

CAUSES OF THE DECLINE IN BIRTH RATES¹

by P. K. WHELPTON

THE discussion of births and birth rates in Iowa and the United States has brought out several important facts so far, namely that the number of births has been declining during recent years, that the birth rate has fallen steadily for nearly a century, that the downward pace of the decline was decreasing up to 1920 but rose during 1920-1930, that urban rates have been lower than rural rates, that foreign-born white women have been more fertile than native-born, that birth rates to women 20-24 and 25-29 are higher than those at other ages, and that the increase in the proportion of persons living under urban conditions and the decrease in the proportion of women 15-44 who are foreign-born or who are 20-29 have helped to bring about the large drop in the state and federal birth rate.

It is realized, however, that little has been said about certain fundamental causes of the decrease in human fertility. Has the decline of specific birth rates been due to biological changes affecting fecundity, to certain diseases (particularly venereal) becoming more widespread, to the nervous strain of city life becoming more intense and affecting more people, to changes in diet, to more persons being at sedentary occupations and fewer living an active outdoor life, to more pregnancies being terminated by induced abortions, or to more married couples practicing contraception? How important has each of these causes been in lowering specific birth rates? Unfortunately no data exist upon which to base an accurate and conclusive answer to such questions. An attempt will be made, however, to present the more important facts bearing on them, and to indicate the conclusions which these facts justify in the opinion of the writer.

¹ A reprint of part of a monograph, "Iowa's Population Prospect," by P. K. Whelpton. *Research Bulletin* No. 177, Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa, 1934. Reprinted by permission of the author and the publisher.

That the low birth rate of today is due in part to biological and physiological causes is certain. The experience of physicians shows that there are a number of infecund or sterile married couples in the population, that is couples who have tried to have children but to whom no live births have occurred.² Such couples should be distinguished from those who are fecund but infertile, that is who have had no children simply because they have practiced continence, abortion, or contraception. According to Reynolds and Macomber, two of the leading gynecologists of Boston, the percentage of married couples in Massachusetts who are infertile is between 10 and 13 per cent, and most infertile couples are infecund. This is based on their general impressions:

. . . First, that among the intelligent proportion of the community regulation of the size of the family by artificial prevention is so far general as to be the rule. Second, that the entire prevention of children by such means is very infrequent. We have seen but few married women who did not wish at least for one child, and but few married men who did not wish at least one son to carry on the name . . . we have submitted this opinion as derived from our own experience to a considerable number of gynecologists of wide experience, and have found them unanimous in their assent to it.³

In cases among their private practice infecundity was found to result from a variety of causes, such as arrested development, diseases, infections, lesions, injuries, insufficient exercise, faulty diet, and "the strain and mental worry of modern life."⁴ Nothing is said as to the relative importance of these causes, however.

² The terms infecund, sterile, and fertile are used in correspondence with definitions adopted by the Population Association of America. (See *Human Biology*, February, 1934, 6, No. 1, p. 238.)

³ Reynolds, Edward and Macomber, D.: *FERTILITY AND STERILITY IN HUMAN MARRIAGES*. Philadelphia and London, 1924, W. B. Saunders Company, p. 33.

⁴ *Ibid.*, p. 123.

Some of them also explain why certain couples who have had one child are unable to have a second.

Although the writer does not question the statements of Reynolds and Macomber with regard to causes of infecundity and methods of treating it, he thinks that their estimate of the proportion of infertile couples who are infecund is too high. This is based primarily on the belief that the couples with whom they came in contact were not typical of the population as a whole. These physicians have built up a reputation for helping sterile couples to become fertile. The childless couples coming to them would thus be those unable to bear children previously; couples childless from choice probably would go to a birth control clinic instead. It is likely, therefore, that childless couples who did not want children would be much less numerous among their patients than in the general population.

The most accurate information available on the proportion of infertile couples in a large part of the United States is found in a study of the Milbank Memorial Fund. The data they obtained should be typical of the native-white population of native parentage north of the Mason and Dixon line and distributed between farm owners and four broad social classes in cities. Out of a total of 13,558 families studied, in which the wife was 40 years of age or over in 1910 and hence the family was practically complete, 1,891 or 13.9 per cent were childless. This is slightly higher than the estimate of Reynolds and Macomber for Massachusetts fifteen years later. Unfortunately for the question at issue here, the Milbank study was based on census schedules which gave no clue as to whether childlessness resulted from choice or from infecundity.

That childlessness varies among social classes, and that it has been increasing in each social class are important facts shown by the Milbank study. Wives 60-64 in 1910 probably had completed their families twenty years earlier on an average than those 40-44

in 1910. During this twenty-year interval the proportion of couples who were childless increased in each of the five social classes studied. (See Table 1.) The change was small among farm owners, from 9.0 to 10.6 per cent, but was large among unskilled laborers, from 4.4 to 16.3 per cent. Because the sample is sufficiently large and representative to indicate the trends in a large part of the United States there seems little question but that an increase in infertility has caused some of the decrease in the birth rate previously described. But because infertility may be due to voluntary prevention of births as well as to biological or physiological causes, these data throw little light on the part played by the latter causes in lowering the birth rate.

Beyond question a second cause of the present low birth rate in Iowa and the United States is the practice of abortion. Only induced abortions will be considered here, that is the abortions

Table 1. Percentage of wives aged 40-44 and 60-64 in certain social classes who had borne specified number of children.¹

TOTAL CHILDREN BORN	PROFES- SIONAL		BUSINESS		SKILLED		UNSKILLED		FARM OWNER	
	60-64	40-44	60-64	40-44	60-64	40-44	60-64	40-44	60-64	40-44
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0	14.7	19.8	9.6	17.9	8.8	17.4	4.4	16.3	9.0	10.6
1	13.3	19.6	14.0	21.5	13.3	17.0	12.4	14.9	8.8	10.1
2	19.8	24.5	21.1	22.9	16.7	18.0	12.4	16.1	11.8	16.6
3	15.5	18.4	16.7	17.1	15.5	16.2	16.8	14.4	14.8	16.4
4	14.1	9.6	13.0	9.7	12.2	11.0	13.1	9.9	12.7	13.2
5	8.8	4.0	9.8	5.0	9.9	7.2	9.5	6.9	12.5	9.6
6	6.5	2.5	6.8	3.0	7.9	5.2	10.2	5.9	7.9	7.8
7	4.2	0.5	4.2	1.4	5.2	3.0	5.8	4.7	6.3	5.0
8	2.0	0.8	1.8	0.8	4.3	2.3	4.4	4.0	4.9	3.7
9	0.6	0.2	1.7	0.3	2.7	1.9	4.4	2.6	3.9	3.0
10 and over	0.6	0.2	1.2	0.5	3.6	0.7	6.6	4.3	7.5	4.1

¹ From Notestein, Frank W.: *The Decrease in Size of Families from 1890 to 1910*. The Milbank Memorial Fund *Quarterly Bulletin*, October, 1931, ix, No. 4, p. 184.

Based on a sample drawn from the 1910 census returns and containing 13,558 families in which the husband and wife were living together north of the Mason and Dixon Line in 1910, and "in which both the husband and wife were of native-white parentage and only once married. Within this group samples were obtained for each of the broad social classes in thirty-three cities having total populations of between 100,000 and 500,000 in 1910, and for the wives of farm owners in the rural parts of seventy-four counties adjacent to those cities."

brought on willfully as distinguished from spontaneous or involuntary miscarriages. As was the case with infecundity, the frequency of induced abortions in recent years can only be indicated roughly, and nothing shown about increases or decreases in past years. Current information about the number of abortions is meager and entirely inadequate; information for past decades is practically non-existent and cannot now be supplemented.

Estimates on the frequency of abortions in relation to total pregnancies are numerous in medical literature, and such estimates vary from one abortion in five pregnancies as the lowest estimate found. Supporting data on these estimates have not been found in medical or sociological literature.⁵

Physicians performing abortions in hospitals frequently enter them under related headings instead of as abortions, and keep no record at all of those they perform elsewhere. Needless to say self-induced abortions are not recorded, although some indication of their frequency can be had from the large number of hospital records of patients suffering from sepsis as a result of such action.⁶

Probably the best sources of information regarding the frequency of induced abortions in certain groups of people are the records of birth control clinics. A recent study based on the records of 10,000 women who went to the Birth Control Clinical Research Bureau in New York City from 1925 to 1929 shows that prior to their first clinic visit 38,985 pregnancies had occurred to these women, with 7,677 or 19.7 per cent ending in induced abortions.⁷ This excludes 340 abortions which were deemed necessary to save the mother's life. Sixty per cent of the 7,677 abortions were performed by a physician, 15 per cent by a midwife, and 25 per cent were self-induced.

⁵ Kopp, Marie E.: *BIRTH CONTROL IN PRACTICE*. New York, Robert M. McBride and Company, 1934, p. 121.

⁶ *Ibid.*, p. 122.

⁷ *Ibid.*, pp. 123-124.

... the physician's help was sought to terminate pregnancies in *three per cent of the total first pregnancies*, in the second pregnancies *two and one-half times as often as in the first* (7.7 per cent), in the third pregnancies *four times as often as in the first pregnancies* (13 per cent) and in the fourth pregnancies *five times as often as in the first* (16.2 per cent).

In the first pregnancies the midwife's help was sought in one-half of one per cent, while in the second pregnancies she was the helping agent *three times as often as in the first*, in the third *five and one-half times as often*, and in the fourth *more than eight times as often as in the first*.

Somewhat less than half the self-induced abortions occurred in the first four pregnancies. In the later pregnancies the group of self-induced abortions is large if compared with the terminations for which the patient had to make financial sacrifices.⁸

Summing up the New York study, less than 4 per cent of first pregnancies were terminated by induced abortion, but about 20 per cent of third pregnancies and nearly 30 per cent of fourth pregnancies were so ended.

This group is not typical of all women in the United States, for it includes only those living in or about New York City, wishing to limit the size of their families, and going to a birth control clinic for contraceptive information. It is likely that in the population as a whole the inducing of abortions is not as common as in this group. The probability is, however, that the situation found among these New York women could be duplicated closely in certain parts of the population of Iowa and other states, particularly in the larger cities. Because abortion was so common in the New York group the chances are that it is an important cause of the present low birth rate in the United States as a whole. But the expectation is that it will decline in importance because of the influence of birth control clinics.

A third and probably the most important cause of the present

⁸ *Ibid.*, pp. 124-125.

low birth rate and of the rapid decline in past decades is the practice of contraception.⁹ This has long been the belief of various students of population. Thirty years ago J. S. Billings wrote regarding causes of the lessening birth rate: "It is probable that the most important factor . . . is the deliberate and voluntary avoidance or prevention of childbearing on the part of a steadily increasing number of married people who not only prefer to have but few children, but who know how to obtain their wish."¹⁰

Similar statements have been made by others based on their judgment and experience, but it is only recently that factual data have become available. These are still inadequate for the United States, but additions to the fund of knowledge are continually being made. Katherine B. Davis found in her study, *FACTORS IN THE SEX LIFE OF TWENTY-TWO HUNDRED WOMEN*, that 730 of each 1,000 married women returning questionnaires stated they practiced contraception.¹¹ In general these women were "of good standing in the community, with no known physical, mental, or moral handicap, of sufficient intelligence and education to understand and answer in writing a rather exhaustive set of questions as to sex experience,"¹² and well distributed over the United States. But since only 1,073 filled-in questionnaires were received from 10,000 women circularized, those replying may not be typical of the entire group. No statements were made on the questionnaires by these women as to the extent to which their practice of contraception had been successful in preventing pregnancies.

Information on the practice of contraception and success attained has recently been gathered by the Milbank Memorial

⁹ In this discussion no attempt will be made to differentiate between the various methods of contraception—continence, the "safe period," mechanical appliances, or chemical preparation—but simply to consider all methods combined.

¹⁰ Billings, John S.: *The Diminishing Birth Rate in the United States*. *Forum*, June, 1893, 15, p. 475.

¹¹ Davis, Katherine Bement: *FACTORS IN THE SEX LIFE OF TWENTY-TWO HUNDRED WOMEN*. New York and London, Harper and Bros., 1929, p. 14.

¹² *Ibid.*, p. xi.

Fund from [a selected group of] women coming to the Birth Control Clinical Research Bureau in New York City.

Two-thirds of the women are Jewish, one-sixth Catholic, and only one-tenth Protestant. Almost all of them have lived in New York City since their marriage, but more than half are foreign-born and only one-sixteenth native-born of native parents. They represent for the most part middle- and working-class families whose annual incomes in 1929 ranged from \$400 to \$20,000, with a median income of \$2,300. In 1932 the median income had dropped to \$1,200, about a fifth of the families were destitute or supported by organized relief, and the highest income was less than \$6,000.¹³

These women may not be typical of their religious and economic groups because of the fact that they were sufficiently interested in limiting the size of their families to attend the clinic. This in turn may indicate that they were above average in ease of becoming pregnant, or below average in their knowledge of effective methods of preventing conceptions. Some information about contraception was widespread in this group, however, for

before they attended the clinic 95 per cent of these women had made some effort to limit their families by the practice of what they believed to be contraception. Forty per cent of the families in the group used contraceptives immediately after marriage, and an additional 40 per cent started their use at some time before the beginning of the second pregnancy.¹⁴

Comparing the frequency of pregnancies among women who have been practicing contraception with their frequency among those who had not done so indicates that the former group lowered the chance of becoming pregnant by 73.6 per cent.¹⁵ Such a

¹³ Stix, Regine K. and Notestein, Frank W.: Effectiveness of Birth Control. *The Milbank Memorial Fund Quarterly*, January, 1934, xii, No. 1, pp. 58-59.

¹⁴ *Ibid.*, p. 59.

¹⁵ *Ibid.*, p. 67.

decrease is remarkable in view of the fact that these families presumably had received no technical information about contraception prior to the visit to the clinic. Most of them were using methods that are generally assumed to be matters of rather common knowledge in the population, and which may be widely practiced and quite efficacious among other groups of families. After these women had received instruction at the clinic it is probable that the risk of pregnancy among those practicing the clinic methods was lowered more than 73.6 per cent, for the experience of other clinics indicates that 90 per cent effectiveness in reducing births is common among women who have learned the clinic technique and who follow it carefully.¹⁶ The extent to which contraceptive methods can reduce the birth rate is thus seen to be enormous. . . .

The indications are clear that infecundity from biological or physiological causes, the ending of pregnancy by induced abortion, and the practice of contraception have all played a part in reducing the birth rate in Iowa and the United States. But because definite facts are inadequate concerning each, is there any means of judging their comparative importance? An examination of certain trends and differentials in birth rates seems to the writer to indicate that infecundity—the inability of married couples to have children—has been much less important than voluntary causes. For one thing, the large decreases in specific birth rates at the older ages than the younger from 1920 to 1930 are what would be expected to result from voluntary control. Among the great mass of the working classes, older married couples with all the children they could care for would almost certainly make more effort to prevent additional conceptions than younger couples still childless or having only one or two children. This might not be so true during years like 1931 to 1934 when many young married men could not find employment and were sup-

¹⁶ Kopp: *Op. cit.*, p. 176.

ported by their wives or parents, but it should hold true for 1920-1930 and for other long periods.

Considering another factor, the differentials between urban and rural specific birth rates seem explainable to an important extent by voluntary action. Children have been less of an economic burden on the farm than in the city, particularly because much of the family food is raised at home instead of being bought for cash at the store, and because there is productive work at which children can help after school hours and during vacations.

From the standpoint of personal freedom, farming is an exacting occupation because livestock require care twice a day or oftener. Farm women usually look after the chickens and often help with other stock; hence if they feel tied down, it may be because of these duties rather than because of children. With city women, on the other hand, the husband's business is usually at some distance from the residence, so that there is only house-keeping to do at home. This is easier than in the country because nearby grocery or delicatessen stores simplify cooking, and restaurants may not be far distant. Home duties in childless families, therefore, are much less confining in the city than in the country. Partly on this account many city women seek full-time occupations outside the home and independent of their husband's business, which gives an additional reason for postponing child-bearing temporarily and sometimes permanently. This situation has no counterpart on the farm. Again, social or recreational life in the country has been organized around families to a much greater extent than in cities, the tendency in the latter being to individualize and commercialize it. For these reasons there may be less desire to restrict the size of family among farmers than among city dwellers, less use of abortion or of contraceptive measures, and hence a higher birth rate. Because contraception is so much simpler and safer than abortion, the conclusion seems justified that it has been the more important method used.

It is probable, too, that the spread of knowledge regarding contraception has been slower in the country than in the city. Almost all of the 121 birth control clinics now operating are located in cities. Except for the work of these clinics most of the spread of birth control information has been by word of mouth, partly because of federal and state laws, and partly because of social customs. Under these conditions contraceptive knowledge no doubt has been passed along most rapidly in places where large numbers of people come together in close daily contact. Factories and stores are ideal for this purpose. If the employees are women rather than men, contraceptive information probably spreads more rapidly because preventing an excessive number of births may ease a woman's life much more than that of her husband.

All this does not mean that there are no differences in diet, in type of work, in amount of time spent outdoors, and in the practice of abortion which may be partially responsible for higher birth rates in rural than in urban communities; it simply means, however, that these factors are less important than differences in birth control. Neither is it implied that the rural-urban birth rate differential may not disappear in time if factory methods are applied to farming or if country-city ties are strengthened in other ways. The movement back to the land that has gone on during the depression may hasten the disappearance of this differential.¹⁷

In both city and country it seems reasonable that birth control would be practiced first among the so-called upper classes, made up chiefly of professional and business men (as distinguished from unskilled or skilled workers) in the city and farm owners (as distinguished from renters or laborers) in the country. Members of the upper classes have usually progressed further in their education; hence they would know more about the various means

¹⁷ Whelpton, P. K.: The Extent, Character and Future of the New Landward Movement. *Journal of Farm Economics*, January, 1933, 15, No. 1, pp. 57-66.

of preventing conception.¹⁸ Many of them have acquired upper-class standing as a result of their own efforts in business or the professions, their parents having been unskilled workers with little property. Their success in this matter may have been due in part to the deliberate avoidance of many children, which lessens family cares and expenses and allows more energy to be devoted to economic and social striving. The results of certain studies of the Milbank Memorial Fund are in accord with this hypothesis, for they show a marked relation between fertility and social class in the native-white population of 1910. In the urban sample studied, the standardized cumulative birth rate by classes was 129 for professional, 140 for business, 179 for skilled workers, and 223 for unskilled workers. In the rural sample the rate was 247 for farm owners, 275 for farm renters, and 299 for farm laborers.¹⁹ When the age of the wife at marriage was from 14 to 19, the inverse relation between birth rate and social class was even more marked; but when marriage took place from the age 25 to 29 the birth rate differed little among the urban classes, although the inverse relation was apparent to some extent in the farm groups.²⁰ In discussing this matter Notestein states:

The cause of this shift from an inverse to a direct association between fertility and social status as marriage age advances cannot be determined from our data. Probably a number of factors were involved. As pointed out in the English Census Report, 'Fertility of Marriage,' the fact that the upper-class birth rates were relatively high for women

¹⁸ In the Davis study the percentage of women employing contraceptive methods was 76.48 among university and college graduates, 71.29 among college undergraduates and high school and normal school graduates, 64.51 among less than high school, and 63.63 among the private school or tutor groups. Katherine B. Davis: *Loc. cit.*, p. 14.

¹⁹ Sydenstricker, Edgar, and Notestein, Frank W.: Differential Fertility According to Social Class. *Journal of the American Statistical Association*, March, 1930, xxv, New Series 169, pp. 9-32.

²⁰ Notestein, Frank W.: The Relation of Social Status to the Fertility of Native-Born Married Women in the United States. G.H.L.F. Pitt-Rivers, editor, *PROBLEMS OF POPULATION*. London, George Allen and Unwin, Ltd., 1932.

whose late marriages offered slight inducement to family limitation, and relatively low for those whose early and perhaps impecunious marriages made family limitation most desirable, suggests that for early marriages birth is increasingly subject to voluntary control as social status rises.

The decrease in standardized birth rates found in going from unskilled laborers to professional people results from fewer large families rather than from more childless families. The proportion of urban wives aged 40 to 49 in 1910 who had borne no children varied from 16.3 per cent for unskilled to 19.8 per cent for professional, whereas the proportion who had borne five or more children varied from 28.4 per cent for unskilled to 8.2 per cent for professional.²¹ Complete infertility, whether involuntary or otherwise, thus appears to be of considerably less importance than the factors holding the number of births per wife below five with contraception probably much more important than abortion.

Differences in age at marriage probably explain to a small extent why the proportion of large families decreases with a rise in social status, because the modal age at marriage of brides under 40, who were married between 1900 and 1905, increased from 18.5 for unskilled laborers to 23.5 for professional persons.²² But most of the decrease in the proportion of large families as social status rises remains to be accounted for by causes of infecundity after one or more births have occurred, by the practice of abortion or by the use of contraceptive methods. For reasons already indicated, the last named seems the most important.

Since writing the above, results have become available from a study just completed which so strongly support the argument that birth control is the primary means by which the decrease in the birth rate has been brought about as to make it almost incon-

²¹ Notestein, Frank W.: The Decrease in Size of Families from 1890 to 1910. The Milbank Memorial Fund *Quarterly Bulletin*, October, 1931. ix, No. 4, pp. 181-188.

²² Notestein, Frank W.: The Relation of Social Status to the Fertility of Native-Born Married Women in the United States. *Op. cit.*

trovertible. Under the direction of Dr. Raymond Pearl of The Johns Hopkins University, information regarding size of family and practice of birth control has been obtained from 4,945 married women in thirteen states. These women were not selected because of their interest in contraception; in fact, hardly any of them had ever been to a birth control clinic.

They are a fair sample of run-of-mine urban dwellers in religion, occupation, wealth, and education. Fifty-nine per cent of the whites and 66 per cent of the Negroes never got more than elementary schooling. Thirty-two per cent of the whites and 27 per cent of the Negroes attended high school, while only 6 per cent of the whites and 3 per cent of the Negroes went to college or university. The white women studied had been married 5.7 years, and the Negro women 6.4 years, on the average.

. . . among the well-to-do and rich white women over 78 per cent had practiced birth control. . . . (In this group) the average birth rate was lowered some 73 per cent below its natural biological level. . . . Among the very poor and poor classes of whites (who make up a large proportion of the whole population) only a few more than one-tenth of the women practiced birth control really intelligently. . . . (These women) succeeded in lowering their average birth rate below the natural biological level by 57 per cent.

If birth control were not practised the birth rate would be approximately the same in various social levels and for white and colored races which indicates that the innate natural fertility (fecundity) of married couples is probably substantially similar in all economic classes, and in the white and colored races. . . . Apparent differential fertility observed between social and economic classes, and between the races, appears on the basis of the more refined and accurate computations of this investigation to be due almost wholly to those artificial alterations of natural innate biological fertility which are collectively called birth control, at least in the sample of American women so far studied.²³

²³ Milbank Memorial Fund press release, March 14, 1934.

If it is true that the increased practice of contraception has been the means by which much of the decline in the birth rate has been brought about, there still remains the important question as to why contraceptive methods are used to a greater extent now than formerly. A number of hypotheses have been advanced to answer this question, among them the emancipation of women, the lessening influence of the church, the change in the attitude toward sex relations (the abandonment of the double standard), the desire for a higher economic and social standard of living, and the influence of city life. No doubt all of these and others as well have had some influence, but the exact importance of each is undeterminable at the present time.²⁴

²⁴ For a discussion of these factors, see the following: Ungern-Sternberg, Roderich von: *The Causes of the Decline in Birth-Rate within the European Sphere of Civilization*. Cold Spring Harbor, Eugenics Research Association (Monograph Series IV), August, 1931. Kulka, Ernst: *The Causes of Declining Birth-Rate*. Same series, No. V. Nearing, Nellie S.: *Education and Fecundity*. American Statistical Association. Publications, June, 1914, 14 New Series No. 106, pp. 156-174. Englemann, George J.: *Education Not the Cause of Race Decline*. *Popular Science Monthly*, June, 1903, 63, pp. 172-184. Thompson, Warren S.: *POPULATION PROBLEMS*. New York, McGraw-Hill Book Company, Inc., 1930, Chap. VIII.