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The study Growth of American Families yields a number of important generalizations about family building patterns and expected family size among the white population of the United States. This study was done jointly by the Scripps Foundation for Research in Population Problems of Miami University and the Survey Research Center of the University of Michigan. The main findings are presented in the book <u>Family Planning</u>, <u>Sterility</u>, and <u>Population Growth</u> by Ronald Freedman, Pascal K. Whelpton, and Arthur A. Campbell, to be published by McGraw-Hill in the spring of 1959.¹

The 2,713 women included in our sample are a representative cross section of white wives, 18 to 39 years old, living with their husbands or with husband temporarily absent in the armed forces. The Survey Research Center interviewed these wives in the spring of 1955. They were questioned intensively about their pregnancy history, physiological limitations on their fertility, their use of contraception, their expectations regarding family size, and various socioeconomic topics such as religious preference, educational attainment, and income. Although the interviews were long--80 minutes on the average -- they were, in general well received by the respondents. The women showed interest in the subjects covered--particularly those concerning their own family growth--and often volunteered information not asked for in the questionnaire. Very few of the wives who were interviewed refused to answer questions on the presumably "sensitive" topic of contraception. Only ten declined to say whether or not they had ever tried to limit family size or space their pregnancies. In contrast, over 100 refused to give any information about their husband's income. The willingness of the wives to discuss methods of contraception and impairments of the reproductive system leads us to believe that even more information about such personal topics than was gathered in this study can be collected in future surveys.

<u>Fecundity impairments</u>.--One of the basic areas covered in our study deals with impairments of the reproductive system. How widespread are such impairments, and how severe are they?

It should be noted first of all that our information about fecundity is limited to that given by the wives interviewed. At best, it represents the wife's report of her doctor's opinion. A systematic medical investigation of such a large sample was, of course, out of the question. Our reliance on the women's answers undoubtedly introduces some biases in our estimates of the extent of subfecundity. These biases are probably downward--in part because some women may have been reluctant to report any known physiological defects, but largely because the use of contraception prevents some couples from discovering that they have reproductive impairments. For example, a couple that is unable to have any children will not discover this fact as long as they use contraception, unless they have obvious physical indications of subfecundity.

Even though our estimates of reproductive impairments are minimal, it is apparent that subfecundity is widespread. About one in three couples with wife aged 18 to 39 can be classified as Subfecund²--that is, their capacity to have children in the future is either entirely lacking or substantially below normal. However, this proportion is partially a function of the way we have defined subfecundity. Four categories were established:

1. The Definitely Sterile couples are those who cannot have another pregnancy. For most such couples, the basis for classifying them as Definitely Sterile is an operation on the husband or wife making conception impossible.

2. The Probably Sterile couples are those for whom a birth in the future is considered improbable, rather than impossible, on the basis of the wife's report of her doctor's opinion.

3. The Semifecund couples are those who knew of no physiclogical condition limiting reproduction, but who did not conceive at a "normal" rate while contraception was not being used.³

4. The Indeterminate couples cannot be classified as Fecund or Subfecund on the basis of our information and criteria. Like the Semifecund, they failed to conceive at a "normal" rate when contraception was not used. However, even though they did not report using contraception, they did report using a douche after intercourse for cleanliness only. Since we did not ask about the type of douche, regularity of use, or how soon after intercourse it was used, we have no basis for evaluating its contraceptive effect. It is impossible to say, then, whether the abnormally low rate of conception was due to douching or to impaired fecundity.

The combination of the four groups just defined is designated as the Subfecund. The remaining couples, for whom we have no reason to suspect impaired fecundity, constitute the Fecund group. Although we are sure that some of the Indeterminate couples are Fecund, we include all of them among the Subfecund partly in order to counterbalance the suspected inclusion among the Fecund of some couples with undiscovered fecundity impairments.

The proportions in the various fecundity groups are shown in Table 1 both for the total sample and for wives married 15 years or more. The proportion who are Subfecund increases steadily with duration of marriage and with age.

How does subfecundity affect the national fertility picture? We cannot give a precise answer to this question, but the general answer is clear: subfecundity has a relatively minor affect on average family size in the United States. We estimate that if all fecundity impairments were to be eliminated, the number of births probably would rise by about 10 to 15 per cent, other things being equal.

The effect of subfecundity on our birth rate is so small because most Subfecund couples have at least one birth. Among Subfecund couples married 15 years or more, only 17 per cent had had no children; the average number of children ever borne was 2.5, or 1 child fewer than the 3.5 borne by Fecund couples who had been married 15 years or more.

Although most couples classified as Subfecund had been able to have at least one birth, it is clear that subfecundity is by far the major cause of childlessness. Again, confining our attention to couples who had a chance to test their fecundity during 15 years of marriage, we find that 10 per cent are childless and that nearly all of these childless couples (96 per cent) are Subfecund. Couples who voluntarily remain childless for as long as 15 years are extremely rare.

TABLE 1. PER CENT DISTRIBUTION BY FECUNDITY STATUS FOR ALL COUPLES AND FOR COUPLES MARRIED 15 YEARS OR LONGER⁴

Fecundity status	All couples	Couples married 15 years or longer	
Total: Number	2,713	509	
Per cent ·····	100	100	
Fecund	66	42	
Definitely Sterile	10	24	
Probably Sterile	7	8	
Semifecund	12	19	
Indeterminate •••••••	5	7	

Is fecundity related to socioeconomic status? Apparently not to any great extent. When couples are classified by income or rural-urban background we find no systematic differences in fecundity. When we use education as the basis of classification, however, we find that the less educated are more likely to be Subfecund than are the better educated. This may seem surprising, because the less educated usually have more births. Why is it that they are also more likely to be Subfecund? We think that this apparent inconsistency arises largely because the less educated make less use of contraception and therefore have more opportunity to discover fecundity impairments than do the better educated. As we noted before, many couples discover fecundity impairments only when they are not using contraception. We doubt that there are any basic biological differences between educational groups that would lead to substantial differences in their fecundity.

In general, then, we cannot explain differences in the fertility of the major socioeconomic groups by variations in fecundity. There is, however, one important fertility differential that is related to fecundity--specifically, wives who are gainfully employed have smaller families than those who are not employed. This is partly due to the fact that working wives are more likely to be Subfecund than are nonworking wives. A higher incidence of subfecundity is not the only reason for the lower fertility of working wives, however, for we also find that among couples with no fecundity impairments, wives who work have fewer children than those who do not work. This is true regardless of age or duration of marriage.

The use of contraception .-- A large majority

of the wives interviewed said that they approved of contraception and that they had already used it or intended to do so. Only 21 per cent of the wives said that they and their husbands never had used and never would use contraception; the majority of such couples (15 per cent of the total sample) were Subfecund. Only 6 per cent of all couples were Fecund and intended never to use contraception. It is possible, of course, that some of the couples in this small minority may not put their expressed intentions into practice.

Within the meaning of the term contraception we include all methods except sterilization that couples use to avoid conception. Thus, the term encompasses periodic continence (or the rhythm method) advocated by the Catholic Church, abstinence from sexual intercourse, withdrawal (or coitus interruptus), and the various appliance and chemical methods. We included douche if it was used with contraceptive intent, but not if it was used merely for cleanliness.

The generalization that most Fecund couples use contraception can be extended to all major socioeconomic groups (Table 2). In general, there are differences in the proportions using contraception, but these differences are confined to a relatively narrow range. As would be expected, a smaller proportion of Catholics than of non-Catholics use contraception. Nevertheless, a large majority of Fecund Catholics (80 percent) have used or intend to use contraception. As we shall see later, this does not necessarily mean that they are violating the teachings of their Church with respect to contraceptive practices. Education and income are also related to the use of contraception--couples with lower status having the lower proportions of Users. Even among the lower status groups, however, a large majority have used contraception or intend to do so.

Most couples begin to use contraception at an early stage of family growth. Many start at the

TABLE 2. PERCENTAGE OF FECUND COUPLES WHO HAVE USED OR WHO INTEND TO USE CONTRACEPTION, BY SELECTED SOCIOECONOMIC CHARACTERISTICS

Socioeconomic characteristics	Have used contraception	Have used or intend to use con- traception 90	
Total	83		
Wife's religion:			
Protestant	88	94	
Catholic	70	80	
Jewish	95	96	
Wife's education:			
College	91	94	
High school, 4 yrs	85	92	
High school, 1-3 yrs	79	88	
Grade school	68	78	
Husband's income			
\$6,000 or more	93	95	
\$5,000-\$5,999	90	95	
\$4,000-\$4,999	85	92	
\$3,000-\$3,999	83	90	
Under \$3,000	71	84	

time of marriage. Many of the others begin after the first pregnancy. For example, among couples who had had three pregnancies, one-third had begun using contraception before the first, and a quarter had begun after the first but before the second. Of the remaining couples, 20 per cent began use after the second or third pregnancy, and 23 per cent had not yet begun.

Because so many couples begin to use contraception at marriage or soon thereafter, the proportion of Users rises rapidly in the early years of marriage and then remains relatively constant at a high level. Among Fecund couples, for example, the proportion who are Users rises from 69 per cent for those married fewer than 5 years to 88 per cent for those married 5 to 9 years. For longer durations, there is very little increase in this proportion.

How successful are couples in using contraception? About one-fourth of the Users reported one or more accidental conceptions--that is, conceptions occurring in spite of the use of contraception. The proportion rises rapidly as families grow; over half of the Users with four or more pregnancies have had accidental conceptions.

It must not be supposed, however, that all couples who have accidental pregnancies have more children than they want. For some couples, an accidental pregnancy may simply be one that occurred earlier than planned. For example, among those couples whose most recent pregnancy was accidental, two-thirds wanted the pregnancy at a later date.

Very few of the couples (only 13 per cent) had had pregnancies that were unwanted either when they occurred or later. From this point of view it appears that Americans are quite successful in avoiding too many pregnancies, even though a substantial minority have had accidental conceptions.

It should be noted that our estimates of accidental and unwanted pregnancies are probably minimal. This opinion is based on the assumption that some women were reluctant to admit that they had not used contraception successfully, and that others did not like to say that any of their children were unwanted. Nevertheless, the low proportions who did report accidental or unwanted conceptions suggest that most couples can and do avoid having more children than they want.

With respect to the methods of contraception, condom and diaphragm are the two most widely used. Forty-three percent of the couples using any method had tried condom and 36 per cent diaphragm. These are also the most effective methods, judging from the relatively small proportions of accidental conceptions reported for couples using only one or the other of these methods. The third most popular method is periodic continence (or rhythm), which had been used by one-third of the couples who tried any method. Douche ranked fourth, with 28 per cent reporting its use, and withdrawal ranked fifth with 15 per cent. These percentages add to more than 100 because many wives reported that more than one method had been used.

There has been much interest in how closely Catholics conform to the teachings of their Church regarding methods of contraception. The Church regards periodic continence and abstinence as acceptable (if used appropriately), but condemns other methods. Among all couples with Catholic wives, 70 per cent had conformed to the teachings of the Church either by not using any method of contraception or by limiting the method used to periodic continence or abstinence. Among users of contraception, 47 per cent of the couples with Catholic wives reported only methods approved by the Church. The proportion of Catholics who conform to Church doctrine is higher among the better educated. This may reflect their greater familiarity with the teachings of the Church.

<u>How families are planned</u>.--The couples covered in our study have followed a variety of family planning patterns. The specific patterns differ greatly in detail, but our main findings can be summarized by referring to three broad groups:

1. Completely Planned: these are couples who either used contraception continuously since marriage and had no pregnancies, or who deliberately planned <u>all</u> pregnancies by interrupting their use of contraception.

2. Partially Planned: these are couples who did <u>not</u> plan all of their pregnancies by interrupting contraception, but who did not have more pregnancies than they wanted.

3. Excess Fertility: these are couples who did not want their most recent pregnancy either when it occurred or later.

The couples who plan every pregnancy by discontinuing the use of contraception are a distinct minority (Table 3). Only one-fifth of the couples planned their families so carefully. Apparently, a substantial proportion of couples begin marriage with the intention of timing the birth of every child, but for one reason or another fail to do so as married life progresses. We find, for example, that almost one-third of those married less than five years can be classified as Completely Planned. The proportion for couples married 15 or more years, in contrast, is only onetenth. This difference may also be due in part to the fact that more younger couples know about and use the more effective methods of contraception.

There are very few couples who are so unsuccessful in their efforts to plan family growth that they have too many pregnancies. Only 13 per cent are classified as Excess Fertility. The proportion in this group is very low early in married life, but rises to over one-fifth for couples married 15 or more years.

Thus, the majority of couples are neither very careful nor very careless planners. Approximately two-thirds are included in the intermediate group--the Partially Planned. Some of these couples had accidental conceptions. Some had never used contraception but had not yet had too many pregnancies. Some had one or two pregnancies before beginning to use contraception and then began in order to avoid any more pregnancies or to time the occurrence of those that were wanted.

As would be expected, the distribution of couples between the three planning groups varies with family size (Table 3). Couples with few children are more likely to belong to the Completely Planned group than are other couples. The proportion who plan family growth very carefully declines rapidly as the number of children increases. Among couples with 6 or more children, there are none with Completely Planned fertility. At the other end of the planning scale, the TABLE 3. PER CENT DISTRIBUTION OF ALL COUPLES BY FERTILITY PLANNING STATUS, BY NUMBER OF LIVE BIRTHS

Number of births	Number of couples	Fertility planning status				
		Total	Completely Planned	Partially Planned	Excess Fertility	Not ascer- tained
Total	2,713	100	19	66	13	2
0	419 603	100 100	37 25	59 68	2	2 1
2	843	100	18	72	8	2
3	468	100	9	70	19	2
4	190	100	3	68	27	2
5	104	100	1	49	48	2
6 or more	86	100	0	41	56	3

proportion with Excess Fertility rises with family size. Among couples with 6 or more children, over half are in this group of unsuccessful planners.

Expected family size .-- It is clear from the widespread use of measures to control fertility that the major immediate determinants of average family size in the United States are the individual decisions of millions of couples about how many children to have. Although it is doubtful that many couples enter marriage with the intention of having a specific number of children and then have exactly this number, most couples have at least a rough idea about how many children they will have. This is particularly true of couples who, like most of those in our sample, have already had some experience with bearing and raising children. One of the main purposes of this study was to find out how many births such couples expect to have. It is hoped that this kind of information will provide a better basis for making

population projections than we have had previously. In replying to our questions regarding expected completed family size, many of the wives gave a range rather than a single number. The averages of their minimum and maximum replies are 2.7 and 3.3 births, respectively. Their most likely number of births averages 3.0. These numbers include an average of 2.1 births that had already occurred before the time of the interview in 1955.

We cannot yet judge how accurate these expectations are in terms of actual performance. We hope that it will be possible soon to begin to collect the kind of information we need for validation.

One striking fact that emerges from this study is the wide agreement on the desirability of relatively small families. Three-quarters of the wives expected to bear 2, 3, or 4 children. Only one-eighth expected fewer, and only one-eighth expected more. This convergence on the 2- to 4child family contrasts sharply with the wide distribution of families by size found among women who completed their childbearing a few decades ago. For example, the wives who were born in the early 1890's and who had most of their children between 1910 and 1940 had an average of 3.0 births, which is the same as the number expected by the wives in our sample. However, fewer than half of the older wives had only 2 to 4 children. The proportions who had no births or only one and who had 5 or more births, on the other hand, are higher than comparable proportions of our sample who expect these numbers of births. Obviously, the distribution of families by size is becoming narrower.

We find this convergence on the 2- to 4-child family in every major socioeconomic group. The average numbers of births expected by wives having different socioeconomic characteristics do vary, but not widely. The greatest difference we have found between the expectations of wives in major socioeconomic groups is the familiar urban-rural differential. Wives living on farms expect an average of 3.7 births, as compared with 2.8 for wives living in the 12 largest cities. The difference between these averages does not seem great when we consider the wide variations that are possible.

In general our data on expectations suggest that socioeconomic differences in family size will continue to narrow. We infer this tendency from the family size expectations of wives belonging to different age groups. For example, among the older wives (35 to 39 years old), the urban-rural differ-ences in expectations is fairly large: 4.2 births are expected by farm wives and 2.5 births by wives living in the 12 largest cities. But among the younger wives (18 to 24 years old) there is no difference between the expectations of the wives in these two residence categories. We find similar tendencies toward a narrowing of socioeconomic differences for wives classified by educational attainment, husband's income, and husband's occupation. It is quite apparent that Americans are continuing to become more alike with respect to family size.

The one characteristic for which we did not find a tendency toward convergence is wife's religion. The expectations of the Protestant wives do not vary significantly with age; on the average those in each age group expect about 2.9 births. Among Catholic wives, however, the younger wives expect more births than do the older wives (3.8 births for the 18-24-year olds and 3.1 for the 35-39-year olds). This may mean that the difference between Protestant and Catholic birth rates will increase. We do not think that this will happen, however. Instead, we think that some of the younger Catholic wives have somewhat exaggerated ideas about how many children they will bear. Our basis for this opinion is that many of the older Catholic wives, unlike older Protestant wives, reported that the number of children they wanted was relatively high at the time of marriage, but became lower as they had more experience with bearing and raising children. It is quite possible that the younger Catholic wives will revise their

childbearing expectations downward in the same manner.

Our data on fertility expectations indicate that average family size will continue to increase. Until recently there was a definite secular decline in family size in the United States. Wives born in the early 1870's had an average of 4.4 births. Average family size gradually declined to a low of 2.4 births for wives born between 1906 and 1910. Wives born more recently have already reversed this downward trend. Our data suggest that the average number of births per wife will increase to about 3.0 for women born in 1931-35. This is a medium projection based not only on the data from our study, but also on estimates of the fertility of two other groups: (1) white women who had not yet married by 1955 and were not represented in our sample, and (2) nonwhite women.

An increase in average family size from 2.4 to 3.0 births is not large: neither is an expected slight increase in the proportion married. But together these trends have important implications for the future growth of the United States. Our medium series of population projections show a decline in the rate of natural increase to about 10 or 11 per 1,000 in the next decade, and then an increase to about 13 per thousand. This rate of growth would give us over 300 million people by the end of this century and nearly 600 million by the middle of the next century. Clearly, the moderate-sized families Americans are now having are large enough to maintain fairly rapid population growth.

These long-range projections are cited simply to show what could happen if average family size increased to a specific level. They cannot be regarded as predictions, because if there is one fact that our study has underlined it is that fertility has become a highly volatile phenomenon. With family size largely under voluntary control, birth rates can fluctuate widely and rapidly. As far as forecasting short-range population growth is concerned, however, we think that the information we have obtained concerning expected family size will prove quite useful. Since the climate of opinion regarding family size can change, and probably will change, we think it is desirable to collect information on expectations periodically and use it to revise population projections from time to time. As we learn more about the basic variables affecting fertility and about the relationship between expected and actual family size, we shall be able to make better forecasts of population growth. It is hoped that the present study will prove to be an important step in this direction.

¹The publisher has granted permission to present this summary of material that will appear in the book.

²The words Fecund and Subfecund and certain other terms relating to fecundity and family planning are capitalized to indicate that they are used in a special sense in this study.

³Couples were classifed as Semifecund if (1) they failed to conceive during one or more long periods when contraception was not used (a long period is defined as three years for wives who have been pregnant and two years for wives who have not been pregnant) and (2) the average interval between births, if any had occurred, was three or more years. The time intervals used in these criteria are obviously arbitrary, but they are longer than the average length of time required to conceive for couples who do not have serious fecundity impairments.

⁴If wife married more than once marriage duration is measured from her first marriage.

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