control legislation that we have ever had in our State.

I am sure that the experience that he has had in the process of trying to get this legislation through, as a study of this particular field, is going to be of real benefit to this committee. So I am very happy to present, at least to the chairman at this point, the Honorable John Bermingham, a member of our State legislature, and a very good friend of mine.

Senator GRUENING. Thank you very much, Senator Dominick. You all know that Senator Dominick is one of the cosponsors of this legislation, and we are very grateful for your support. It has been enthusiastic and very helpful.

Senator DOMINICK. Thank you, Senator.

Mr. BERMINGHAM. Thank you, Senator.

Senator GRUENING. Dr. Vogt, I apologize for having to interrupt. Your testimony is very interesting. When you finish it, I would like to ask you a few questions.

Dr. VOGT. Very well, sir.

Senator GRUENING. I hope I will not have to be gone very long. I will come back as soon as this meeting is over.

(Short recess.)

Senator GRUENING. I am sorry for this regrettable hiatus in our hearing. Dr. Vogt, will you resume?

STATEMENT OF WILLIAM VOGT—Resumed

Dr. VOGT. Thank you, sir.

LUCID INTERPRETATION NEEDED AFTER STUDY IN DEPTH

The Conservation Foundation is presently financing, at the University of North Carolina—a State whose public health authorities have long been in the vanguard in providing actual family planning services and devices, incidentally with Federal funds—a series of seminars aimed at reaching a consensus on whether or not the United States should have a population policy; how it could be developed in a democratic society and put into effect in a democratic way. It is our hope that these discussions may be extended to other institutions. The subject of human reproduction and population dynamics is so laden with superstitions, emotions, myths and misconceptions that it needs to be considered in depth by the best minds we have, and lucidly interpreted.

We are the supposed owners of billions of dollars, in aid-receiving countries, in blocked currencies. I strongly endorse Senator Yarborough's amendment to the Food for Freedom Act to make substantial portions of these funds available to governments requesting them for population control. This would be especially helpful in the countries, of which there are many, where food production per head and per acre is dropping, where lands are being eroded into deserts, where education is falling behind in the race with population and where overpopulation is richly fertilizing societies for communism without help from Castro, Mao, or the Russians. It would also demonstrate the soundness of President Johnson's observation that a few dollars spent on birth control would accomplish more than many times the same amount spent on development.

"THE BILL S. 1676 IS ESPECIALLY COMMENDABLE IN THAT IT RECOGNIZES THAT WE . . . HAVE A POPULATION PROBLEM"

The bill S. 1676 is especially commendable in that it recognizes that we, as well as other countries, have a population problem. We have reached the point, it seems to me, where we can no longer afford to ignore the advent of scores of millions of more bodies in our limited space, and the means of fueling them and disposing of their wastes. It is time to substitute biophysical criteria for the economic. After all, the millionaire's family of eight children—which he can well "afford"—occupies more space, consumes more raw materials—thus helping to exacerbate our balance of payments problem—and pollutes both air and water more than four times the rate of the schoolteacher with two children who has a lower material living standard.

Biologists, especially ecologists, have long since learned that if an area can be made sufficiently attractive to an organism, if its needs can be met, it tends to increase up to the carrying capacity of the environment, the food-shelter-tolerance-water complex. Pheasants, deer—when natural enemies have been destroyed—city pigeons, and less visible forms of life such as bacteria, the protozoans that cause malaria and the trematodes that cause bilharzia, another widespread tropical disease, are well-known examples. Much disease control is no more nor less than limiting the numbers of pathogens. The more

highly evolved forms, however, have generally developed built-in checks that hold their numbers below the carrying capacity of the environment. Birds, for example, dominate territories and when an area reaches a certain density, males—usually—are driven off and mating is made impossible. A fascinating survey of scientific literature on this enormously complex subject has been written by Dr. V. C. Wynne-Edwards of the University of Aberdeen and published under the title "Animal Dispersion in Relation to Social Behavior."

"... WE CROWD FAMILIES THROUGH SUCH DEVICES AS ... SUBSIDIZED HOUSING FOR THE REPRODUCTIVELY IRRESPONSIBLE ..."

Man, unfortunately, seems to have lost the species wisdom that has protected less highly evolved forms during millions of years before man existed. We move energy—food—half way around the earth, from Kansas to India, and thus help to swell the breeding population; we crowd families, through such devices as high-rise apartments and subsidized housing for the reproductively irresponsible, without taking into account the full gamut of emotional and psychological human needs, as well as those for food and shelter. Much of the social pathology of our cities, as Dr. Martin pointed out, such as broken homes, riots, dope addiction, environmental destruction and irresponsible reproduction seems to grow largely out of human densities that in New York City in some census tracts reach 386 per acre—an acre, you will remember, is just 210 feet on a side—or at the rate of a quarter-million per square mile. To bring in food, carry waste away, house, educate, clothe, employ and provide health, exercise, and recreation for such a vast concentration of human beings requires, surely, an enormous expenditure per capita. New York spends hundreds of millions of dollars—but not nearly enough to provide anything like a decent living for these piled-up masses. Here we have density-dependent misery. I doubt if Calcutta equals this crowding, if only because they do not pile people layer upon layer.

WE DO NOTHING TO DISCOURAGE CROWDING

The cost per human unit, to provide a decent life under such crowded conditions, must rise nearly as fast as the number of potential contacts among them. The hostility visible in crowded buses and subways across the land is an indication of the toll taken by crowding. A California study recently showed that men working under some of the highest pressures, such as running a daily newspaper, suffered greatest hypertension during the drive to work on crowded freeways. Yet we do nothing to discourage such crowding—either by attracting people to other environments, or encouraging people to limit their numbers to a manageable level.

If I were a Californian or Floridian I should work for a heavy "new resident's tax" or a "settlement tax" covering, let us say, the first 5 years of either working or retirement, and sufficiently large to cover per capita costs of schooling, water, sewerage, roads, et cetera.

We might well offer tax incentives for retirement in States that have been losing population or have very low densities. It is difficult to see how the Great Society can be developed in such growing complexes as Los Angeles, Miami-Fort Lauderdale, or the northeastern

megalopolis from New Hampshire to Norfolk. On the other hand, retirement in Vermont, the Ozarks or near the Black Hills would have much to recommend it. With our increasing population of oldsters, plus earlier retirement on pensions, such areas might be able to draw away 30 to 50 million, or even more—a not inconsiderable population—by the end of the century.

We should refuse all sorts of additional subsidies from Federal funds for services such as the transport of water until populations have been stabilized; what is the point of building up Arizona's population with Colorado water so that it will have to have ever more water? We should not forget that there is already serious discussion of importing water from Canada which, at this writing, seems not entirely enchanted with the idea.

There are nearly a quarter million illegitimate births a year in the United States and 22 percent of first children born to white mothers arrive in less than 9 months after marriage. According to the National Academy of Sciences report, in 1960, 45 percent of women with more than three children stated their last pregnancy was unwanted.

To provide birth control services for these people has become a major and increasingly pressing public health problem, a problem of the health of the mother, the community, and not least, of the unwanted child.

DOES MISERY DOUBLE WHEN POPULATION DOUBLES?

I should like to make clear, before closing, that I consider our foreign aid program picayune, both in terms of the needs and in view of our own luxurious living. Foreign aid amounts to only about one-half of 1 percent of our gross national product, less than we spend on liquor, cosmetics, tobacco or perhaps even the care and feeding of our pets, while men, women, and children suffer pain and hunger at a level of intensity that is more than doubling every generation, if only because human populations are doubling at about that rate. On the other hand, there are many parts of the world where, lacking effective population control, we might better spend nothing on foreign aid since there we are literally exacerbating misery and destruction of the human habitat. The chief force is, of course, excessive population growth.

"SENATOR GRUENING AND HIS COLLEAGUES HAVE PUT ALL AMERICANS IN THEIR DEBT BY FOCUSING ATTENTION ON THIS PROBLEM"

Laisser-faire in the matter of population is as out of date as *laisser-faire* in economics. We must make it possible, within the democratic framework, not only for people to limit their families if they desire: no woman should ever be forced to bear an unwanted child. But we should also provide incentives to families to bring into this world only the children for whom there can be an opportunity for a good life. S. 1676 could be the first long step toward such an end. Senator Gruening and his colleagues have put all Americans in their debt by focusing attention on this problem and providing an approach to its solution. Thank you.

Senator GRUENING. Dr. Vogt, we are very grateful to you for a very wonderful, comprehensive, and lengthy paper. You have spoken very forthrightly and properly so. Those of us who have been concerned

with this problem for a long time feel that action—which we are now hoping will be taken—is long, long overdue.

When I first became interested in this problem over 50 years ago, it was for different reasons. It was a matter of family planning, the right of parents to determine how many children they should have and when. But since that time medical science, the achievements in medicine, surgery, pharmacology, sanitation, immunology, all these things have created a population explosion, and that is why we have suddenly had attention focused on it as never before. Both of these aspects are extremely important, and you have signalized them very well.

"... ONE OF THE GREAT CHARMS OF ALASKA IS ITS VASTNESS ... WILDERNESS IS AT OUR DOOR"

You know on this you have made some very original and pertinent suggestions, on the question of settlement. Of course you are aware of the fact that the chambers of commerce view is that the more people you have the better off you are. I know that since we have had statehood, various people have asked me hopefully whether our population has increased very substantially since statehood, and I give my view that I am sorry it hasn't increased substantially, but I hope it will stay small for a long time to come, because one of the great charms of Alaska is its vastness, the fact that the wilderness is at our door.

In time I hope the population will increase, but in the meanwhile we can preserve all our natural wildlife, our fisheries unspoiled. I am glad to see that Governor Brown has faced the fact that the State of California is no longer the beautiful State that it was, and that his great crowding has very fundamentally altered the character of what was once perhaps the most beautiful State of the old 48, and I hope we can do something about this.

You have some criticisms of this legislation. It is merely an entering wedge. When this was first introduced about a year ago, it was considered a very politically risky venture.

Some of my friends told me that it was political suicide, and I said, "Well, if so, so be it, but I don't think so," and I didn't think so then. But we have to make a start, and even now I suspect that there will be considerable timidity on the part of the executive agencies. I suspect that they will not accept these rather minor recommendations of two positions of assistant secretaryship.

I think they will try to settle for something less, and I think this is the least we should have, because we at least have to dramatize this program and show the Government's determination to do something about it. We should do far more than this—as specified in this legislation.

I would like to make one minor correction. You say "Foreign aid amounts to only about one-half of 1 percent of our gross national product." I take it our gross national product is in the neighborhood of $700 billion now. The foreign aid program which is presented to us every year as a barebones program, $3,200 million, is less than half the program. Those who present that ignore the fact that we dish out several billion dollars in loans, few of which will ever be repaid, and there are at least a score of other spigots in which foreign aid is funded, and this is something which the Congress doesn't fully appreciate be-

cause it is not presented in that forthright way, but it is a fact that our foreign aid programs total at least $7 billion a year, if not more. That is a minor thing but——

Dr. VOGT. Thank you for the correction.

Senator GRUENING. I think you have accepted the statement that when we are asked to vote $3,200 million, that that is a barebones program and that is all, but it isn't.

Dr. VOGT. Is this all on the civilian program or does this include some of the military?

Senator GRUENING. It includes all the various things, civilian and military aid. I mean that in the $3,200 million we are told is a barebones request the Food for Peace program is not included, all the loans are not included, and we have half a dozen different lending agencies, many of which lend at terms that do not constitute a loan at all—three-quarters of 1 percent and no repayment of principle for the first 10 years. That is not a loan but a grant.

We know perfectly well that those loans will never be repaid, and that when the time comes where they come due, the first step will be not to say that they are in default but to say that they will be refunded, and that will go on for several years, and by the time that is worn out, those then in charge of our program will say: "Well, I wasn't here when that loan was made. Let's forget it."

Now, you say on page 725 that "22 percent of first children born to white mothers arrive in less than 9 months after marriage."

"PREMIE" BABY OR SHOTGUN MARRIAGE?

Do you mean that conception took place before marriage or that these are premature children or both?

Dr. VOGT. Too many to be "premies" I think, sir. Possibly shotgun marriages.

Senator GRUENING. Well, this has been a very, very helpful statement. I would like to ask you one more thing.

When you talk about these meetings, on page 721, "There could be considerable danger of merely assembling meetings that would indulge in the repetition of cliches—by all kinds of people, including some economists and demographers—and where organized prejudice could be given maximum opportunity to express itself effectively if not necessarily wisely," what kind of prejudice do you have in mind?

Dr. VOGT. I was thinking largely of religious prejudice, not entirely Roman Catholic, because some of the fundamentalist sects are even more rabid on this subject than the Roman Catholics.

VOGT APPLAUDS GRUENING'S IDEA OF STATE MEETINGS

I think your idea of State meetings is a marvelous one, but I just think that as a practical matter it might be better to develop them a little more deliberately than there would be time to do, before the end of the year.

Senator GRUENING. Thank you very much, Dr. Vogt. We are grateful to you for coming down from New York and giving us this fine presentation.

I have enjoyed reading two of your articles in the "Conservation Foundation Journal." I now direct that these articles—"Continuing Population Pressures—1964" and your "Review of Ongoing and Completed Projects"—be placed at this time in the record of this hearing.

I would like to cite a quote from your book "People!" published in 1960 which states:

"Assuming that you have a normal pulse beat, it will not quite keep up with the increase in world population. Every time your pulse throbs, the population of the world will have added more than one human being."

(The articles referred to above follow:)

EXHIBIT 118

CONTINUING POPULATION PRESSURES—1964

(By Dr. William Vogt, Secretary of the Conservation Foundation; Conservation Foundation Journal, pp. 8–12)

Never, since the world began, has there been so much talk about population as there was in 1964. It was discussed at highest governmental levels in many parts of the world, including the United States. It was debated in the U.S. Congress. There was wide recognition within delegations to the United Nations Organization that population growth is having deleterious effects on health, nutrition and economic development.

Welfare Departments in cities across the United States began to complain publicly at the high cost of excessively large indigent families; the rebuilders of the Great Society noted that poverty pockets, as in Appalachia, were characterized by the multiparous. The American Medical Association, more than a half century after a public health nurse, Margaret Sanger, began her campaign for contraception as an aid to maternal health, finally gave birth control its approval.

The Vatican's Ecumenical Council acknowledged rapid population growth as a religious and eccelesiastical problem. No decision was reached in Rome, however, and the problem of birth control was tabled, presumably until the Council reconvenes in the fall of 1965.

Newspapers and magazines in the United States gave such space to population and discussed it in such frank language as would have been almost unthinkable a decade earlier. "Birth control" is no longer a taboo subject as leaders of all stamps come to recognize the manifold difficulties posed by population growth.

People not only talked about population. Unlike the weather-discussants in the famous aphorism, they did something about it. There were nearly 130,000,000 babies born—4,000,000 of them, or the equivalent of our total 1776 population, in the United States alone. Counting all the deaths, our net world growth was about 65,000,000 people.

While there was relatively large increase in verbal activity, which governmental and international organizations too often substitute for effective action, much as the herring gull on its home territory substitutes posturing for actual combat, there was little progress in effective separation of sperm and egg. Although there was a small drop in the U.S. birth rate, undoubtedly in part the result of wider use of oral contraceptives, a University of Michigan study published in April indicated a slight increase in the number of children "expected" by North American women. With something over 40% of our population still under 20 years of age, and the strong pro-natalist policy of our government, a rise in the number of our births would not be at all surprising, especially since the population of women in the child-bearing age will probably double between 1960 and 1990. Our present population approximates 194 million. Unless our pro-natalist policy is vigorously and effectively changed, a U.S. population of 325 million seems highly probable and 375 million far from impossible by 2000.

The acceleration in world population growth threatens a total of 7,000 million by 1999.

There are some indications in non-Christian populations, as in Taiwan, that the availability of birth control, supported by educational campaigns, is beginning to depress birth rates. Sociological research projects following the pattern of those developed in the Caribbean in 1953 by the Conservation Foundation, have been started in a number of underdeveloped countries. In view of wide cultural disparities, the need for rapid expansion of such research is obvious.

That world growth is, to a large degree, the result of American government activities should, perhaps, not surprise anyone, despite Washington's indicated concern over sharply rising populations. It is all too common, in U.S. government operations, for one department to defeat the purposes of another. For decades the Department of Agriculture has been draining marshes and pot holes while the Department of the Interior has been maintaining and extending them.

In 1963 an advisory committee to the Secretary of the Interior produced, under the chairmanship of our adviser Dr. A. Starker Leopold, a policy report that may well become an ecological classic. While it was primarily concerned with wildlife management in national parks, it concisely stated ecological principles that are as pertinent to human as to elk or deer populations.

The committee pointed out the necessity of "maintenance of suitable habitat" in sustaining animal populations. Where animal populations get out of balance with their habitat and threaten the continued existence of a desired environment, population control becomes essential. "This principle applies . . . where populations have exceeded the carrying capacity of their habitat through loss of predators . . ." The report makes only passing reference to the practice, by now more or less outmoded, of artificial feeding of excessively large populations.

The structure of the biological thinking behind this policy recommendation is quite as applicable in foreign affairs and foreign aid as it is in management of domestic environments. The State Department might well consult Interior.

The American government does virtually nothing to hold down or reduce birth rates, but it spends billions of dollars through the World Health Organization, the Food and Agriculture Organization of the United Nations, the United Nations Children's Fund, CARE, "Food for Peace," AID, etc., to reduce death rates. The growing disparity between birth rates and death rates largely explains the so-called population explosion.

In Latin America almost nothing is spent, in money or man-power, on protecting the environment, through soil and water conservation, improved land-use and forest management.

The progression of world population toward 7,000 million is virtually certain to be interrupted by famine within the next two or three decades. Only the shipment of 6,000,000 tons of wheat (product of 8 million acres) averted recent catastrophe in India; its population has been increasing 11 million a year.

No part of the world is growing more rapidly than the Western Hemisphere, south of the United States. Mexico, at its current rate of increase, could jump from its present 40 million to 100 million by the end of the century; Central America, from 12 million to 40 million; and Latin America as a whole from a little over 200 million to more than 600 million.

Much of Latin America is tropical and its environment is extremely vulnerable to mishandling. Not a single Latin American country has a conservation program effective enough to prevent serious deterioration of soils, forests, grasslands and water resources. A small amount of high order research is being done, but it needs to be vastly expanded and its findings applied.

Latin America is ecologically linked with the United States. We share waters with Mexico. We depend on Latin America for many commodities—including resources in short supply here—and, despite her widespread poverty, Latin America is one of our best customers. A very high proportion of our native birds migrate to Latin America in the winter—and most of Latin America is a protein-short land where people eagerly shoot or trap almost any edible creature for the pot.

It is because of the importance of Latin America to the United States, and our concern with the well-being of the people and their land, that the Conservation Foundation is advancing its program south of the Rio Grande, beginning in Mexico and Central America.

The possibility of a quick slow-down of population growth in underdeveloped countries seems almost non-existent though every effort must be made to bring it about. Without it there is no hope of averting catastrophe.

While measures are being taken to reduce population increase, the need for protection of the land—the human habitat—each year, even each month, becomes more critical. If soil goes and watersheds are destroyed in underdeveloped countries—or our own—the possibility of decently maintaining even present populations will be remote.

The political results of such a combination of events cannot be predicted with certainty, but they will certainly create difficulties for the United States.

Latin America

CENTRAL AMERICAN STUDY CONFERENCE

Few human populations are growing so rapidly, over extensive areas, as those in Latin America. Like most tropical environments, those of Central America are vulnerable to loss of soil through destruction of vegetation, exposure to high temperatures and concentrated precipitation. To meet conservation needs will require intensive application of what is essentially ecological understanding. Dr. William Vogt of our staff has arranged for a study conference of Central American leaders to be held in 1965 to illustrate the need for such understanding by local policymakers, from presidents to newspaper publishers, from cabinet members to professors and from businessmen to planters. Latin American representatives of pertinent disciplines will define this need for understanding in relation to specific conservation problems that must be solved if the people of Central America are not to sink into grinding poverty. It is hoped that there will emerge from their discussions practicable recommendations for action that may be taken by government and private groups. This project has the endorsement of, and will be guided by, three Latin American organizations. It has also been cleared with the Central American office of the U.S. Agency for International Development. A steering committee of six Central Americans has met twice in recent months to organize the five days of meetings and two of field observation.

EXPLORATION OF RESEARCH OPPORTUNITIES IN LATIN AMERICA

Research needs in Latin America today are extensive and particularly pressing where, so far, least research has been done.

There is critical need for concentrating now on environmental improvement which includes, of course, a slowing of population growth. A few of the many research opportunities include:

1. Measurements of gross loss of land productivity;
2. Research in tropical soil ecology and management;
3. A survey of pesticide use;
4. Study of the opportunity for Latin American Protestant leadership to influence attitudes on birth control.

Exhibit 119

Review of Ongoing and Completed Projects

(By Dr. William Vogt, Secretary of the Conservation Foundation; Conservation Foundation Journal, pp. 22–24)

MAN AND NATURE IN THE NATIONAL PARKS

Dr. Darling and Noel D. Eichhorn of our staff continued their ecological reconnaissance of the national parks. In the course of the study, thus far, visits have been made to 26 national parks and 23 of the other units of the national parks system. In April 1964 an informal interim report was prepared for very limited distribution. This report made no specific recommendations but only stated questions about national park policy and management which need further study.

What is a national park for? In the language of the Yellowstone Act it is a "pleasuring-ground," but can such a national park retain its natural values if it encompasses the entire span of "pleasuring" from wilderness to dance halls to water-skiing? Many of the national parks may need the protection of mass recreation areas outside the parks.

What sorts of and how much development are appropriate in national parks? Acceptance of a need for gas stations and restaurants in Yellowstone with its 250 miles of main road is no logical precedent for similar facilities at Bryce Canyon where there are but 25 miles. What is the carrying capacity of each park for men, motors and wildlife? What are optimum uses?

How can the surroundings and approaches to the parks be protected from unsightly developments which detract from park values? The National Park system is handicapped by absence of planning authority or responsibility outside the parks. Yet adjacent communities have done little to enhance park values.

It is clear that existence of the parks brings benefits to the states in which they exist.

The surveyors are now marshalling the mass of factual information and observations accumulated over a period of more than two years, and work on the final report has begun.

ENVIRONMENTAL PLANNING

Over the years our organization has attempted, in whatever way it could, to encourage the use of ecological knowledge and method in land development programs that cause environmental change, where immediate economic considerations largely control the decisions of developers. Accordingly, it is pleasing to learn that the British Ecological Society, always interested in applied ecology, has now launched a professional organ devoted to the subject. The first edition of the new *Journal of Applied Ecology* appeared in May, 1964 and an editorial by editors A. H. Bunting and V. C. Wynne-Edwards sets forth some of the significant advances in conservation and other related fields which demonstrated the need for the *Journal*.

"Ecology is the study of the relationships between living organisms and their environment. As such it is a method of practical and intellectual approach, a discipline, rather than a coherent body of generalized knowledge; and it is indeed doubtful whether there are any ecological 'laws' or generally applicable conclusions, which hold good for all types of organisms and in all ecological circumstances. The discipline of ecology is widely employed in situations of economic or social interest to mankind, and this provides the content of applied ecology, which it is the purpose of this journal to serve. In the broadest sense, many well-established branches of applied biology are essentially ecological. Soil science, economic entomology, plant and animal pathology and epidemiology, forestry, fisheries, crop and animal husbandry and weed control are all well served by existing journals. . . . During the past 30 years, however, new frontiers have been explored in applied ecology—land use and development survey, the conservation and management of natural resources, the exploitation or control of wild or non-domestic plants and animals, the ecological genetics of the adaptation to environments or agronomic practice of economic organisms, the energy and water balances of economic vegetation, studies of the physiological bases of plant competition in crops and pastures—all these and many more are contributing to a new and recognizable field of scientific activity which it is the purpose of the *Journal of Applied Ecology* to serve and represent. . . ."

We welcome this important new journal, and recommend it to readers interested in advancing conservation here and abroad.

A report issued in 1964 by a committee of the Ecological Society of America also states that results of basic ecological research in the United States are not being adequately applied in natural resources development and environmental planning generally. The report urges professional members of the Society to speak out on questions of land policy, and also suggests that ecologists should seek and accept positions on the planning staffs of agencies and organizations whose task it is to determine the feasibility of proposed development projects which will dramatically alter the physical environment.

ECOLOGICAL GUIDELINES FOR LAND PLANNING

In seeking to influence planners from within their own profession, the Foundation invited Professor Sanford Farness, a practicing planner now at Michigan State University, to review the procedures followed in developing three major urban and regional environments of the United States, and also to suggest how relevant ecological concepts and conservation principles—as he interprets them—could have improved the land planning and development of these regions. It is our hope that the Farness report will shed light on the relationships between ecological knowledge and the planning process, and thereby stimulate needed communication among professional planners, engineers, ecologists, and resource experts toward a broader process of land-use planning than now exists.

Professor Farness has presented background papers on the subject at various conferences, and intends to complete a final monograph, summarizing his conclusions, in 1965.

THE FUTURE OF NORTH AMERICAN ENVIRONMENTS

During the year Dr. F. Fraser Darling and John Milton organized our major study conference to be held at Airlie House in April 1965. The theme of the conference is the future environments of North America. Thirty-eight invited par-

ticipants, selected by our steering committee, have accepted. The design of the conference appears satisfactory to participants from the several disciplines involved. During four days of cooperative study, the conferees will discuss the roles of ecologists, economists, landscape architects, regional planners and others in preserving habitats and scenic values. Maintenance of an ecologically diverse network of high quality environments on this continent in the years ahead will depend on timely foresight, planning and behavior. What uses, if any, should be planned for presently empty areas, and how may lost and degraded habitats be restored? Once problems and goals have been defined, the conferees will explore methods of organization and implementation to assure adequate distribution of varied natural environments in the future. The volume of proceedings, edited by Dr. Darling, will be published by The Natural History Press.

Senator GRUENING. Can man alter his future? What of the principal ecological factors to be considered? Edward S. Deevey, Jr. raised some interesting aspects related to these questions in "General and Urban Ecology." I shall direct that chapter 3, pp. 22–32, be printed in the hearing record.

(The article referred to follows:)

EXHIBIT 120

GENERAL AND URBAN ECOLOGY

(By Edward S. Deevey, Jr., "The Urban Condition," Chap. 3, pp. 22–32)

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Now I want to look briefly at population biology, which belongs to an older tradition of ecology and yet has always been a social science otherwise named demography.

The great achievement of ninteenth-century demography was Verhulst's perception that populations grow by a self-limiting process. Malthus, in the eighteenth century, merely wished he could be sure of that, and Pearl, in the early twentieth century, contributed some illustrations of Verhulst's abstruse statement, which he had rediscovered for himself after some engaging studies of fruit-flies in milk bottles and of hens in a henhouse. Since Pearl's dealth in 1940, some animal ecologists have been doing interesting things: they have found Verhulst's model not wrong, but inadequate, and inadequate in some instructive ways. As always, application of the model to a variety of animals has proved informative, and it seems that while it serves very well for ideally simple animals, such as one-celled protozoans, the farther up the scale one goes the more serious are the inadequacies.

A close look at Verhulst's model shows at once some things that are not quite right. It says simply that growth results from successive doublings of mass or numbers, 1, 2, 4, 8, and so on, but that the closer the approach to some limiting value, in a finite environment, the more the doubling rate is depressed, so that in equal intervals of time the numbers are more like 1, 1.9, 3.5, 6.5, and so on. That is what is meant by self-limitation—the population limits its own rate of increase. And Paramecium in a drop of pond water, with food kept constant does seem to obey this kind of law. But Paramecium is a semi-imaginary animal that seems to have been invented to fit the model. When one individual divides, death and reproduction occur in the same instant. So the animal defines population increase, with mathematical elegance, as "birth=death." If death and reproduction are separated in time, or befall different individuals at any moment, as they ordinarily do, one may anticipate trouble with the model's definition of increase. And even with Paramecium that matter of the upper limit conceals a paradox: at maximum or equilibrium population, when we say that the carrying capacity of the water drop has been reached, births must exactly equal deaths, so any individual that dies makes room for one new one; but if there is no room for a new Paramecium, none can be born, but neither can any old one die. What fun Aristophanes would have had with a model that predicts Tithonus' fate to be universal! *The Grasshoppers*, he might have called the play, and Athens would have laughed for weeks.

For a population coasting along at equilibrium, then, births in a sense regulate deaths and deaths regulate births, the thermostats are interlocked, or coupled, and yet some small degree of wobble is intrinsic. One feels intuitively that the

more widely births and deaths are separated in space or time, or the more different the other devices that regualte births and deaths, the greater the wobble, since increasing the time-delay in regulation amounts to insulating a thermostat. Daphnia, the water flea, is an animal designed by nature to prove this point; it sounds partly imaginary, too, being parthenogenetic, but of course all good abstractions are of feminine gender. What happens, roughly, is this: a well-fed female Daphnia can drop a clutch of fifty young, and do so every couple of days throughout a life of a month or so; but with food supply constant, the oftener she and her daughters try *that* trick, the less likely any are to be well fed. Verhulst's limitation is obeyed, but not very scrupulously, and a few mistimed clutches can make some wide misses that need to be corrected. Conversely, on the downward swing that ensues, a starved Daphnia stops reproducing and eventually dies, but the death of one adult female encourages the more rapid growth, and quicker reproduction, of several smaller and less voracious young, provided of course there are any young around to respond. Everything that happens is both a cause and a consequence of some particular relation of numbers, sizes, and ages to food supply; but, whether an individual Daphnia responds to a change in food supply by altering her rate of growth or reproduction, or by dying, depends not only on what the change is, but on her age, size, and previous history of growth and reproduction. Result: some pretty spectacular wobbles, not necessarily regular, but approximately predictable if we know the age and size of the members and the time it takes for a given set of conditions to exert their effects. As these times are all different, and differ for every age and size, the system is full of coupled regulators. Any one regulator takes a little time, and guarantees a certain amount of wobble in whatever it is that it regulates; but any given wobble is a message that triggers some other regulator to correct, or over-correct, the wobble.

Having hinted again, by the word *message*, that wobble is information, propagated through a system with some time lag, or fraction, I refrain again from enlarging on the point, and use it only to emphasize that vertebrate populations contain more kinds of information than Daphnia is likely to find meaningful, and hence more kinds of friction. Daphnia populations, anyway the ones that L. B. Slobodkin [1] deals with, can be handled by a model that includes only a few kinds of sticky regulators; just as all Paramecia look alike to a mathematician, all Daphnia of a particular age or size can be treated as equivalent. Vertebrates, though, have individualities, and, knowing each other personally, are capable of responding to each other's individualities. In an elementary demonstration of this proposition, Marjorie Douglis [2] showed, a few years ago, that hens can be made to take up part-time resident in several different flocks, meeting like bridge clubs for an hour or so each week, and can learn to occupy a different place in the peck-order of each. Once personality, even if categorized as social role, is admitted to the list of properties that regulate behavior, or are regulated by it, the potential array of slow messages increases astronomically—presumably as something to the power of n to the mth power, where n is the number of kinds of messages and m is the number of personalities, or roles.

Evidently we shall be a long time in understanding this kind of language; but part of its vocabulary has been identified in a general way, and may be called *social stress*. Just as a dog's snarl is unambiguous, whether the dog is a French poodle or a Russian wolfhound, the import of stress can be freely translated without knowing what all the words mean. And what it seems to imply, for vertebrates, is a coupling of endocrine responses within the body to messages from outside, so that an array of social messages transforms the personality and in turn is transformed, or regulated, by the personality. This would mean, among other things, that overcrowding in a population of mammals contains the power to regulate itself; as social stress pushes some individuals beyond their personal limit of endurance, their reproductive success declines—male sterility, abortion, and infanticide by exposure and by cannibalism are all verified in populations of badly overcrowded mice. And even if the death rate remains unchanged, the overcrowding is not likely to last indefinitely. Beyond that, there is a terrifying new possibility, supported by several recent studies with mice, that social stress is perceived, or at any rate responded to, by individuals

[1] Slobodkin, L. B., *Growth and Regulation of Animal Populations*, New York: Holt, 1961.

[2] Douglis, M. B., "Social Factors Influencing the Hierarchies of the Domestic Hen: the Interaction Between Resident and Part-time Members of Organized Flocks," *Physiological Zoology*, 21: 147–182, 1948.

still unborn; my former student, Kim Keeley,[3] has shown that the stress of crowding is transmitted from crowded mother to fetus across the placenta, not through the milk. The behavior of the young mice in these experiments is modified throughout their own lives. I'm happy to be able to say that so far the modifications are trivial—possibly, since the offspring of crowded mice leave fewer droppings, according to one test, we may call the modification beneficial—but *any* prenatal influence on behavior opens vistas, and an audience of psychiatrists needs no help from me in bringing those vistas into focus.

It should be noted that I have not said that social forces are the only kind of stress, or that all oscillation of numbers of mammals is induced by stress. I mention this in deference to some of my zoological colleagues. Field zoologists, especially those who study the fluctuating populations of Arctic mammals, have been slow to accept social behavior as the source of the wobble they see, and this caution is proper. Although migrating lemmings are undeniably sick animals, the situation may be the one so familiar to psychiatrists, namely, that we see only the psychotics who present themselves for treatment. The suggestion I made[4] a couple of years ago, that lemmings migrate and snowshoe hares oscillate in numbers because they are socially stressed at home, was the kind of journalistic suggestion that is easier to make than to investigate. In the laboratory, though, what happens to crowded mice and rats is unmistakable, and the notion of social stress does not stand or fall by what happens in wild nature. Neither does the fact that most people of my acquaintance are well adjusted alter the problem of public mental health. In fact, not having known any lemmings personally, I am prepared to believe their home life idyllic, except for the weasels and jaegers; I would rather expect most vertebrate populations to wobble less than Daphnia does, simply because they have more ways of correcting wobble. But under unusual circumstances, such as captivity, some of these regulators are disconnected, just as one might unhook one thermostat and insulate another to increase the wobble and pinpoint its source. Intensifying social stress in the laboratory is an engineers' trick—a comparatively safe, comfortable, and useful trick—for tinkering with the machinery of a complex system.

One may or may not agree that my model of vertebrate populations is coming to grips with social systems; but at least my imagery has finally got out of the kindergarten. Infanticide by cannibalism has an ugly sound, even to those who specialize in disturbed personalities. I said I hoped to be helpful, though, and a murine version of Swift's *Modest Proposal* for meeting the population problem is not what I have in mind. If I'm right in thinking that sociologically trained readers are still ahead of my argument, their next objection is well taken: population biology is complex enough to be interesting, no doubt, but it is an experimental science, which social science is not. Engineers' tricks for testing for sticky regulators are simply not available. What do ecologists do when confronted by systems that are both complex and unmanageable, like female intuition or the city of Los Angeles.

The answer, briefly, is that they do just what social scientists do—substitute inference from history for experimental control. If that is too general a way of putting it, let me say that ecologists look for wobble, and use it wherever they find it. That is why I want students of cities to take their intellectual models from ecology, instead of from physics and chemistry. For classical physics, at any rate, wobble is just a symptom of faulty experimental design, whereas for us who cannot experiment, it is the golden key. Perhaps I can make the point clearer by turning to a system that is even more complex than society.

The biosphere may sound like the abstraction to end all abstractions, but some of it is perfectly visible, all men are part of it, and it is approachable at many points. Suppose we start at what may seem an unlikely place, the climate of the last century, which is known to have been getting warmer. The trend is hard to detect in middle latitudes, but very obvious in the Arctic; evidently there is a sticky thermostat in our living room, and Greenland is an underheated bedroom, temporarily being overheated. The thermostat is partly made of salt water, which holds more heat than air, and there is more water, containing far more heat, in middle latitudes than in the Arctic. As we take account of ocean currents, wind forces and directions, distribution of land and sea, and

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[3] Keeley, K., "Prenatal Influence on Behavior of Offspring of Crowded Mice," *Science*, 135: 44–45, 1962.

[4] Deevey, E. S., "The Hare and the Haruspex," *Yale Review*, 59: 161–179, 1960.

a few dozen other measurable variables, we can account for the zonation of climates, the difference between maritime and continental regimes, and so on, and we can even explain that if there is a perturbation in the system, Greenland ought to see it as more violent than California does. But the elegant equilibrium theories that physics provides for each variable in the system predict equilibrium for the lot, if the time is long enough, and we know that the climate has not varied much in the ten thousand years since the ice sheets vacated the United States and western Europe. Ten thousand years should be ample time for equilibrium; why, then, does the climate wobble at all?

The pure physics of the situation contains one obvious source of wobble, the annual variations in the relation of earth and sun. But nothing is more predictable than the march of the seasons, and celestial mechanics provides no clue to a net change of climate over a series of years. A minor component of the system that might be critical, though, is the carbon dioxide content of the air. Like glass in a greenhouse, carbon dioxide traps long-wave radiation that otherwise might go back to space. And carbon dioxide is a fuel that builds vegetation—a messy substance that meteorologists would prefer to ignore, because if life is interlocked with the physical system, its physics is no longer pure. Moreover, carbon dioxide has been poured into the atmosphere at an alarming rate, since the Industrial Revolution, the quantity now present having increased about 10 per cent in a hundred years. It has been calculated that if the amount in the air should double, the climate would warm up enough to melt the world's glaciers, sea level would rise by about a hundred meters, and Los Angeles would be one of many Cities in the Sea, to be explored by bewildered skin divers. Could the 10 per cent increase of carbon dioxide be the perturbation that has warmed the climate during the same century?

Yes, it could, but I doubt that it is. For one thing, this recent wobble of climate looks like any of a dozen others that took place in the last few thousand years, before the combustion of coal and petroleum began on any such scale.[5] And the fossil fuels have produced labeled carbon, carbon that is millions of years old and has lost all its radioactive carbon-14 long ago. Taking advantage of this label, we know that only about 2 per cent of the air's carbon dioxide is from this source, whereas enough carbon has been burned to account for all the 10 per cent increase. So the rest of the added fossil carbon must be in the sea and in vegetation. The carbon dioxide in air exchanges rapidly, within a few years, with the much bigger supply in the ocean, and if there is more in the air than there used to be, there may be less in the sea, or in plants. Perhaps, then, the change of climate came first, and has by now boiled off more carbon dioxide from a slightly warmer ocean, or has oxidized, a little more peat or humus; or again, perhaps the climatic change is secondary, and the clearing of land for agriculture has oxidized more humus, or slowed up the fixation of carbon by plants, so that more stays behind in the air.

If I were to build a model of this system,[6] I should have to start with a long list of sticky regulators, including the sluggish circulation of the deep ocean, the production and decay of humus, the whole photosynthetic machinery, and the making of reefs of carbonate rock by corals. In addition, I should have to look closely at any process that changes the acidity of sea water, such as the pollution of the atmosphere with sulfur dioxide from coal and petroleum. Two things have been learned in the last few years that put sulfur in the big picture: that human activities account for about a quarter of all the sulfur that enters the ocean, and that sulfur bacteria annually metabolize a major fraction of the sulfur in the air, just as green plants metabolize the carbon. I won't build this model formally, though, for it would wheeze and cough like a Model-T Ford, and end in a crashing anticlimax; without enough of the right numbers the model still will not tell us why the climate wobbles, or whether the extra industrial carbon dioxide is an irrelevancy.

What I can do, without actually making the model of the biosphere, is to mention a couple of engineers' tricks that amount to tinkering with its history. That may sound like the neatest trick of the ages, but I mean it metaphorically; it is something that social science, especially comparative anthropology, does all the time. For instance, some of the climatic wobble is preserved in the peat of bogs, not only as interbedded pollen grains, which give the history of the vegetation, but as layers of fossil carbohydrate, the peat itself, formed under alternating wet and drier climates. The water that supplied these bogs all came from

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[5] Deevey, E. S., "Bogs," *Scientific American*, 199: 114–122, 1958.

[6] De Vries, H., "Measurement and Use of Natural Radiocarbon," in *Researches in Geochemistry*, P. H. Abelson, ed., New York: Wiley, 1959.

the sky, and sulfur was one of the airborne chemicals that came along with it. If the sulfur sticks to the peat, the same isotopic labels that prove the oceanic sulfur in the air to be partly bacterial may tell us how much of the air was maritime when each layer of peat was formed.

The same kind of trick, applied to the carbon in the peat, might tell us at once what that extra 10 per cent of carbon dioxide is doing in our twentieth-century atmosphere. The idea would be to measure the carbon dioxide of the air through several oscillations of climate. Unfortunately that carbon is needed first to date the peat, and can't give the atmospheric carbon content at the same time. But tree rings are made of carbon that is already dated, and if we look at the isotopic labels in this carbon, over the last few centuries, we see some fascinating wobble. It may be just what is needed to explain the climate, and then it may not; it is carbon-14 that varies, and we may only be seeing fluctuations in the strength of the cosmic rays that make this isotope. Not that *that* wouldn't be interesting; but there comes a point when even an ecologist begins to wonder which is queerer—the house or its inhabitants.

I thought social scientists might find it refreshing to see that the so-called hard sciences can be as difficult as their own, and for the same reason—that *life is interlocked with physical systems.* Physics and chemistry are not hard-difficult as well as hard-rigorous; as compared with the ecological and behavioral sciences, they have gained rigor by avoiding the complexity that would make them difficult. Once the complexity is admitted, as I have tried to show, rigor in isolating cause and effect is necessary but insufficient. One needs a more imaginative model that a Bunsen burner under a beaker of water. My recipe, then, is to look for coupled regulators, and capitalize on wobble as the clue to the way they work.

I hope I am not expected to be much more specific than this. I have suggested that the model of the biosphere is faulty because it lacks numbers, and I know that numbers are harder to come by in social science than they are in ecology. But numbers are abstractions too, often useful but sometimes misleading, and in social science the things that wobble and are regulated are not necessarily understood by counting something. A couple of crude examples must suffice, for I have already got beyond my depth.

The political situation in Africa contains some fairly distressing wobble. At first sight this is surprising; for, as ethnologists know, the native tribesmen are brilliant political strategists in tribal contexts, and the practical theorists who worked out their kinship and kingship systems made their European contemporaries look like naive schoolboys. And then one remembers the long economic history that Africa has been forced to bypass. It looks as though economic development, including feudalism as a stage, is a sticky regulator, and colonialism is the insulator that intensifies political oscillation. This gross oversimplification is loaded with debatable abstractions, of course, and is not even new, but in its very language the model suggests ways of tinkering with history to see what less obvious regulators may turn up.

Consider, finally, that gorgeous array of jittery regulators that make a city so entertaining. To take an example more or less at random, the concepts of the city as *urbs* and as *civitas*, though they are abstractions as cloudy as any invented by the human mind, can act on each other physically as coupled regulators. I mean that *urbs* is structure and *civitas* is function, and the realization of some function—any function—as structure precludes some other function, which immediately wants to tear down the structure and build a new one. If it succeeds, envy and economics will make the victory a fleeting one. Hence the wavering between hard concrete and fluid personalities, between crossroads and massive communication centers, that we see especially in the central city.

Different cities have bargained differently with history, so that what wobbles in one may seem to be smoothly regulated in another. As long as some social force is smoothly regulated, with little time-delay, we are likely to overlook it entirely, and so the cities where it wobbles more are instructive, in the same way that Daphnia populations and Greenland's climate are instructive. When I urge social scientists to allow themselves to be instructed by wobble, I do not mean that they must sit like bird watchers, expecting that if wobble is watched for long enough it will go away. In that long historical view I spoke of, it probably will; but some time before that, or even before Los Angeles is drowned by a hundred meters of salt water, I think there are some genuine engineers' tricks to be tried. Any engineer who tries to smooth perturbations out of existence, though, is working on a dangerously naive model, for if there were no perturbations there would be nothing left to be regulated.

Senator GRUENING. Does the modern city inhibit the quality of man's life on earth? Can man build a pleasing physical environment? What about our increasing problems of air and water pollution? We dare not forget the interrelationship man has with nature because his survival is dependent upon natural processes. Arthur Ian L. McHarg in "Man and Environment" correctly points out that "an ecological community is only able to survive as a result of interdependent activity between all of the species which constitute the community." I ask unanimous consent that this chapter entitled "Man and Environment" from "The Urban Condition" be printed in the record.

His two concluding paragraphs are:

"When man abandoned instinct for rational thought, he abandoned the powers that permitted him to emulate such organisms; if rationality alone sufficed, man should at least be able to equal these humble organisms. But thereby hangs a parable:

"The nuclear cataclysm is over. The earth is covered with gray dust. In the vast silence no life exists, save for a little colony of algae hidden deep in a leaden cleft long inured to radiation. The algae perceive their isolation; they reflect upon the strivings of all life, so recently ended, and on the strenuous task of evolution to be begun anew. Out of their reflection could emerge a firm conclusion: 'Next time, no brains.'"

(The article referred to follows:)

EXHIBIT 121

MAN AND ENVIRONMENT

(By Ian L. McHarg, "The Urban Condition," chap. 5, pp. 48–58)

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Perhaps the next consequential act of man in modifying the natural environment was large-scale agriculture. We know that in many areas of the world agriculture can be sustained for many centuries without depletion of the soil. Man can create a new ecology in which he is the prime agent, in which the original ecological community has been changed, but which is nevertheless self-perpetuating. This condition is the exception. More typically agriculture has been, and is today, an extractive process in which the soil is mined and left depleted. Many areas of the world, once productive, are no longer capable of producing crops. Extractive agriculture has been historically a retrogressive process sustained by man.

The next important agent for modifying the physical environment is the human settlement, hamlet, village, town, city. It is hard to believe that any of the pre-classical, medieval, renaissance, or even eighteenth-century cities were able to achieve a transformation of the physical environment comparable to the agents mentioned before—fire, animal husbandry, deforestation, or extensive agriculture. But with the emergence of the nineteenth-century industrial city, there arose an agent certainly of comparable consequence, perhaps even of greater consequence, even more destructive of the physical environment and the balances of ecological communities in which man exists, than any of the prior human processes.

The large modern metropolis may be thirty miles in diameter. Much, if not all, of the land which it covers is sterilized. The micro-organisms in the soil no longer exist; the original animal inhabitants have largely been banished. Only a few members of the plant kingdom represent the original members of the initial ecology. The rivers are foul; the atmosphere is polluted; the original configuration of the land is only rarely in evidence; climate and micro-climate have retrogressed so that the external microclimate is more violent than was the case before the establishment of the city. Atmospheric pollution may be so severe as to account for 4,000 deaths in a single week of intense "fog," as was the case in London. Floods alternate with drought. Hydrocarbons, lead, carcenogenic agents, carbon dioxide, carbon monoxide concentrations, deterior-

rating conditions of atmospheric electricity—all of these represent retrogressive processes introduced and supported by man. The epidemiologist speaks of neuroses, lung cancer, heart and renal disease, ulcers, the stress diseases, as the badges of urban conditions. There has also arisen the specter of the effects of density and social pressure upon the incidence of disease and upon reproduction. The modern city contains other life-inhibiting aspects whose effects are present but which are difficult to measure: disorder, squalor, ugliness, noise.

In its effect upon the atmosphere, soil as a living process, the water cycle, climate and micro-climate, the modern city represents a transformation of the original physical environment certainly greater over the area of the city than the changes achieved by earlier man through fire, animal husbandry, deforestation, and extensive agriculture.

Indeed, one can certainly say that the city is at least an ecological regression, although as a human institution it may represent a triumph. Whatever triumphs there are to be seen in the modern city as an institution, it is only with great difficulty that one can see any vestige of triumph in the modern city as a physical environment. One might ask of the modern city that it be humane; that is, capable of supporting human organisms. This might well be a minimum requirement. In order for this term to be fully appropriate—that is, that the city be compassionate and elevating—it should not only be able to support physiological man, but also should give meaning and expression to man as an individual and as a member of an urban society. I contend that far from meeting the full requirements of this criterion, the modern city inhibits life, that it inhibits man as an organism, man as a social being, man as a spiritual being, and that it does not even offer adequate minimum conditions for physiological man; that indeed the modern city offers the least humane physical environment known to history.

Assuredly, the last and most awful agent held by man to modify the physical environment is atomic power. Here we find a post-atomic man able to cause evolutionary regressions of unimagineable effect and even able to destroy all life. In this, man holds the ultimate destructive weapon; with this, he can become the agent of destruction in ecological community, of all communities, of all life. For any ecological community to survive, no single member can support a destructive role. Man's role historically has been destructive; today or tomorrow it can be totally, and for all life existent, irrevocably destructive.

Now, wild nature, save a few exceptions, is not a satisfactory physical environment. Where primitive peoples exist in a wild nature little adapted by man, their susceptibility to disease, life expectancy, vulnerability to climatic vagaries, and to the phenomena of drought and starvation is hardly ideal. Yet the certainty that man must adapt nature and himself does not diminish his dependence upon natural, non-human processes. These two observations set limits upon conceptions of man and nature. Man must adapt both through biological and cultural innovation but these adaptations occur within a context of natural, non-human processes. It is not inevitable that adapting nature to support human congregations must of necessity diminish the quality of the physical environment.

Creation of a physical environment by organisms as individuals and as communities is not exclusively a human skill. The chambered nautilus, the beehive, and the coral formation are all efforts by organisms to take inert materials and dispose them to create a physical environment. In these examples the environments created are complimentary to the organisms. They are constructed with great economy of means; they are expressive; they have in human eyes, great beauty, and they have survived periods of evolutionary time vastly longer than the human span. Can we hope that man will be able to change the physical environment to create a new ecology in which he is primary agent, but which will be a self-perpetuating and not a retrogressive process? We hope that man will be able at least to equal the chambered nautilus, the bee, and the coral—that he will be able to build a physical environment indispensable to life, construced with economy of means, having lucid expression, and containing great beauty. When man learns this single lesson he will be enabled to create by natural process an environment appropriate for survival—the minimum requirement of a humane environment. When this view is believed, the artist will make it vivid and manifest. Medieval faith, interpreted by artists, made the Gothic cathedral ring with holiness. Here again we confront the paradox of man in nature and man transcendent. The vernacular architecture and urbanism of earlier societies and primitive cultures today, the Italian hill town, medieval village, the Dogon community, express the first view, a human correspondence to the nautilus, the bee and coral. Yet this excludes the Parthenon.

Hagia Sofia, Beauvais, statements which speak of the uniqueness of man and his aspirations. Neither of these postures is complete, the vernacular speaks too little of the consciousness of man, yet the shrillness of transcendence asks for the muting of other, older voices.

Perhaps when the achievements of the past century are appraised, there will be advanced as the most impressive accomplishment of this period the great extension of social justice. The majority of the population of the Western world moved from an endemic condition of threatening starvation, near desperation, and serfdom, to relative abundance, security, and growing democratic freedoms. Human values utilized the benison of science, technology, and industry, to increase wealth absolutely and distribute it more equitably. In the process, responsibility and individual freedom increased, brute hunger, bare suppression, and uncontrolled disease were diminished. It is a paradox that in this period of vastly increased wealth, the quality of the physical environment has not only failed to improve commensurately, but has actually retrogressed. If this is true, and I believe that there is more than ample evidence to support this hypothesis, then it represents an extraordinary failure on the part of Western society. The failure is the more inexplicable as the product of a society distinguished by its concern for social justice; for surely the physical environment is an important component of wealth and social justice. The modern city wears the badges which distinguish it as a product of the nineteenth and twentieth centuries. Polluted rivers, polluted atmosphere, squalid industry, vulgarity of commerce, diners, hot dog stands, second-hand car lots, gas stations, sagging wire and billboards, the whole anarchy united by ugliness—at best neutral, at worst offensive and insalubrious. The product of a century's concern for social justice, a century with unequaled wealth and technology, is the least humane physical environment known to history. It is a problem of major importance to understand why the nineteenth and twentieth centuries have failed in the creation of a physical environment; why the physical environment has not been, and is not now, considered as a significant aspect of wealth and social justice.

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The transcendental view of man's relation to nature implicit in Western philosophies is dependent upon the presumption that man does in fact exist outside of nature, that he is not dependent upon it. In contemporary urban society the sense of absolute dependence and interdependence is not apparent, and it is an extraordinary experience to see a reasonably intelligent man become aware of the fact that his survival is dependent upon natural processes, not the least of which are based upon the continued existence of plants. This relationship can be demonstrated by experiment with three major characters: light, man, and algae. The theater is a cylinder in which is a man, a certain quantity of algae, a given quantity of water, a given quantity of air, and a single input, a source of light corresponding to sunlight (in this case a fluorescent tube). The man breathes the air, utilizes the oxygen, and exhales carbon dioxide. The algae utilize the carbon dioxide and exhale oxygen. There is a closed cycle of carbon dioxide and oxygen. The man consumes water, passes the water, the algae consume the water, the water is transpired, collected, and the man consumes the water. There is a closed water cycle. The man eats the algae, the man passes excrement, the algae consume the excrement, the man consumes the algae. There is a closed cycle of food. The only input is light. In this particular experiment the algae is as dependent upon the man as the man is upon the algae. In nature this is obviously not true. For some two billion years nature did exist without man. There can, however, be absolutely no doublt about the indispensability of the algae or plant photosynthesis to the man. It is the single agent able to utilize radiant energy from the sun and make it available as products to support life. This experiment very clearly shows the absolute dependence of man on nature.

Man has claimed to be unique. Social anthropologists have supported this claim on the ground that he alone has the gift of communication, and again that he alone has values. It might be worthwhile considering this viewpoint. A very famous biologist, Dr. David Goddard, said that a single human sperm, weighing one billionth of a gram, contains more information coded into its microscopic size than all of the information contained in all of the libraries of all men in all time. This same statement can be made for the seed of other animals or plants. This is a system of communication which is not rational, but which is extraordinarily delicate, elegant, and powerful, and which is capable of transmitting unimaginable quantities of information in microscopic volume.

This system of communication has enabled all species to survive the evolutionary time span. All forms of extant life share this system of communication; man's participation in it is in no sense exceptional.

Man also claims a uniqueness for himself on the grounds that he alone, of all of the animals, has values from which cultural objectives are derived. It would appear that the same *genetic* system of communication also contains a *value system.* Were this not so, those systems of organic life which do persist today would not have persisted; the genetic information transmitted is the information essential for survival. That information insures the persistence of the organism within its own ecological community. The genetic value system also contains the essential mutation; that imperfection essential for evolution and survival. This system of communication is elegant, beautiful, and powerful, capable of sifting enormous numbers of conflicting choices. Man participates in and shares this system, but his participation is in no sense exceptional.

Yet another aspect of man's assumption that he is independent of natural processes is the anthropomorphic attitude which implies a finite man who is born, grows, and dies, but who during his life is made of the same unchanging stuff—himself. Not so. If we simply measure that which man ingests, uses, and rejects, we begin to doubt this premise. Hair, nails, skin, and chemical constituents are replaced regularly. He replaces several billion cells daily. The essential stuff of man is changed very regularly indeed. In a much more fundamental way, however, man is a creature of environment. We have learned that he is absolutely dependent upon stimuli—light, shadow, color, sound, texture, gravity; and upon his sense of smell, taste, touch, vision, and hearing. These constantly changing environmental conditions are his references. Without them there would be hallucination, hysteria, perhaps mental disintegration, certainly loss of reality.

THE ECOLOGICAL VIEW

It remains for the biologist and ecologist to point out the interdependence which characterizes all relationships, organic and inorganic, in nature. It is the ecologist who points out that an ecological community is only able to survive as a result of interdependent activity between all of the species which constitute the community. To the basic environment (geology, climate), is added an extraordinary complexity of inert materials, their reactions, and the interaction of the organic members of the community with climate, inert materials, and other organisms. The characteristic of life is interdependence of all of the elements of the community upon each other. Each one of these is a source of stimulus; each performs work; each is part of a pattern, a system, a working cycle; each one is to some lesser or greater degree a participant and contributor in a thermodynamic system. This interdependence common to nature—common to all systems—is in my own view the final refutation of man's assumption of independence. It appears impossible to separate man from this system. It would appear that there is a system, the order of which we partly observe. Where we observe it, we see interdependence, not independence, as a key. This interdependence is in absolute opposition to Western man's presumption of transcendence, his presumption of independence, and, of course, his presumption of superiority, dominion, and license to subdue the earth.

A tirade on the theme of dependence is necessary only to a society which views man as independent. Truly there is in nature no independence. Energy is the basis for all life; further, no organism has, does, or will live without an environment. All systems are depletive. There can be no enduring system occupied by a single organism. The minimum, in a laboratory experiment, requires the presence of at least two complementary organisms. These conceptions of independence and anthropocentrism are baseless.

The view of organisms and environment widely held by natural scientists is that of interdependence—symbiosis. Dr. Paul Sears of Yale University has written:

"Any species survives by virtue of its niche, the opportunity afforded it by environment. But in occupying this niche, it also assumes a role in relation to its surroundings. For further survival it is necessary that its role at least be not a disruptive one. Thus, one generally finds in nature that each component of a highly organized community serves a constructive, or, at any rate, a stabilizing role. The habitat furnishes the niche, and if any species breaks up the habitat, the niche goes with it. . . . That is, to persist they [ecological communities] must be able to utilize radiant energy not merely to perform work, but to maintain the working system in reasonably good order. This requires the presence

of organisms adjusted to the habitat and to each other, so organized as to make the fullest use of the influent radiation and to conserve for use and re-use the materials which the system requires. The degree to which a living community meets these conditions is therefore a test of its efficiency and stability." [1]

Man, too, must meet this test. Dr. Sears states:

"Man is clearly the beneficiary of a very special environment which has been a great while in the making. This environment is more than a mere inert stockroom. It is an active system, a pattern and a process as well. Its value can be threatened by disruption no less than by depletion."

The natural scientist states that no species can exist without an environment, no species can exist in an environment of its exclusive creation, no species can survive, save as a non-disruptive member of an ecological community. Every member must adjust to other members of the community and to the environment in order to survive. Man is not excluded from this test.

Man must learn this prime ecological lesson of interdependence. He must see himself linked as a living organism to all living and all preceding life. This sense may impel him to understand his interdependence with the microorganisms of the soil, the diatoms in the sea, the whooping crane, the grizzly bear, sand, rocks, grass, trees, sun, rain, moon, and stars. When man learns this he will have learned that when he destroys he also destroys himself; that when he creates, he also adds to himself. When man learns the single lesson of interdependence he may be enabled to create by natural process an environment appropriate for survival. This is a fundamental precondition for the emergence of man's role as a constructive and a creative agent in the evolutionary process. Yet this view of interdependence as a basis for survival, this view of man as a participant species in an ecological community and environment, is quite contrary to the Western view.

I have reminded the reader that the creation of a physical environment by organisms, as individuals and as communities, is not exclusively a human skill; it is shared with the bee, the coral, and the chambered nautilus, which take inert materials and dispose them to create a physical environment, complementary to—indeed, indispensable to—the organism.

When man abandoned instinct for rational thought, he abandoned the powers that permitted him to emulate such organisms; if rationality alone sufficed, man should at least be able to equal these humble organisms. But thereby hangs a parable:

"The nuclear cataclysm is over. The earth is covered with gray dust. In the vast silence no life exists, save for a little colony of algae hidden deep in a leaden cleft long inured to radiation. The algae perceive their isolation; they reflect upon the strivings of all life, so recently ended, and on the strenuous task of evolution to be begun anew. Out of their reflection could emerge a firm conclusion: 'Next time, no brains.'"

Senator GRUENING. Life on earth is becoming increasingly unpleasant as man goes on polluting the water and air and earth. Dr. Athelstan Spilhaus has commented on these problems in Science News. I direct that his article, "Resourceful Waste Management," be made a part of the hearing record at this point.

EXHIBIT 122

RESOURCEFUL WASTE MANAGEMENT

(By Dr. Athelstan Spilhaus, Science News, 89:489, pp. 486–488, 498)

The amount of stuff we throw away on our land, air and our water is becoming so staggering that the spectre of pollution will haunt every corporation in the country. There are two ways to go—we can go on the way we have been going and have taxes and government controls increase to "dispose" of wastes, or we can look at waste as a resource and the possible basis of huge, new industries.

Either way—a new kind of economics will emerge—on the one hand, if industry does not tackle this with its own initiative and imagination, such burdens as taxes at the source and effluent taxes will be imposed. On the other hand, if we

[1] Sears, Paul B., "The Process of Environmental Change by Man," in *Man's Role in Changing the Face of the Earth*, W. L. Thomas, Jr., ed., Chicago: Univ. of Chicago Press, 1956.

move toward a giant industry dedicated to the reuse of residues, we can not only keep our environment clean but do so on a productive basis.

Really, an individual industry may find it hard to cope with a particular waste problem but an association of different industries can tackle the problem as a system. Symbiosis in biology in its simple form is where the tick birds ride on the rhinoceros' back and live on his parasites, thereby keeping him clean. Can we think up combinations of industrial symbiosis where different wastes can be combined at least to neutralize each other and at best to make something useful?

Pollution alone is going to affect the whole economics of industry—from original design, to different marketing concepts, abolition of the consumer as we know him, coupling collection inlets with distribution outlets, mass disassembly as well as mass production, and reuse and stockpiling of discards, instead of disposal and urban renewal.

An excess or overconcentration of anything can constitute or result in pollution. It is the excess or overconcentration of people that is the real pollution problem on earth. All of what is said below are the side effects of the major problem of people pollution.

(Dr. Spilhaus then quoted the following excerpts, slightly amended, from the National Academy of Sciences special report on resources, titled "Waste Management and Control.")

POLLUTION DEFINED

Pollution is an undesirable change in the physical, chemical or biological characteristics of our air, land and water that may or will harmfully affect human life or that of other desirable species, our industrial processes, living conditions and cultural assets; or that may or will waste or deteriorate our raw material resources. Pollution comprises the residues of the things we make, use and throw away.

Pollution increases not only because as people multiply, the space available becomes smaller, but also because the demands per person are continually increasing, so that each throws away more year by year. As long as we want to sell more things so that people may live in greater ease, the corollary is that they will throw more away.

As the earth becomes more crowded, there is no longer an "away." One person's trash basket is another's living space.

With technological advance, the variety of goods that we use increases, too. New materials and chemicals result in thousands of new pollutants whose harmfulness is sometimes known, but sometimes only suspected.

If all the world's pollution were evenly distributed over the earth's surface, most of it probably would still remain unnoticed and perhaps harmless. But the fact is that as people live increasingly in city concentrations, their residues also concentrate there—and it is there that the problems become most acute.

It is difficult to assess the magnitude of the problem. It is estimated, for example, that even with efficient waste treatment, by 1980 our effluents would be sufficient to consume all the oxygen of all the flow in dry weather of the 22 river basins in the United States.

Chemical poisons are being produced in new forms so fast that the toxicologists cannot keep up with them. The air and waters that transport our wastes are, in many areas, at or about the saturation level that is tolerable with respect to using the air and water for other purposes. The cost of providing transport for the wastes by other means, such as sewers, increases by a staggering amount each year.

Many of the debilitating effects of a dirty environment on human beings we cannot assess, physiologically or psychologically. The hidden costs of people's lost time—and the accompanying expenditure of resources—traveling to work and returning to pleasant or perhaps only bearable homes, or to find open spaces for recreation are also increasing. The problem is of the utmost urgency because many of the effects of pollution on our environment may be irreversible or, at least, take generations to correct—even if we start right now.

No one can dictate what degree of cleanliness the environment should have. It is a matter of the informed choice of the people. Cleaning up costs money. What price are we willing to pay? How much cleanliness can we afford to buy?

These choices must be made on an assessment of relative values of the different uses to which we want to put the environment. We must balance the extra costs of the things for living comfort and convenience that our factories,

power plants, cement works, oil refineries and other industries give us against the worth of reducing the unpleasant and harmful effects we suffer from the pollution of the atmosphere.

To insist on clean air is meaningless. How clean? At what cost? And for what purpose?

Even before man there were occasional excesses of natural pollutants, such as too much volcanic ash or too much water. A little solid material in the air—salt nuclei and dust—is essential for natural rain. Too much—a great dust storm—is a pollutant. Too little water causes droughts and famine; too much results in floods and famine. So it is with man-made pollution.

There is a necessary and right amount of each pollutant that society will tolerate; and because of the varied uses of land, air and water, the right amount is not the same everywhere. Higher tolerances may be desired where the community wishes to exploit the benefits of industrialization—but not too high. Lower tolerances are a goal for recreational areas—but not impossibly low.

The right amount of pollution must be planned with criteria set somewhere in between the ideal of complete cleanliness and the havoc of uncontrolled filth. The right amount involves a calculable risk to society. It depends on where we are, what use we want to make of the environment and what quality of cleanliness we can afford or can manage to pay for.

In assessing the right amount, we must consider the capacity of the environment to assimilate residues, and this varies widely with the geography, geology, hydrology and meteorology of the locality. Certain areas which are frequently overlain with stagnant air are pollution-prone. Others, with frequent high winds and low humidities, can cope with much more of our effluents. The difference between a stagnant situation and a windy situation at one and the same place may increase the amount of pollutant resident there by an amount anywhere from a thousand to ten thousand times.

Where the residues are potentially reusable natural resources, such as discarded iron, the right amount can be great if it is concentrated and stored instead of being allowed with increasing entropy to be dispersed irretrievably such as by rusting. The right amount can be greater, at least temporarily, if what we do to the environment is reversible.

If we stopped polluting a part of our environment, how long would it take nature or engineering intervention to restore conditions to the state we would like them to be? For example, iron, a non-renewable resource concentrated in ores over millions of years by geological processes, if allowed to corrode or disperse is irretrievable. But polluted rivers may be cleaned naturally after the polluting practice is stopped.

The degree of irreversibility comes into the disposal of containers, too. The latest aluminum cans, unless collected, will litter and pollute long after the earlier steel, "tin," cans rust away. Many plastic wrappings and containers will plague us much longer than paper and cardboard litter.

To make these choices, criteria must be established based on objective measurements of the effects, including the time to correct our mistakes—reversibility. Evaluation of these measurements must give us a variety of criteria that we can apply to various uses of the environment. Then once people have decided by choice the priority they wish to put on these various uses in their particular community, standards can be set.

The difficult job of deciding the right amount of pollution must be approached from a systems point of view. First, it depends on the social system. An economically well developed country, such as the United States, even though it has massive industry, can afford to set higher standards of cleanliness than less developed countries which are beginning to be industrialized. In smaller communities it depends whether they choose to devote themselves to agriculture, tourism, industry or whatever else.

The systems approach must also consider the interrelationship of land, air and water. Too often municipalities get rid of solid wastes by incomplete burning, which may solve the land disposal problem but fouls the air. We must consider the assimilative capacity of water, air and land as an entity—something that has a unitary and self-contained character—and in relation to the plants and animals that live there. The assimilative capacities vary with such things as the tidal flushing of bays, the flow of rivers and the windiness of the locality.

For example, meteorologists now say that Appalachia is one of the most pollution-prone areas in our country. But long before any industrialization, the mountains were called the Smokies because so stagnant was the air that the terpines exuded by the trees hung visibly over them, even then. If this area

is to be industrialized, activities should be restricted to those which will not produce excessive burdens of waste.

There are all kinds of technical improvements and systems that are available right now, and that are different from the age-old procedure of just spreading our refuse around in the hope that it will not be noticed.

If we applied what we now know to get more complete combustion in incinerators, power plants and automobiles, just this would go far to reduce air pollution. In cities, at least, the massive producers of pollution are concentrated, and we could experiment on more complete ways of collecting and concentrating residues at the source. It is more difficult with moving sources, such as automobiles.

We know many ways to transport our solid refuse besides the conventional ones—dry sewers, for example—or if water is used, loading it to a maximum with the wastes so that there is a minimum of dilution.

A city is like a person, it does not consume much of anything, especially after it has stopped growing. All kinds of material and food come in and are transformed and used. The converted materials and the residues must go out.

The input is by rail, truck, and ship; the residue output is by garbage-scow, truck, sewer, or by natural river or wind. This means that many rail cars and trucks are loaded only one-way—in. Can we not separate and package residues and use this dead-heading transport to take them out?

The question of "where to take them" has also to be answered. Should we strew all useful organic wastes on sterile desert land? Should we build mountains of scrap iron on flatlands where a hill that might be mined in the future could be an asset in the meantime? Surely we can find ways to use clean waste heat to intervene constructively in the ecology of our waters.

There is no opportunity to experiment and test innovations on a large enough scale. The massiveness and urgency of the problem justify large-scale experiments even in new experimental cities or in any of the dispersal plans to solve the problems of the cities. New and different engineering systems must be built and tried.

WHY SAVE THE CITIES?

Trying to save the cities? What for? Urban renewal—should it not be urban dispersal, thus reducing the fundamental cause—concentration and excess.

(Dr. Spilhaus then cited a cover of TIME magazine, showing the Secretary of Housing and Urban Development, as an example of the kind of urban renewal being done that will lead to more slums within less than 50 years. The cover showed a sleazy brick building with a broken window in a dark shadow on one side, rebuilt and repainted with a venetian blind in the window on the other side.)

The problem of the city is excess, which is pollution. Too many cars for the roads, too many children for the school buildings, too many people going at the same time—there and then back—for any present mass transportation system, too much sludge for the sewers.

Building to meet all these needs is always behind—like Alice in Wonderland, we run fast but continually run behind. Radical new solutions are required.

We have huge Federal highway programs—building more of the same and generating more space for more cars to clog. The provision of school and university buildings to impound the flood of students preoccupies educational administrators—so that they develop what has been described as an "edifice" complex and have not time to think about education. We have a large Federal concern about mass transportation, yet radically new ideas are rejected because they do not mesh with the existing mess!

Most consideration of waste proposals are studies of what the burden is if we continue to go the same way we have gone in the past. And most such studies end up with the conclusion that we will never catch up. Here too we need to try radically different solutions.

At the same time we are mass producing cities in the United States and developing countries are mass producing them even faster. These cities continue to grow like organisms, in part healthy, in part cancerous.

With population increasing at 3 million a year in this country alone, we are building the equivalent of 12 new cities of one-quarter of a million people each year. Shall we build new cities or shall we just continue the costly business of so-called urban renewal—allowing unorganized growth in cities that are already too large, thus creating the slums of tomorrow?

We have learned in the United States that before one mass produces anything one should build experimental prototypes—why not build an experimental city?

Exempt from old-fashioned codes, built like any experimental model where if an idea fails, it can be disassembled and reworked. Experimental cities built on the concept that a city is a machine for living and working and, like any machine, is designed for a certain capacity. When it reaches full capacity, you add another machine for living and working—another city and do not overload the one you have.

The Federal government has built cities—de novo—Los Alamos, Huntsville and the Manned Space Center. These are artificial, single-purpose communities. We need, in order to get the experimentation necessary, to solve these problems of excess—to build an experimental city with the proper mix of people, industry and government, recreation and work; a city where we can experiment with new legislative and institutional practices. Only in this way will we have a laboratory for tackling our problems of excess.

As long as a large fraction of the money for running a city comes from real estate taxes, we have a built-in, ever-expanding spiral for further concentrating cities. To broaden the tax base, more people must be brought in so that higher and higher rise buildings must be built. Then to take care of these people, more sewers, highways and schools must be built, resulting in the need to further increase taxes, and so the process repeats itself. Industrial experience shows that it is often far more economical to build a new plant in a new location than to keep patching an old overgrown one. So, as long as the extra 12 million have got to be housed, educated and put to work each year, it may be far more economical to concentrate on urban dispersal in comparatively small new cities.

THERE IS NO CONSUMER

But at the same time, work must be started toward the ultimate system that closes the loop back from user to resource and reuse. Our whole economy is based on taking natural resources, converting them into things that are consumer products, selling them to the consumer and then forgetting about them.

There are no "consumers"—only users. The user employs the product, sometimes changes it in form, but does not consume it—just discards it. Discard creates residues that pollute at an increasing cost to the consumer and to his community. But if we close the loop from user back to resource so as to remake the discards, we approach an ultimate solution.

For example, a product such as an automobile could be designed in the first place with return-to-factory for remaking and reuse in mind.

Ideally, the system would be completely closed. All water would be purified and reused; all solid wastes would be sent back as resources for making more things. How can we distribute the added costs of reuse or of discards so as to provide incentives to steer manufacture toward directing original design toward maximum reuse, or minimum cost of discard?

We could design automobiles so that the steel could be separated more easily from the other materials. We might stimulate research on degradable paper, cardboard or other containers.

Should we tax glass bottles severely? Federal law forbids the reuse of liquor bottles, for instance.

May the future not bring a law requiring, instead, that they be re-used?

INSTITUTIONAL AND SOCIAL ASPECTS

In practice there will always be certain remaining residues—hopefully smaller and smaller fractions—that are unusable. These, instead of being dispersed, should be concentrated in residue mountains or caves. Residues would be separated as to type so that, in the event of discovery of a future use, they could easily be mined.

The technological problems, however, are not the main ones. We need new public policies and institutional arrangements, before we can attempt many of the technological innovations.

When we looked at the Delaware River estuary basin, the Pennsylvania-New Jersey-Delaware complex, an area of about 5,000 square miles, it had about 500 municipal and county administrations and 5,000 civic organizations with conflicting interests.

The Delaware River itself is said to be "too thick to swim in, too thin to plow."

Watersheds are not outlined by state or other political boundaries, yet the problem of water pollution is one common to a watershed demarked by nature. Air pollution, similarly, is wafted across state and even international boundaries.

This points the way to defining and combining jurisdictions covering the area of the problem rather than accepting the limits of jurisdiction of individual local and state governments. It is too easy to move to the other extreme and say that, because air and water cross state lines, all criteria, standards and enforcement with respect to pollution must be Federal. In fact, all levels of government—Federal, state and local—must play a role. Our concern here is for industry to take the initiative itself so that a minimum of jurisdictional control at any level is necessary.

It comes as a bit of a shock but we must get the word "consumer" out of our industrial vocabulary. The industry must re-consume its own residues after the "user" is finished with it. If American genius can mass produce automobiles and work out a magnificent distribution plan, cannot American genius, on a private enterprise basis work out collection, mass disassembly and reuse?

The trite reason always given for not doing so is that it is not economical, but the fact is that people are now paying staggering amounts for inefficient waste collection that does not even half solve the problem. If we close the loop from user back to the factory, the costs of waste management which are now hidden would be part of the cost of using and, I suspect, would be far less than what we pay today.

Closing the loop in this way is an entirely new industrial concept and will mean vast changes in original design, not only for marketing appeal and usefulness but for disassembly, reprocessing and reusefulness.

Basically, under this system, we would not be buying anything—we would be renting it. But when you think it over, this is not so different from what we do today with rapid obsolescence. The overt increase of rental systems is an indication that this is acceptable procedure already for users.

Waste collection, the reuse of waste as a resource, is an industrial activity that must grow. Whether it grows healthily in the private sector or whether government takes it over depends on what action your industries take.

The manufacturers' traditional job and successful enterprise has been through supplying people with the things that contribute to the "ease" of their living. A filthy environment loaded with the discards of ease causes "disease"—sometimes in the physical sense, more than likely contributes to mental disease, but unquestionably to the larger definition of dis-ease as opposed to ease. Manufacturers must increase the scope of their job and consider what happens to their product after use—if you do not do it yourselves, government will do it by default.

Furthermore, with growing social consciousness, things that were luxuries, yesterday, rapidly become the human rights of tomorrow. And just as education has become a human right, so will the luxury of living in a decent environment.

JEOPARDIZING MAN'S FUTURE

Senator GRUENING. Dr. Vogt's testimony today brought to mind Arnold Toynbee's remark that man "jeopardized his future by overpopulating the earth." The quotation appears in Dr. Vogt's article "Do We Need Smaller Families?" I direct that this pertinent article be included in the record of this hearing.

(The article referred to follows:)

EXHIBIT 123

DO WE NEED SMALLER FAMILIES?

(By Dr. William Vogt, secretary—Conservation Foundation, formerly National Director of the Planned Parenthood Foundation; Presbyterian Life, June 1, 1964, pp. 19–21)

MOST STUDENTS OF POPULATION FORESEE EARLY DISASTER IN MANY COUNTRIES UNLESS BIRTHRATES ARE EFFECTIVELY REDUCED, AND SOON

The human population wave sweeping around the world has had almost ubiquitous recognition, among government leaders, scientists, economists, and churchmen (including leading Roman Catholics) as a towering threat to civilization. President Kennedy underscored the danger that excessive population growth would defeat the aims of our foreign aid program.

At the recent World Food Congress, Arnold Toynbee said that man "jeopardized his future by overpopulating the earth," and Monsignor Luigi Ligutti called his Church, "one of the greatest birth-control advocates in the world." If Monsignor Ligutti's view was news to some of those in attendance, representatives of Protestant Churches were well-armed with doctrine emphasizing the Christian imperative of responsible parenthood. This has also been increasingly stressed by leading Roman Catholics, especially in the United States. Responsible parenthood will not bring into sick and hungry families millions upon millions of children to share and exacerbate the misery of their parents.

The only way such cruelty can be avoided is by limitation of births. *Unless birthrates are effectively reduced, and soon, most students of population foresee early disaster in many countries, and eventual catastrophe for far more people than were alive at the time Malthus formulated his famous doctrine that populations tends to multiply faster than the means of subsistence.* (It is not suggested of course, that birth control is a panacea and a substitute for other social and economic measures.)

Can birthrates be reduced enough, and fast enough to avert catastrophe?

No one can give a certain answer, and opinions must differ with peoples, their cultures, and their geography. But for much of the world one could probably justify a cautious and qualified affirmative. Since failure to reduce birthrates must, before long, result in extremely painful increases in death rates, and since the only alternative to expanding death rates is reduced birthrates, the possibilities of reducing birthrates are well worth examination.

There is abundant evidence that people in most societies seek to escape the tyranny of unceasing childbearing. Illegal abortions in the United States have been averaging around a million or more a year, most of them performed on married women. In Japan, with half our population, the annual total probably approaches two million, though it is being reduced by contraceptives. The world abortion figures may not fall far short of fifty million annually, in the view of one of Europe's foremost authorities on sex education.

Attempts to avoid conception are probably as widespread geographically as abortion, and they have a recorded history going back nearly 4,000 years.

The motives that govern the attempts of women (and men) to avoid unwanted births are extremely complicated and far from being completely understood. Only a few of them can be considered here. In Japan a widespread comprehension, among all classes of people, of the serious dangers growing out of overpopulation wielded considerable influence. At least, this was the impression I gained in 1955 from talking with many "little" people—peasants, woodcutters, and hotel workers. The Japanese are avid newspaper readers, and the inspired educational cooperation of the press was a major influence in cutting the birthrate by one half in ten years. Here in the United States, during the depression, we brought our own birthrate down to 16.6 per thousand from 22.1 ten years before. In 1960 it was 23.7 per thousand.

The history of eighteenth-century Sweden, in an "underdeveloped" society where most people lived by subsistence agriculture, often close to famine, and where illiteracy rates approached those of Asia today, gives strong evidence of effective birth control, especially when there were poor harvests or economic slumps. Marriages were also postponed at such times. The welfare of the family, including that of the children, was the motivation.

There is no proof that the Swedes were more intelligent than modern exploding populations, but they were moved by a powerful sense of responsibility that seemingly has little influence among today's "underdeveloped" peoples. Men and women in eighteenth-century Sweden were brought up to accept responsibility for their own acts, especially as they affected others. Today's free-breeding millions, whether in our slums or those of Latin America, Asia, and Africa, display a seeming lack of concern for the lot of the children they bring into the world that appears shockingly callous until one recognizes that theirs is almost a life without hope and that, as a consequence, they literally take no thought for the morrow. Kismet is as acceptable a concept in modern East Harlem and Mexico City as it was in medieval Mecca. These people care about the children in their often inept way, once they are born, but they are not accustomed to looking ahead. As was pointed out by Lee Rainwater in *And the Poor Get Children*, when there has been little occasion to plan because people have so little with which to plan, they are unlikely to consider the future. Oscar Lewis' important *The Children of Sanchez* shows how the same psychology operates in the slums of

a newly industrializing country like Mexico. It has become clear beyond doubt that Asian, African, and Latin American peasants (who make up the great majority of the populations) cannot be expected to behave like their Scandinavian precursors.

New motivations must be sought. And these must be sought, and found, at all levels of all societies. The most intelligent and best educated Asians, many of whom are sincerely committed to population control, still spend hundreds of times as much money and man-hours on developments that cut death rates as they do on birth control and sterilization. Fertilizer factories are being built at a rate (measured in money) thousands of times the rate of the development of effective conception control. When government leaders cannot see where this disparity is leading them, it would be unreasonable to expect more wisdom from the uneducated masses.

India has made a promising forward step by modest subsidies to men who are willing to undergo sterilization—a simple procedure, but one that is not likely to have much effect on population in view of the extreme paucity of doctors (roughly one to 6,000 laymen) in the country. Were India willing to import large numbers of physicians, perhaps Japanese, through the World Health Organization, and effective cut in the birthrate might be made.

Where there is no highly developed sense of personal responsibility for one's acts that will protect children against being born to sickness, hunger, and general wretchedness, perhaps self-interest can take over.

Economists have calculated that economically it would be far cheaper to pay for sterilizations and to give "no-baby bonuses" to women in the fifteen- to forty-year age group for each year of nonpregnancy than to try to finance the minimum needs of millions of additional people in a society where the great majority have an income of only a few cents a day.

REASON FOR HOPE

Where people are motivated to wish to limit their families, the availability of oral contraceptives, especially when they may be distributed by nonphysicians, offers reason for hope. Undoubtedly, there would be a small proportion of women who would suffer uncomfortable side-effects, as happens with widespread dosage of penicillin, and as has happened with oral contraceptives in the United States; but, in comparison with the results of withholding such medication, the damage done would be insignificant. North Carolina has found eager acceptance of such contraceptives, and their use has resulted in very substantial savings in welfare funds. Other effective contraceptive devices are being developed.

Until now, however, despite the statement of Monsignor Ligutti, there has been no evidence that the Roman Catholic Church will accept an appliance or medical method of conception control—will accept anything, in fact, other than the rhythm method. In 1952, Dr. Abraham Stone, the great (and greatly beloved) birth-control pioneer, went to India at the request of its government and the World Health Organization. The Minister of Health, an upper-class spinster who was a devotee of Gandhi and a Roman Catholic, refused to countenance any birth-control method but periodic continence or rhythm. As a result, Dr. Stone's mission was a resounding failure—except as a demonstration that illiterate, and largely unmotivated, poverty-stricken people will not accept what has been justly called the most difficult of birth-control procedures.

Summing up the possibilities for controlling the exploding populations in developing nations around the world, we are obliged to say that any effective reduction of birthrates will require the conjunction of motivation, methods, money, and the support of concerned governments. The prospects, in short, are uncertain and expensive, though not hopeless.

Meanwhile, the United States itself might do well to take stock of its own future population picture, especially in view of excessive unemployment and exploding automation. Some demographers have been forecasting a leveling-off as, indeed, they did when we had few more than half as many people as now. (Theodore Roosevelt used up a great deal of lung power combating "race suicide.") On the other hand, Professor Philip Hauser of the University of Chicago pointed out in 1960 that "the continuation of our present birthrate could, by 2050, produce a population of over one billion."

Our own policies that, willy-nilly, influence population changes are predominantly pro-natalist: draft exemption for fathers; higher taxes on bachelors, spinsters, and childless couples; no income taxes for the multichild family unless such a family happens to have a more than median income; "free" schooling,

school lunches, and books; large dwellings at nominal rents for indigent families provided they happen to have enough offspring; scholarships for married students with children; and many more. The delayed marriages we are urging on some other countries are not popular here; indeed, our marriage age has dropped.

A national population policy will not be arrived at easily, which is all the more reason to begin considering it as soon as possible. The study of demography should be a required part of high school courses and, certainly, ignorance of such a momentous subject is indefensible in recent college graduates.

We could perhaps experiment with sharply increasing income taxes on families with more than two children, excluding those born now or within nine months of passage of the law; with reversal of our policy of exempting fathers from the draft; or even, since we have conditioned so many segments of our society, from farmers to oil-drillers, to special economic treatment, with "no-baby" bonuses. Government has quite as much right to favor small families, in one way or another, as to favor large ones.

The most critical factor is time.

Any population control programs, to be effective must be organized and operated on scales so great and so costly that only government could cope with them. Planned parenthood organizations have done important educational work in a few countries, but the task has suddenly outgrown the capacity of private organizations.

The use of birth control must remain voluntary, although, unless voluntary acceptance comes fairly soon, it is not difficult to envisage conditions under which it might become compulsory. The groups that have blocked birth control *even for other people* have imposed their will by political action in spite of being minorities. It is high time that the majority spoke up. Political action is an obvious necessity and will be accomplished only by organized citizen power.

Politicians, from City Hall to the United States Senate, with fairly rare exceptions are not distinguished by courage. The attempt of Senator Fullbright to include in the recent foreign aid bill help with population control, *upon request*, was defeated in a Senate-House Conference. When politicians see no support from the electorate, they are not likely to stick their necks out.

It seems obvious that if anything is to be done about the population problem in time to do any good, it will have to come about through vigorous and concerted action of informed citizens. A national political action campaign for a rational population policy at home as well as in relation to foreign affairs is needed.

WHAT CHURCHES CAN DO

All these matters are of proper concern to our churches, and one of the most constructive conceivable steps would be strong recommendations from individual churches and church members, and from the National Council of Churches, to individual Congressmen. In preparation for this, where difficult decisions must be taken, study groups should be organized in as many churches as possible. Population problems are not simple. But there are sound and highly readable books available, and local colleges would often be willing to help guide discussions. The nonprofit Popuation Reference Bureau of Washington has published a wealth of nontechnical, reliable, and low-priced information. The Foreign Policy Association, in February, issued an excellent pamphlet on the general population problem.

Sound sex education is desperately needed to give our young people understanding of one of the most important aspects of their lives, where now they are all too often left to themselves to make the same mistakes that have plagued their ancestors for generations. Behavior that well became their great-grandparents may have little pertinence in our rapidly changing world.

Since, to stabilize our population, each couple need average only a little more than two children, the two-child family should, in my considered opinion, become the American ideal, at least for a generation or two.

We can scarcely urge other peoples to cut their birthrates if we do not lead the way. The child growing up with three or four brothers and sisters, if they are decently cared for, may very well be better off than the member of the two-child family. But a child growing up in a world of seven billion will be far worse off than either of them.

BIOGRAPHIC STATEMENT: JOHN R. BERMINGHAM

Senator GRUENING. Senator Bermingham, we regret having kept you waiting until this time.

Mr. Bermingham is a lawyer. He is in private practice in Denver. From 1953 to 1961, he was employed by the Continental Oil Co.

State Senator Bermingham is 41. He is married and the father of three children. He is a member of the Episcopal Church.

He was a cofounder of the National Youth for Eisenhower Movement in 1951 and has been an active Republican since moving to Denver in 1953. When he was a candidate for the Colorado State Senate in 1960, he received the personal endorsement of then-President Eisenhower. I will add here that S. 1676 has the endorsement of former President Eisenhower, too.

State Senator Bermingham is a Navy veteran of World War II. He has worked in many civic organizations, including the United Negro College Fund and the Denver Marriage Council.

He was raised in Illinois and Wyoming. He is a graduate of Yale University Engineering School and the Columbia University School of Law. In 1952–53, he was a special assistant attorney general of New York State. The subcommittee welcomes your testimony.

STATEMENT OF JOHN R. BERMINGHAM, A STATE SENATOR FROM DENVER, COLO.

Mr. BERMINGHAM. Mr. Chairman, I believe I will just read the statement and deviate from the printed statement in one or two places.

Since I happened to be the sponsor of Colorado's birth control law, Senator Gruening asked me to appear before this committee. I am also on the board of Planned Parenthood of Colorado.

COLORADO'S PROGRESS REPORT—GUIDE FOR OTHER STATES

Senator Gruening's initial letter stated that he would like to know how it was possible to guide a bill successfully through the Colorado Legislature. He has indicated that the story might be helpful to other States and that this subcommittee would be particularly interested in learning how public support for the bill grew. With these wishes as guidelines I have decided that I should not give you a strictly chronological narrative of the passage of senate bill 232 through the Colorado Legislature. Instead, I shall describe several major specific tasks that were undertaken in the belief that they would contribute to the ultimate success of our efforts:

1. Strategy decisions and coordination of efforts.
2. Do we have the right bill and what about unmarried mothers?
3. Fundraising.
4. Counting noses and lobbying.
5. Endorsements by organizations.
6. Steady stream of news releases.
7. Specific promotional statistics and arguments.
8. Generating mail from home.
9. The Catholics.
10. Legislative handling.

To make the story complete, my remarks will conclude with some figures and comments on Colorado's present birth control activities and needs.

MRS. NED STEEL WAS THE GUIDING LIGHT OF COLORADO BILL

At the outset let me say that the greatest credit for passage of our bill belongs to Mrs. Ned Steel, 1515 East Tufts Avenue, Englewood, Colo. Mrs. Steel is a past president of Planned Parenthood of Colorado, Inc., and a member of the board of directors of Planned Parenthood-World Population. She inspired us to go ahead with a bill in the 1965 session and more than any other person deserves credit for its passage.

1. Strategy decisions and coordination of efforts

Prior to the passage of senate bill 232 nothing in the Colorado statutes prohibited welfare workers or health department employees from distributing birth control information and supplies, and one or two of the major counties were quietly taking advantage of this silence. As the 1965 legislative session approached, Planned Parenthood of Colorado considered but was opposed to the introduction of a bill on the theory that failure to pass it would be a harsh setback to progress already underway. A few of us took a contrary view, however, feeling that widespread public discussion and controversy would work in favor of the birth control movement generally, regardless of whether or not a bill passed.

In mid-January of 1965, a group of six or seven persons met to discuss what should be in a good birth control bill and whether or not one should be introduced. The group included Mrs. Steel, myself, the executive director of Planned Parenthood of Colorado, the director of the State welfare department, and three persons from the Denver Welfare Department. We decided to proceed with a bill even though it was our considered conclusion that the bill would have little chance of passage. The chance to generate public discussion of this vitally important topic justified our effort.

PREPARING FOR STATE LEGISLATIVE ACTION

From this point on through the end of March Mrs. Steel and I were in constant communication and we were totally preoccupied with the task of guiding the bill through the legislature. We promptly touched bases with the leadership in both houses and the Governor to determine attitudes and get advice. No one in this group jumped up and down with delight on learning what we had in mind, but fortunately none of them were opposed and several were most helpful as the weeks wore on. A decision was made to keep the project under wraps as long as possible until we were ready—we didn't want to give the opposition any advantage of notice, nor anything at which they might shoot.

OUTSIDE SUPPORT WAS SPARKED BY PUBLIC NEWS MEDIA

An unexpected but vitally important side effect resulted from our decision to stir up public controversy. We gathered up a great deal of outside support that never had been expected and I have serious

doubts in my mind whether the bill ever would have passed had we not utilized the public news media to the fullest extent from the outset.

2. Do we have the right bill and what about unmarried mothers?

The same group that initially met to consider introducing a bill met again and again to review successive drafts of what should be in a good birth control bill. There seemed to be no point in going ahead with a tremendous effort to secure the passage of a bill in the legislature unless we were confident that we had the best possible bill for Colorado.

Should we have an "information only" bill or should we include an appropriation of State funds? Should we restrict it to married persons or women over 21 or should we leave it unrestricted? Should we utilize the State health department or the State welfare department, or could we find some other vehicle for carrying out the purposes of the act? What controversies could be avoided by proper drafting? How strong could we make the initial proposal without completely jeopardizing its passage? What window dressing should we include to make the bill more salable?

". . . IMPORTANT THAT NO RESTRICTIONS BE PLACED ON GIVING INFORMATION AND SUPPLIES TO UNMARRIED MOTHERS"

Of the many, many features that can be included in a birth control bill I'll single out just one for comment at this point. It is vitally important that no restriction be placed on giving information and supplies to unmarried mothers. This unhappy group of persons is more in need of birth control advice and devices than any other, and any program that failed to provide for unwed mothers is a faulty program indeed. Just consider these figures:

35 percent of the children in Denver's ADC program are illegitimate.

30 percent of the mothers in Denver's ADC program are unmarried.

45 percent of the women having an illegitimate baby in 1964 in Colorado had previously borne one or more children.

6 percent of all births in Colorado are illegitimate, which is somewhat below the national rate.

Four times as many women in the 25- to 34-year age group have illegitimate babies as compared to 20 years ago.

BILL ENABLES EACH COUNTY TO HAVE A FAMILY PLANNING PROGRAM

Appendix A to this testimony shows the text of the bill as introduced and as finally passed. Very briefly, it provides that each county may have a family planning program which shall include consultation, referral to a licensed physician and, to the extent prescribed, distribution of contraceptive drugs and devices. Counties may charge for services, services may be refused by any person, and county employees may decline to participate in the program. In short, it is an enabling act that lets each county decide whether or not to have a program and whether or not to charge a fee.

3. Fundraising

For our particular purpose and problem we were very fortunate that the State capitol, roughly half the State's population, and all of the State's most important news offices, happened to be located

in the Denver metropolitan area. Mrs. Steel and I probably spent no more than $100 or $150 out of our own pockets for various incidental expenses connected with our efforts. I mention this solely because I think this record should contain a warning that proponents of similar legislation in other States might run into some noticeable expenses for travel, telephone, and other necessities.

4. Counting noses and lobbying

The job of counting noses and lobbying fell rather naturally to Mrs. Steel. The birth control movement is truly her life's work and her perseverance is coupled with a most pleasing and persuasive personality. She has the further advantage of being totally informed and having instant recall, with a sound answer for every objection.

Colorado's Legislature consists of 35 senators and 65 representatives. Starting in the senate, where the bill was introduced, she appeared every single day with a handbag loaded with pertinent materials and quietly talked with virtually every legislator.

In addition to Mrs. Steel, we found a powerful and active ally in Mr. Fritz Schneider, one of the senior and most respected lobbyists at the Colorado State House. Mr. Schneider represents the Colorado Commissioners Association. Colorado's 63 counties—each has 3 county commissioners who are very sensitive to the ever-increasing burden that ADC payments have been placing on their county budgets. The county commissioners also wield significant political power. Mrs. Steel and I started "lobbying" Fritz Schneider a full month before the bill was introduced and his quick and strong support proved invaluable.

Between the three of us we were able to piece together reasonably clear pictures of what was going to happen at each successive stage of the bill's progress. However, even though we gradually realized that prospects were bright, I can assure you that we remained very nervous until the very end.

5. Endorsements by organizations

During the drafting process we learned that the Relief and Welfare Committee of the Colorado County Commissioners Association was to meet in Denver on Tuesday, February 23, 1965, and it occurred to us that a request to the legislature for a birth control bill coming from this group ought to carry some significant weight. How could we generate such a request? It was this question that led us to Mr. Schneider. He in turn made necessary arrangements for me to appear on the agenda of that February meeting and I suspect that his strong endorsement was responsible for the unanimous vote in favor of the resolution requesting a bill. I had prepared the resolution in advance and he gave it to the most influential member of the committee who then actually made the proposal.

COLORADO COUNTY COMMISSIONERS' LEGISLATIVE COMMITTEE APPROVES STATE BILL

The fact that a snowstorm resulted in one less than a quorum being present at that meeting did not destroy the value of the vote. It just so happened that the county commissioners' legislative committee was to meet on the following Friday. Using the same procedures I ap-

peared on their program and armed with the unanimous vote of the relief and welfare committee and having Mr. Schneider right there to nudge and prod, we were able to receive the endorsement of this group also.

Emboldened by success, I then checked to see what support I could find in the State department of public health. Dr. Cleere, the director, was favorably disposed and he suggested that I address the full board at its meeting on March 7. This group didn't accept my proposed resolution but did adopt what was in many ways an even more forceful statement.

STATE BOARD OF WELFARE SUPPORTS COLORADO BILL

The next project was to try for a similar endorsement from the State welfare board and it just happened that this group was also meeting at about the same time and was also willing to listen. A year earlier the State welfare board had refused to recommend that local welfare departments get into the birth control movement; it took the position that this was a matter for the legislature. Now, however, with three other groups having already spoken out, the State board of welfare went firmly on record in support of the bill.

From this point forward a snowball effect seemed to take control and before we were through we had favorable public statements from the following: Colorado Public Health Association; Denver Medical Society; Colorado Board of Public Health; Council on Governmental Relations of Colorado Medical Society; Governor's task force on mental retardation; State board of public welfare; Denver Welfare Board; Legislative Committee of Colorado County Commissioners Association; the YWCA; the Colorado Council of Churches; the Denver Area Council of Churches; both judges of the Denver juvenile court; Colorado Labor Council, AFL–CIO; and Mayor Currigan of Denver.

DISSEMINATION OF INFORMATION TO PRESS NECESSARY

6. Steady stream of news releases

The timing on the introduction of the bill in the legislature was influenced by advice that a controversial bill should be introduced mid-session and moved as quickly as possible and also by the dates for the various meetings which I have just described. To create maximum impact in the news media we maintained strict silence until the action of the county commissioners' relief and welfare committee was a matter of record. From then on we tried to keep up a steady flow of news items and always tried to have some new aspect to stress every few days.

Since the subject was so inherently newsworthy, we did not need any sort of public relations firm. I would simply pass out copies of the releases to the senate press table. When the senate was not in session I would take the releases around to the papers, news services, and TV stations. Progress of the bill was very well reported and on numerous occasions I was invited to appear on TV and radio broadcasts.

7. Specific promotional statistics and arguments

Consistent with our original plan, we released statistics and arguments to stir up public controversy whenever possible. At the time the

bill was introduced I released a statement that institutional and educational and ADC costs plus additional governmental facilities necessitated by unwanted children are likely to average a good $1,000 per unwanted child per year for 20 years, that 10 percent or 4,000 of Colorado's babies are unwanted, and taking into account the institutional costs for later years in life, that unwanted children in Colorado are creating an ultimate taxpayers' burden of $100 million for each year's crop. (Using these same techniques it is pretty easy to show that unwanted children in the Nation as a whole are creating ultimate taxpayers' burdens of at least $10 billion for each year's crop of unwanted babies. That's an awful lot to pay for an unwanted commodity.)

Incidentally, I should say that we were aware of Mr. Maremont's argument along these same lines, and it was his initial use of that argument that prompted us to make this analysis. We came up with a somewhat larger figure than he did.

STATE SENATORS INFORMED OF GROWTH OF ADC ROLLS

Just prior to the debate on the senate floor each senator was given a chart showing the ever-accelerating growth of ADC rolls and costs during the past 10 years. The figures which are set out in appendix B were included.

COLORADO PER CAPITA EXPENDITURES INCREASE; NUMBER OF RECIPIENTS GROW

I would just like to refer briefly to a few of those pictures. These are on the next to the last page. From 1959 to 1960 the total ADC expenditure in Colorado amounted to roughly $11 million. In 1962–64 it was roughly $17 million. The cost per child jumped 10 percent in those 4 years from $500 per child to $550 per child and the recipients of this area compared to the total population increased from 1.6 percent to 2.2 percent.

In other words, in every area of this program costs have gone up, the number of people in the program has gone up, and the graph itself showed a rise at about a 45° angle.

We also supplied each legislator with a rundown on the attitudes of various religious groups and this is reproduced as appendix C. It is on that same page.

At that point I would just make reference to the Gallup Poll on January 6, 1965, which stated that 8 out of every 10 persons interview favored making birth control information available anywhere in the United States to anyone who wanted it. Catholics favored full availability of this information by 78 percent, and non-Catholic by 82 percent.

And then I have quoted some positions of the church pertaining to birth control, and then listed the various national positions of various States. This information came from a brief filed by Planned Parenthood before the Supreme Court in the Connecticut case.

UNWED MOTHERS UNDER 18: A DEPRESSING STATISTIC IN COLORADO

Appendix D contains the figures on illegitimacy in Colorado that were released just prior to the final voting in the house. Some have

been mentioned already. I hope you will note the figures for mothers under 18 years of age.

While previous witnesses today have made reference to illegitimacy, I would like to point out these statistics from Denver General Hospital for mothers under 18 years old. They started keeping records at the time we were going ahead. I talked with Dr. Goddard, who kept them, and he said the figures have not changed over the past year.

Average age of mothers—17½ years old. Average number of children at that age—2.8 for each mother. Average number of children in family from which the mother came—7.8. Average education—through the ninth grade.

Marital status: Unmarried and none with immediate prospect, age at which mother commenced having intercourse—most commenced at age 13. One of these girls has borne five children by four different fathers. As I said, I talked with Dr. Goddard last week, and he said there had been no basic change over the past year in that particular group.

Finally, we reiterated over and over again that birth control services are a necessary part of any well-rounded health program. This could not be stressed too often.

8. Generating mail from home

We undertook only one limited effort to generate pressure from the public in the form of mail. A form letter was sent out to the membership of Planned Parenthood of Colorado throughout the State urging recipients to contact their senators and representatives. In addition, we were pleased to find that some of the 12 local health departments also endeavored to stir up similar pressures on their own initiative.

Actually, my mail was about evenly divided between those for and against the bill. All of us in the legislature noticed that the mail and telegrams running in favor of the bill came in at quite an uneven rate whereas the mail and telegrams running in opposition to the bill were bunched together on Mondays and Tuesdays.

9. The Catholics

A number of Catholics put up an intense and sometimes bitter fight. Our responses simply stressed the positive arguments for our case. We were pleasantly surprised to receive open support from Catholics such as Mr. Schneider, Mayor Currigan, the chairman of the State board of public health and many others.

10. Legislative handling

The bill was introduced in the senate on Wednesday, March 3, 1965, and immediately assigned to the health and welfare committee. It was most helpful that I happened to be chairman of that committee. In just a matter of minutes a committee meeting was held and the bill ordered printed. By prearrangement with the printer we received overnight printing service and it was possible to hold another committee meeting on the bill's merits on Thursday afternoon. Relying on our nose-count we didn't waste any time on hearings or discussion or anything like that, but simply voted it out for consideration by the whole senate. Our rules prevented senate action prior to the weekend.

COLORADO LEGISLATURE APPROVES FAMILY PLANNING

On Monday morning, as was not unexpected, our desks were stacked high with wires demanding a public hearing and on my motion the bill came back to my committee. Since we had been really very quiet until the bill was introduced and then moved quickly, our opponents were not prepared. When the hearing was held I allowed each speaker a precise 5 minutes. Mrs. Steel and I had worked up a truly blue-ribbon group of witnesses to cover every aspect of the controversy and the reasons for birth control received good press coverage. The opposition was poorly coordinated and came in with only half as many witnesses. After the hearing, the bill was promptly returned to the senate floor where it passed on March 18 by a 22 to 12 vote.

The house was ready for the bill when it arrived and it was expeditiously moved through their committees onto the house floor where it passed final reading by 41 to 16 on March 30, although not without some changes. We elected to let well enough alone, adopted the house's amendments, and Governor Love signed the bill on April 19, 1965.

COLORADO'S PRESENT BIRTH CONTROL NEEDS AND ACTIVITIES

A few approximate figures will convey a picture of Colorado's birth control needs in 1966:

Population	2,000,000
Female population	1,000,000
Married women	670,000
42 percent in child-bearing years	280,000
Births	40,000
Illegitimate birth rate	2,500
Estimated number of indigent needing services	37,000
Number currently "patients" at clinics including 2,700 new patients in 1965	7,700
Number not being served	29,300

Geographical distribution	Patient load		Not being served	
	Total	Per county	Total	Per county
1 county (Denver)	4,900	4,900	4,900	4,900
9 counties	2,600	290	13,400	1,500
53 counties	200	4	11,000	208
Total	7,700		29,300	

"THE 18,300 NOT BEING SERVED . . . EITHER ARE NOT AWARE OR SIMPLY AREN'T MOTIVATED . . ."

In the 10 major counties which hold 80 percent of Colorado's population, birth control services are available to virtually all who want it. Each of these counties (other than Jefferson which adjoins Denver) has at least one county-supported birth control clinic. Clinics are open from once a month to several times a week. Five of the county welfare departments pay for some of the supplies needed by welfare recipients. Clinic services are unavailable in the rural counties except in two areas.

The 18,300 not being served in the 10 major counties either are not aware or simply aren't motivated to such an extent that they obtain the service. This group produces far more than its proportionate share of births and a still larger share of the unwanted births.

NEED NOW FOR NURSES AND WORKERS TO CONVEY MEANINGS OF RESPONSIBLE FAMILY PLANNING

Women in this group will go to family planning clinics when informed about them by public health department nurses or welfare workers. Our most immediate problem in Colorado is getting these nurses and workers to understand and actively preach the many meanings of responsible family planning. They must learn to do this as a most important part of their regular daily duties and this means overcoming the inertia of the unconcerned and hands-off attitudes of the past.

PASSAGE OF . . . S. 1676 WILL SHOW THAT RESPONSIBLE FAMILY PLANNING IS A MATTER OF GREAT CONCERN FOR OUR WHOLE NATION

Passage of senate bill 232 showed public health and welfare personnel that responsible family planning is a matter of great concern for the State of Colorado. Passage of your bill, S. 1676, will show that responsible family planning is a matter of great concern for our whole Nation. This is an absolute necessity if population explosion is ever to be controlled.

I would also add this concluding remark, that it would be of tremendous help to have a population conference such as your bill contemplates. Last July I wrote to our State director of public health, our State director of welfare, and also to Planned Parenthood headquarters in New York, asking what Federal funds are available and how do we get them, and I was unable to get any clear-cut answer from any of these three sources.

One thing that a conference such as you contemplate could do would be to catalog the various sources of Federal funds so that when a local health or welfare department or a private agency wants to get some Federal help for a clinic it will know what route it can take to get these funds.

(The attachments to the formal statement appear in pt. 4, appendix, sec. A, to the public hearings on S. 1676, pp. 2041–2045.)

Senator GRUENING. Mr. Bermingham, I want not only to congratulate you on your statement, but on your great success as an effective legislator. You have set an example of how legislation should be enacted by diligence, attention to every detail, and by indefatigable and comprehensive effort which you certainly have demonstrated.

Yours was a great legislative achievement. It is a model for the guidance of legislators as to how legislation is to be secured. I think that your presentation should be made not merely a part of this record on population control but part of a political science handbook to serve as an example and a stimulus to other legislators and for the information of political science students.

I have one minor question. Page 757, in your table there, you say illegitimate birth rate, 2,500. Does that mean that that was the number of illegitimate births?

Mr. BERMINGHAM. Yes.

Senator GRUENING. Out of 40,000, 2,500 were illegitimate?

Mr. BERMINGHAM. Roughly. Six percent in Colorado is the illegitimate birth rate.

Senator GRUENING. This has been a very helpful, very valuable addition to our dialog.

Thank you very much.

Mr. BERMINGHAM. Thank you Senator.

Senator GRUENING. I now direct that two articles, from the Denver Post of February 4, 1966, and the New York Times of April 1, 1966, be included in the record.

(The articles referred to follow:)

EXHIBIT 124

LBJ'S GLOBAL AID GOALS ARE REALISTIC

(Denver Post, February 4, 1966)

President Johnson has asked a significant shift in foreign aid thinking. He has placed before Congress a plan which approaches world conditions—particularly the prospect of world famine—with a good deal more clarity than previous aid messages.

Two quotations seem to sum up much of the President's thinking. One is in the President's own words:

"As (world) death rates are driven down," the President told Congress, "the individual miracle of birth becomes a collective tragedy."

And a Republican congressman cited, in support of the President's approach, this Chinese proverb: "Give a man a fish and he will eat for one day. Teach him how to fish, and he will eat for the rest of his life."

These two statements suggest the deadly twins of a modern Apocalypse that—even without adding the dangers of war—endanger man's existence: overpopulation and much of the world's inability to cope with its environment.

In the area of birth control, the President did not offer any drastic new approaches. But he was blunt about the United States' interest in promoting such programs in countries which request help.

On the subject of food, President Johnson injected long-needed realism into the administration's attitude toward giveaways. For too many years, we have shipped U.S. surplus foods overseas without much thought about the effect such programs have in the long term.

Giving away food is humanitarian but it also creates tragedy. Recipients in underdeveloped countries are lulled into a security that cannot long continue. Unless nations in many parts of the world redouble their efforts to produce food they face a day when the handouts from Uncle Sam no longer will go around.

Already, despite U.S. wheat shipments, there have been food riots in southern India in the face of drought.

The President believes foreign aid should include—besides direct food aid and industrial projects—a much stronger emphasis on transfer of American technology in farm problems abroad, improvement of irrigation and marketing facilities, establishment of cooperatives and credit facilities and the expanded use of American seed and farm equipment.

To some, these direct approaches—often involving the application of pressure to corrupt or lackadaisical governments—will appear "hard boiled." We believe, however, they offer the only route by which tragedy can be averted.

President Johnson's program actually is much broader than these concepts would indicate. He supports financial aid to underdeveloped nations in much the same fashion as did his predecessors. Like his predecessors, he asks for extension of foreign aid authority for five years—a move that may be rejected as it has been in the past.

But all in all, the President's program shows a laudale interest in attacking the desperate crisis of overpopulation while there is still time. He should be supported in this war on global poverty.

EXHIBIT 125

UNWED TO RECEIVE BIRTH CONTROL AID

(By Nan Robertson, the New York Times, Apr. 1, 1966)

WASHINGTON, April 1.—Birth control instruction and contraceptives will now be supplied to all American women who need and request them under a significant new policy laid down by John W. Gardner, Secretary of Health, Education and Welfare.

That policy, which goes farther than any previously enunciated by a Government agency, came to light last night in a speech by Mrs. Katherine Oettinger, head of the Children's Bureau.

Mrs. Oettinger told a Planned Parenthood audience in Boston that the Department of Health, Education and Welfare, of which the bureau is a part, was carrying out the "clear mandate" of President Johnson to support birth control programs.

In the family planning section of his Health Message to Congress March 1, the President said:

"It is essential that all families have access to information and services that will allow freedom to choose the number and spacing of their children within the dictates of individual conscience."

"Let me emphasize," Mrs. Oettinger said last night, "that if the true meaning of President Johnson's insistence of freedom of choice is to be carried out, it will not be the role of the Federal Government to dictate which women shall or shall not have family planning services if they desire them."

This would mean that such services would be available to unwed mothers as well as married women living with their husbands. It lifts what one department spokesman called "judgmental restrictions" on giving birth control advice, pills or contraceptive devices to applicants for public health services.

Mrs. Oettinger's speech was based on a hitherto totally unpublicized policy directive that Secretary Gardner sent Jan. 24 to his agencies across the country. The language in the crucial sections of the directive was virtually duplicated by President Johnson in his subsequent message.

It was reinforced by another unpublicized memorandum dispatched March 4 by Mrs. Oettinger and Fred H. Steininger, director of the Bureau of Family Services.

The guidelines stipulated that "the department will make known to state and local agencies that funds are available" for such programs, "but it will bring no pressure upon them to participate."

Family planning projects conducted or supported by the department's agencies "shall guarantee freedom from coercion or pressure of mind or conscience," the directives stated.

"If you have not already adopted policy in this area, we ask that you consider the steps appropriate for your state in line with the position stated above," the department said.

The Children's Bureau is the most important single source of Federal funds for family planning. This year it is spending $3-million in 32 states for such projects. Next year it expects to spend $5-million.

The other important source is the Office of Economic Opportunity, which has spent $1.25-million on family planning in the last 15 months. However, that agency prohibits giving birth control devices to needy unwed mothers.

It will allow physicians to give information to all who seek it. This information clause is sometimes interpreted to include giving prescriptions for devices, which the women then purchase with their own money.

Rules just agreed upon at the antipoverty agency dramatically raise the financial support available for birth control systems.

The American Civil Liberties Union continues to criticize the antipoverty agency's stand on unmarried mothers as "discrimination." It calls the restriction "outside the criteria of the program, just as discrimination because of religion or race would be."

Senator GRUENING. Now we have Dr. Stephen Plank. Sorry to keep you waiting.

BIOGRAPHIC STATEMENT: STEPHEN PLANK

Dr. Stephen Plank is an assistant professor of population studies at Harvard University School of Public Health. He is 39 years old, is married, and has a son and a daughter.

He obtained his Ph. B. at the University of Chicago in 1948; his A.B. and his M.D. at the University of California in 1951 and 1955, respectively; and his M.P.H. and D.P.H. in 1961 and 1964 at Harvard University. His doctoral thesis was on "Immunologic Control of Fertility."

Dr. Plank has had clinical experience in hospitals in the Panama Canal Zone in 1955–60, and at the Peter Bent Brigham Hospital, gyn-study clinic.

His memberships include the American Association for the Advancement of Science, the American Public Health Association, the American Association of Planned Parenthood Physicians, and he is the current president of the Planned Parenthood League of Massachusetts.

Dr. Plank is consultant to the Harvard University of Chile Family Study in Santiago. At the beginning of this year he took part in the Pan American Health Organization Conference on Population programs.

We are very happy to have you here, Dr. Plank. Please proceed.

STATEMENT OF STEPHEN PLANK, DEPARTMENT OF DEMOGRAPHY AND HUMAN ECOLOGY, HARVARD SCHOOL OF PUBLIC HEALTH, HARVARD UNIVERSITY

Dr. PLANK. Thank you, Mr. Chairman. My clinical experience in Panama, particularly in pediatrics, led to my concern with population growth and fertility control as these affect health. I would also like to point out in opening that an accounting of health advances in recent years and their effect on population growth is a really encyclopedic task. Therefore, I have elected to review quite briefly some of the major developments and tried to relate these to the other forces which have also influenced population trends.

The progress during the past hundred years in controlling disease, disability, and early death is surely humanity's greatest achievement. Its greatest challenge now is to continue these advances so that everyone can have a reasonable assurance of a long and healthy life. Emerging as a principal obstacle to further success, however, is the accelerated population growth which has resulted from a declining mortality. Without a corresponding decline in fertility, our tenuous restraints on disease and death will be lost.

Beyond the self-evident biological truth that death rates will balance birth rates in the long run, these vital forces are strongly related in other ways as well. High mortality demands high natality. Where the risk of early death is great the number of births must be great for group survival. But high fertility reinforces high mortality and is thus perpetuated. This vicious circle is more vulnerable at present through control of the causes of death than through direct attacks on birth rates, per se. The consequent population increase, of course, aggravates the difficulty of keeping death rates low enough for long

enough so that people can perceive the practical desirability of birth control. Where this has been accomplished, however, family planning has generally been adopted; thus there is warrant for cautious optimism.

Where disease and death have been most effectively controlled the credit must be broadly shared. In addition to specific health measures there have been immeasurable contributions from programs of economic development, agricultural expansion, and what can be termed simply good government.

ECONOMIC DEVELOPMENT CAN PROMOTE POPULATION GROWTH

That economic development is a potent force in promoting population growth is too often neglected. Increased production is converted into a higher standard of living, roughly synonymous with better health and longer life, which is, after all, the reason for the economic effort. But as with health programs, progress in economic ones may be limited by the excessive population increase their success entails. Where the growth in gross national product is too closely paralleled by growth in population there is little individual benefit. Clearly, the GNP per capita would rise more rapidly if the production increases could be continued while population grew more slowly.

In contemplating population control, however, we must distinguish sharply between the two methods. There is an enormous difference between permitting a death and preventing a birth. Population control by means of high mortality is unquestionably effective, but throughout the centuries it has not been associated with striking progress of any sort. Cutting back on health programs now in order to restrain population increase would be morally repugnant and just plain silly. No nation is suffering from too much health, though it may be suffering from too little else.

The extraordinary advances in agricultural production have already been described to this committee by Secretary Freeman. It is quite obvious that those whose lives were protected by health programs could not have survived without the added food. The extra calories also provided the energy for the human effort in development. Nevertheless, more and better quality food is still required in most of the world. The tendency is again noted for increments in production to be converted into increased numbers of consumers so that per capita gains are negligible or nil. And control of fertility is again necessary if the additional food is to be translated into better nutrition.

Good government I mentioned, too, as contributing to population growth. Good government implies, among other things, the maintenance of civil order and the promotion of well-being. Good government means programs to provide people with adequate supplies of safe water, houses and hospitals, schools, roads, pest control, and sewerage systems. Agricultural, economic, and health programs are really just implements which require good government for their most effective development and application. But the benefits of all these projects and programs are minimized by their demographic consequences which even endanger the civil order. For the common good and its own continuation, good government must help restrain redundant reproduction by promoting family planning education and services and by developing small-family incentives.

Although science and technology are usually given the credit for progress in controlling disease, more revolutionarily new than recent discoveries and inventions is the collective resolve to use what we know and the skills that we have for the benefit of others. Smallpox vaccination, as a striking example, is almost as old as our Republic; what is new is the determination, enunciated by President Johnson, to vanquish the disease totally.

LOWERED FEMALE MORTALITY HIGHLIGHTS NEED FOR FERTILITY CONTROL

As mortality declines, population grows, of course, simply because there are more survivors around than there would be otherwise. But contributing significantly to population increase are the babies born to the many more women who now survive to and through the reproductive years. Female mortality was compared by Harold Dorn for Guatemala and the United States in 1950. He concluded that there would be 85 percent more Guatemalan women living to age 50 if their age-specific death rates were reduced to our levels. So unless fertility is controlled, a substantial multiplier effect can be expected from every death prevented among girls.

Medical and surgical advances against conditions of the later years, such as heart disease, stroke, and cancer, enhance survivorship almost exclusively. The prevention of death from most other causes, however, has the added potential of increasing the number of births by keeping young women alive. Campaigns against certain diseases may exert a third type of demographic impact. The probability of an individual woman's having a live birth is increased by the prevention or treatment of malaria, for instance, and some venereal diseases. Malaria and syphilis can attack the conceptus in utero with fetal death a frequent consequence. Gonorrhea can damage the fallopian tubes and cause female sterility. (The recent decline in the proportion of childless couples in this country is due in part to more effective control of gonorrhea.) Protection from these diseases means more babies.

EXTRA PROTECTION BEGETS EXTRA PRODUCTION

Malaria control provides probably the most dramatic and certainly the most publicized case of an effective public health program. DDT sprayed onto the walls of homes rapidly interrupts malaria transmission by killing the mosquitoes which carry the disease from one victim to another. Previous methods of control were laborious, costly, and less effective. At about the time that DDT came into wide use, newer therapeutic preparations began to replace quinine in the treatment of acute attacks and the prevention of relapses. As a result of intensive campaigns against mosquitoes and the parasites, about half of the people now living in what were malarious zones 20 years ago are no longer endangered by the disease. Progress continues.

Balanced against the success as measured by the numbers of extra consumers is the success as measured by extra production. Getting rid of malaria would only have shifted the cause of death from this to some other agent if its control had not been followed by marked increases in food production. Fertile land previously untilled because of the danger of malaria is now being cultivated, and men who might have been dead or disabled can farm more effectively, too. Malaria

control, to be sure, cannot guarantee that productivity will rise; but it can remove a potent limiting factor to greater output. In spite of recurrent rumors that the control of malaria has caused decreasing incomes in India or Ceylon or Mexico, the data from these nations show GNP rising at an unprecedented rate. Even on a per capita basis it is growing at least as fast as ever before. This would not have happened without the reduction in malaria morbidity and mortality.

THE DRAMATIC IMPACT OF ANTIBIOTICS

Equaling DDT in dramatic impact have been the antibiotics. Almost every bacterial disease of significance has met its match in one or another of these. So strikingly effective have they been that it is surprising to realize that since their extensive use began in the United States, some 20 years ago, life expectancy at birth has increased by only about a quarter as much as it had between 1900 and 1945. This is not because the newer agents are less effective than we tend to think but that so much had already been accomplished by the less spectacular means of environmental sanitation, milk pasteurization, water filtration and chlorination, sewerage systems, and immunizations. It was the prevention of disease rather than its treatment that had the greater impact on health and demography. Medical care remained largely symptomatic and supportive until the sulfas were introduced in the late thirties.

THE "SANITARY REVOLUTION" OF 1850

What could be called the sanitary revolution began around the middle of the last century. Following the installation of a water system, drainage, and a few other elementary measures, the crude death rate in one English community reportedly declined two-thirds, from 68 to 23, in a few years—a more precipitous drop in mortality than in the celebrated case of Ceylon a century later.

It was another 30 years before bacteriology came into its own. The contributions of this science greatly clarified medical understanding of illness, thus enhancing rational regimens for prevention and care. The identification of the causative organisms of many diseases made specific diagnosis more certain, and led fairly quickly to the development of techniques for safely inducing protective immunity. For some serious conditions—mainly, diphtheria, tetanus, and certain types of pneumonia—the blood serum from specifically immunized horses was used to combat the infection or its toxic products. Furthermore, immunology yielded methods of precise diagnosis through reactions of the patient's serum or skin. The spreading acceptance of immunization has resulted in whooping cough and diphtheria, previously common childhood diseases, becoming relative rarities in this country today.

A DECADE IN LIFE EXPECTANCY ADDED BETWEEN 1850 AND 1900

Between 1850 and 1900 about a decade was added to the life expectancy of people here. As elsewhere and at other times, better health and economic growth were probably mutually reinforcing. There were improvements in sanitary conditions, better housing with less crowding, better nutrition, and better facilities for the care of the sick.

In response to these essentially nonmedical advances, tuberculosis mortality began to decline, and by 1910 it ceased to be the Nation's No. 1 cause of death. Subsequently, the campaigns for diagnosis using mass X-ray screening and skin tests helped in the early identification of the tubercular who could then be isolated, further limiting the spread of TB. A weak strain of tubercle bacilli has been available since the 1920's to induce immunologic defenses, but it has had little acceptance in the United States since the need here only occasionally justified its use. Only since 1943 has there been an antibiotic against tuberculosis, and even more recently has an effective chemotherapeutic agent been found. Surgical techniques, too, have now developed so that they can aid in combating the illness. All of these have helped to force the TB toll down farther, but none has been so important as the fact that a progressively smaller and smaller proportion of our population is being exposed to the infection.

Typhoid fever provides an example of control almost exclusively through the treatment of water supplies and the protection of them from contamination by sewage. Vaccination against typhoid is of definite use for those who must risk exposure to infection, but it is less than perfect. Antibiotic therapy is quite effective, too, but even with its use the case-fatality rate is still 2 percent.

DISEASE CAN FLOURISH AMONG THE MALNOURISHED

The relatively high standards of nutrition, preventive medicine, and sanitation in the United States have blurred our perspective of the relationship between environmental forces and human health. We tend, for instance, to regard measles as an innocuous nuisance; but measles accounts for the death of 5 to 10 percent of children in some parts of the world today. The astounding impact of measles on malnourished youngsters illustrates the intimate relationship between nutrition and resistance to disease. In some cases it appears that even organisms not usually dangerous to health may become so in the badly nourished. This should be kept in mind in evaluating the effect of the current food shortage in India. Some students of the problem have estimated that upward of a million deaths will follow famine, but others have discounted the risk. It seems unlikely that death will often be registered as due to starvation, but an adequate diet would prevent much of the loss to be ascribed to other causes.

"BIRTH RATES MUST DECLINE OR OUR STANDARDS OF HEALTH INEVITABLY WILL"

This spotty sketch of factors influencing mortality has shown how dependent our present standards of well-being and longevity are on environmental conditions. The demographic threat is to the modest freedom which has been won from crowding, filth, and malnutrition. Birth rates must decline or our standards of health inevitably will. The pending environmental deterioration cannot be compensated by medical technology, by sprays, shots, or pills; if it could, there might be less occasion for the urgent concern of this committee.

In conclusion, then, the causes of diminishing death rates are multiple and complexly interrelated. Social and economic conditions have had a direct impact, and have encouraged the development and appli-

cation of life protecting measures. Similarly, the determinants of birth rates are many and complex; fertility is no more dependent on medical technology than is mortality. Nevertheless, just as programs for preventing disease and death are appropriate to the health professions, so are programs for preventing conception.

For this reason I endorse that part of your bill calling for an Assistant Secretary of Health, Education, and Welfare to facilitate family planning in this country. But since it is so properly a health matter, I question the appropriateness of having an Assistant Secretary of State be responsible for our international cooperation in controlling fertility. In my opinion, there would be little to be gained by this, and there is the risk that our motives might be misinterpreted overseas, perhaps even deliberately by some. Preferably, such assistance should be channeled through international health agencies, such as the Pan American Health Organization or WHO.

I have been deeply honored by your invitation, and thank you for the opportunity to be here.

Senator GRUENING. Thank you very much. In fact, I think your testimony has been very helpful. Of course there are reasons for having two assistant secretaries.

The field is so large. We have been repeatedly impressed by the fact that our foreign aid programs are very seriously undercut if not nullified by the population explosion, and the mere fact that the State Department would create such an agency would be a great stimulus to corresponding action abroad.

We have received communications from other countries which indicate very clearly that they would like that kind of assistance, and after all, this is wholly voluntary. No one has to have it. No one has to accept it. No one has to accept either the information or the methods.

It is simply made available for those countries, for those communities abroad that wish it. So it is really part of the general purpose to make the information available for those who wish it. There is no element of compulsion in this at all, and there shouldn't be.

I suppose that if we were to write a complete history of the great change in the relations of the birth rate to the death rate, while you might go back as far as Jenner and his discovery of smallpox vaccine, the real beginning I think came with Pasteur, and the discovery of microbiology, and antiseptics and operations, and so forth.

CHANGES IN THE LEVELS OF HEALTH AND MORTALITY ARE BEING CREATED BY POPULATION INCREASE AND ENVIRONMENTAL HAZARDS

Dr. PLANK. Apparently there was a great move for sanitation in the environment which preceded the work of Pasteur and Koch in the identification of organisms, and this had a great deal to do with it, just the improvement in housing and in nutrition and getting the filth out of the streets helped it greatly. But my fear in the population crisis is that the very conditions which have helped us control death are being threatened; that the return of pollution, contamination of the environment, the nutritional standards and other housing standards will deteriorate to the extent that we will be unable to maintain the gains that we have won and fought so hard to win in the control of disease.

Senator GRUENING. Then there are among other things that you have not mentioned the increased knowledge about dietetics. I recall in my youth there were people with enormous avoirdupois and it was never considered then that overweight would shorten life at all. We have learned that within this last half century.

Many factors have contributed to lengthened life besides the individual great discoveries, and in the cases that you mentioned.

Dr. PLANK. I think that a volume ought to be written on this theme to relate the specific events to the changes in levels of health and mortality. I look forward to it as a great challenge. I can see that this would be a life's work.

Senator GRUENING. Well, there is a new understanding about the need of fresh air. In some countries there are superstitions that night air is dangerous. People go around with their faces muffled up at night. A little education and enlightenment usually cures them of those inherited beliefs. Thank you very much for coming to Washington, D.C., to be with us today.

Dr. PLANK. Thank you, sir.

Senator GRUENING. I will place in the record at this point a document from the Library of Congress entitled "Mortality in the United States, 1900–1963."

(The material referred to follows:)

EXHIBIT 126

MORTALITY IN THE UNITED STATES, 1900–1963

(Draft statement prepared at the request of Senator Ernest Gruening by Susan Farrell, Education and Public Welfare Division, Legislative Reference Service)

In 1900 the crude death rate in the United States was 17.2 per 1,000 population; by 1963 it had dropped to 9.6, a reduction of almost 45 percent. Sharp annual variations, resulting largely from frequent epidemics of influenza, make it difficult to discern any clear trend. But when the annual rates are adjusted for the changing age composition of the population, three major phases become clear. The first is from 1900 to 1937, during which the age-adjusted rates remain roughly comparable to the crude. A rapidly accelerating downward trend begins in 1937 and persists until 1954. Since 1954 the death rate has remained fairly level.

MORTALITY BY AGE

The general patterns of mortality by age for 1900 and 1963 are similar. That is, the death rate is very high in infancy, drops to its lowest point at ages 5–14, then rises steadily with advancing age to its highest point at ages 85 and over.

In 1900, the rate in infancy was 162.1 per 1,000 population (of that age group, in the 10 death-registration states and the District of Columbia), 3.9 at ages 5–14, 260.9 at 85 and over. In 1963, the rates were markedly lower, but the pattern identical: a rate of 25.4 at infancy, a low of 0.4 at ages 5–14, rising to a high of 210.1 at 85 and over.

These reductions in mortality as well as gains in expectation of life are clearly concentrated in the younger age groups, but there have been some improvements in the middle and older age groups. A white male child born in 1900–1902 had a life expectancy of 48.2 years; in 1961 it was 67.8, a gain of

more than 19 years. This large gain in life expectancy at birth is true for both sexes and for both the white and nonwhite population; the highest gain is among nonwhite women, who now have a life expectancy at birth 32 years greater than they did at the turn of the century. Increase in life expectancy since 1900 ranges from approximately 4 to 8 years at age 40 and from approximately 2 to 4 years at age 65.

MORTALITY BY SEX AND COLOR

Since 1900 the death rate has declined more rapidly for women than for men. The age-adjusted death rate for women dropped from 17.0 in 1900 to 5.8 in 1963, a reduction of approximately 2.3. For men the drop was by less than half—18.6 to 9.6. The death rate for men has been higher than for women at all times since 1900, but the gap has widened steadily and was at its greatest in 1963. (Male mortality exceeded female by 9.5 percent in 1900, by more than 65 percent in 1963.) This differential between male and female mortality, which varies with age, results from a greater drop in female mortality rather than an increase in the male death rate and is related to changes in the leading causes of death and great reduction in maternal mortality.

In contrast, the differential between white and nonwhite populations has narrowed. In 1900 the age-adjusted death rate for the nonwhite population was 27.8 per 1,000, 10.2 deaths per 1,000 higher than the rate for whites. By 1963, with the decline in nonwhite mortality proceeding faster than that among whites, the age-adjusted rate for nonwhites was 10.6, the rate for whites 7.2—and the difference reduced to 3.4 deaths per 1,000. But nonwhite mortality at infancy is still almost double that of the white population and is higher at every age group except over 75 (and it is possible that this is due in part to misstatement of age among the older members of the nonwhite population). The death rate for nonwhite men is higher than for women, as is true among whites. But the gap is smaller because reduction in female mortality among nonwhites has been smaller than among whites, to some extent because the hazards of childbirth remain greater for nonwhite women.

In sum, although the life expectancy of nonwhites has almost doubled since the turn of the century, nonwhite mortality in 1963 was somewhat higher than white mortality in 1938.

MORTALITY BY CAUSE

Since the turn of the century, there has been a dramatic shift in the major causes of death from infections and parasitic to chronic degenerative diseases. In 1900 the most frequent cause of death was influenza and pneumonia, which together accounted for almost 12 percent of all deaths. By 1963, they had dropped to fifth place among the leading causes of death and were responsible for only 3.9 percent of total mortality. Tuberculosis, the second leading cause of death at the turn of the century, has not been numbered among the major causes of death for many years and now accounts for less than 1 percent of all deaths. Gastritis and diphtheria, too, are no longer among the leading causes of death.[1]

[1] Many deaths formerly classified as chronic nephritis are now attributed to heart disease.

Leading causes of death, by rank, United States, 1900[1] and 1963

Rank	Cause of death	Deaths per 100,000 population	Percent of all deaths
	1900		
	All causes	1,719.1	100.0
1	Influenza and pneumonia	202.2	11.8
2	Tuberculosis (all forms)	194.4	11.3
3	Gastritis, etc	142.7	8.3
4	Diseases of the heart	137.4	8.0
5	Vascular lesions affecting CNS	106.9	6.2
6	Chronic nephritis	81.0	4.7
7	All accidents	72.3	4.2
8	Malignant neoplasms (cancer)	64.0	3.7
9	Certain diseases of early infancy	62.6	3.6
10	Diphtheria	40.3	2.3
	1963		
	All causes	961.9	100.0
1	Diseases of heart	375.4	39.0
2	Malignant neoplasms	151.4	15.7
3	Vascular lesions affecting CNS	106.7	11.1
4	All accidents	53.4	5.6
5	Influenza and pneumonia	37.5	3.9
6	Certain diseases of early infancy	33.3	3.5
7	General arteriosclerosis	19.9	2.1
8	Diabetes mellitus	17.2	1.8
9	Other diseases of circulatory system	12.9	1.3
10	Other bronchopulmonic diseases	12.3	1.3

[1] Rates for 1900 apply to the death-registration States only.

Source: Various reports of the Division of Vital Statistics, National Center for Health Statistics, Department of Health, Education and Welfare.

But diseases of the heart, most commonly associated with high blood pressure and hardening of the arteries, have jumped from fourth to first place and now account for almost 40 percent of all deaths—nearly five times as much as they did in 1900. And with advances against rheumatic fever and rheumatic heart diseases, which usually strike early in life, heart disease is increasingly an affliction of middle and old age. Cancer, too, has increased. Now second among the causes of death, it is responsible for more than 15 percent of all deaths. A portion of this increase is undoubtedly due to refined diagnosis, but a significant part is due to actual increase in occurrence—especially in leukemia and cancer of the respiratory system. Vascular lesions affecting the central nervous system have moved from 5th to 3rd place, increasing by more than 80 percent. In 1963 these three diseases together accounted for over 65 percent of all deaths, more than the ten leading causes of death in 1900 combined.

Partly, no doubt, because of this concentration of death in a smaller number of leading causes, several other chronic diseases—generally arteriosclerosis, (other) diseases of the circulatory system, diabetes mellitus, (other) bronchopulmonic diseases—have moved into the ranks of the leading causes of death. Chronic bronchopulmonary disease, which as recently as 2 years ago were not among the ten leading causes of death are emerging as a serious problem. The percentage of deaths they cause has been rising steadily in recent years.

REASONS FOR CHANGING PATTERNS OF MORTALITY

The drop in the death rate since 1900 is due in part to a large number of factors distinct from specific medical advances. The past 65 years have witnessed a rapid and far-reaching rise in living standards. Vastly improved nutrition, better housing, pure water and pasteurized milk, public sanitation, shorter working hours, improved conditions of labor, greater leisure—all have contributed to increasing our expectation of life. Voluntary health insurance agencies have brought medical care within the reach of millions. If public health progress can indeed be considered "periodic redefining of the unacceptable," the growing knowledge and sophistication of the American public in health matters have had

much to do with the nation's progress. In this development, the voluntary health organizations have played a part, as they have also in the training of health service personnel, medical research, and the improvement of health administration. At the same time, the scope and volume of health services have grown greatly—in prevention, diagnosis, and therapy—in response to our developing definition of the unacceptable.

Medically, the reduction in mortality is the result of great advances in the prevention and control of infectious diseases. The drop in the death rate from influenza-pneumonia, for example, began in the late 1920's with the introduction of several anti-pneumonia sera, accelerated with the discovery of sulfonamides and penicillin, and has reached a low point with the use of broad spectrum antibiotics.

Tuberculosis has been sharply reduced (though it is still frequent in segments of the nonwhite population) largely because of improved living conditions and a nationwide educational campaign to demonstrate that mortality could be cut by discovery of early and incipient cases which are amenable to treatment. Long-term hospitalization of tuberculosis patients was significant early in the century in controlling the spread of infection as well as hastening healing; more recently, advances in chemotherapy have made extended hospitalization rare.

Diphtheria has been virtually eliminated through immunization. And a number of other greatly feared and communicable childhood diseases (whooping cough, scarlet fever, measles) have been rendered less fatal and reduced in severity through improved chemotherapy, immunization, or convalescent serum. Indeed, between 1900 and 1963, the largest relative declines in mortality took place among children. Moreover, there are now fewer premature deaths from cardiac and renal failure caused by damage to heart and kidneys from nonfatal cases of certain childhood diseases.

One of the most significant advances has been reduction of mortality resulting from pregnancy and childbirth (though this was not among the leading causes of death). Development of hospital sanitation standards, obstetrical surgery, and drugs to combat infection as well as the rising proportion of births attended by physicians reduced maternal mortality in 1963 to less than 4 percent—10,000 live births (compared to somewhat over 70 in 1915–19).

The trend in infant mortality is closely allied, since both child and mother have profited from these advances. In 1915–19, 95.7 infants died for every 1,000 live births; in 1963 the rate was 25.2.[2] The bulk of this decline occurred in the post-neonatal period (infants aged 28 days and over) and in deaths caused by infective and parasitic diseases, respiratory conditions, and digestive diseases. (Reduction in death from congenital malformations and "certain diseases of early infancy," which includes birth injuries and premature birth have been less substantial. And as is true of maternal mortality, infant mortality is much higher among the nonwhite population than the white.)

OUTLOOK FOR THE FUTURE

The impact of these developments on the death rate began to diminish in the mid-1950's as a proportion of deaths from these diseases and conditions decreased—and a "major realinement" of the causes of death became evident.

In fact, there are indications that the leveling off of death rates for influenza, pneumonia, and the infective and parasitic diseases did not account for the major portion of this decleration of the decline in overall death rates. More important are the trends for cardiovascular-renal diseases, malignant neoplasms, accidents and violence, diabetes, and chronic bronchopulmonary diseases which not only are not declining as have the infective diseases, but are actually rising (in varying degrees among certain age groups). The recent rise in death from chronic bronchopulmonary diseases from middle age onward is a case in point. The combined effect of all these trends works to retard the downward course of the overall death rate—and has maintained mortality at approximately the same level for a number of years.

Comparison of U.S. death rates by age and sex with the death rates of countries of low mortality indicates that some advance is possible. While it is difficult to determine the biologically irreducible minimum, the death rates in the U.S. are obviously far higher than those of the Scandinavian countries or the Netherlands (and even these rates, of course, cannot be considered the lowest attainable).

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[2] The rates for infant mortality given here are computed against live births; those given earlier are based on the population under age one.

Examining U.S. death rates by causes of death also indicates that further reductions are possible. Pneumonia, for example, is one of the five principal causes of death in certain sex and color groups.

But any substantial decrease must come from the lowering of death rates for the chronic non-infective diseases, whose complex relationship to environment and patterns of life make their conquest irreducible to a specific vaccine or prophylactic measure. Indeed, major increases in longevity are most likely to result from a breakthrough in understanding of the aging process rather than the solution to a single disease. The possible elmination of cardiovascular disease is a major exception.

Senator GRUENING. We stand in recess until tomorrow, when Mr. John Gardner, the Secretary of Health, Education, and Welfare, will be the witness.

(Whereupon, at 4:30 p.m., the committee was adjourned, to reconvene on Thursday, April 7, 1966, at 10 a.m.)

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