

# CHANGES SINCE 1900 IN THE FERTILITY OF NATIVE WHITE WIVES

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THE nineteenth century has been called the statistical century and also the century of democracy. The two developments are interrelated, for democracy is a form of government through public opinion, and public opinion is ascertained by elections which are essentially statistical processes, "counting heads so as to save breaking them."

No statistical development of the last half century has been more important than the growth in methods of sampling. The introduction of these methods has widened the field of statistics almost without limit. Wage statistics, unemployment statistics, and cost of living statistics are regularly thus obtained. As not all persons entitled to vote do so, an election also is a sampling process.

The sampling method has great advantages and also great dangers. It can be used in many fields where the method of complete enumeration is impossible; where the two overlap, the sampling method is far cheaper than the census method; the former makes it possible to isolate a problem as we cannot in a census or in politics. To isolate a problem is an essential characteristic of modern science to which many of its triumphs have been due. While statistical methods have been developing with steadily growing success, the progress of democracy has been checked and many of its advocates are discouraged. Is not this due in part to the failure of democracy to adopt the later statistical methods?

In my judgment, the largest contribution of the Division

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of Research of the Milbank Memorial Fund is that it is using the sampling method and the method of isolating a problem with the care and the precautions characteristic of modern science. By thus avoiding or reducing the dangers inherent in the sampling method, it is contributing to the elucidation of American population problems.

But one further precaution should be taken. The sampling method and the Government's method of complete enumeration by a census or by registration are as intimately related in statistical procedure as the right and left hands are in manual labor. Both the trustworthiness and the significance of the results obtained by either are heightened when compared with those of the other. This conviction, a result of long experience mainly with governmental work, has been brought home to me by reading Mr. Sydenstricker's paper in the January issue of the Milbank Memorial Fund's *Quarterly Bulletin*.<sup>2</sup> The following comments on that paper aim primarily to show how in a specific case the results of complete enumeration gain definiteness and significance from being set as a groundwork behind results from the sampling method, and how the latter also gain by being placed against figures from a complete enumeration.

In the study I have mentioned, the fertility records in a population group of about 5,000 living in five rural townships in Cattaraugus County, New York, are analyzed. This is a sample population probably typical of that in many adjacent rural districts. From this group 1,036 fertility records were obtained, including one from every native woman who had been married only once and had not separated from her husband before her forty-fifth birthday. Near the end of the

<sup>2</sup>Sydenstricker, Edgar: A Study of the Fertility of Native White Women in a Rural Area of Western New York. Milbank Memorial Fund *Quarterly Bulletin*, January, 1932, x, pp. 17-32.

paper these records for 1929-1930 are compared with corresponding census records of the native-white farmers' wives living on Cattaraugus County farms in 1900 and 1910. The conclusion is drawn that there had been no significant downward trend in the fertility of such wives, and the suggestion made that the fertility of the stock under a stable environment had not greatly changed.

When I first read this conclusion and suggestion they seemed to me improbable. To show the frame of mind in which I approached them, may I recall that the trend of fertility on both sides of the Atlantic has long been downward, that the rate of decrease has varied widely but that there is little evidence of a stationary or increasing fertility in any considerable area or any large class of population, and that the downward trend has been especially marked in the native-American stock of the northeastern states? The presumption against finding an exception among the farmers of Cattaraugus County I thought was strong, the group of farmers' wives was small, and the question whether records obtained in about one-seventh of the townships of Cattaraugus County were comparable with sample census records of farmers' wives obtained twenty or thirty years earlier throughout the County had not been examined.

A few words are needed about the relation between the method of sampling and the method of complete enumeration. The two start into a problem from opposite ends and proceed towards each other in the effort to see how near they can get. If I had sought to learn what light census data can throw upon changes in the fertility of farmers' wives in Cattaraugus County since 1900, I would have started with the trend of fertility in the United States first among all women and then among white women. The next step would have been to study the trend in New York State.

The best available measure of fertility for the United States and for New York State during the present century is the proportion of children under five years of age to married women of childbearing age at successive censuses. Other evidence shows that the fertility of women in the United States was at its height in 1810 and has been decreasing for 120 years with the exception of one period between 1850 and 1860.<sup>3</sup> The fertility of white women in New York State has been similarly measured for a century, 1830-1930. In 1830 there were 700 white children and in 1930, 278 to 1,000 white women 15-49 years of age; in other words, the fertility of white women in New York has fallen by three-fifths in the century just ended.

But the period covered by Mr. Sydenstricker's figures is limited to the last thirty years during which in two respects the census material is better. Beginning with 1850 figures are available for native whites,<sup>4</sup> and beginning with 1890 for married native whites. In New York State the fertility of native-white married women 15 to 44 years of age, as thus roughly measured, fell between 1900 and 1930 by about 20 per cent.

The paper I am reviewing suggests that the birth rate may have remained about stationary in rural communities with a stable environment. For the United States, 1920-1930, the only period for which the evidence is obtainable, there seems to have been no difference between the fall of the birth rate in urban and in rural districts. The number of native-white children to 1,000 white women 15-44 years of age fell in

<sup>3</sup>Willcox, Walter F.: *The Change in the Proportion of Children in the United States and in the Birth Rate in France during the Nineteenth Century*. *Publications of the American Statistical Association*, New Series, March, 1911, xii, No. 93, pp. 490-499.

<sup>4</sup>Found by computing the number of native-white children born of native parents and under 5 years of age to 1,000 native-white women 15-44 years of age.

American cities by 75 per 1,000 and in the rural districts by 76 per 1,000. But in New York State there was a marked difference. In New York cities the proportion of children fell by 90 per 1,000, in the rural districts by only 39 per 1,000. On dividing the population of the rural districts into the population on farms and the population off farms, the fall in the proportion of children off the farms was 43 per 1,000 and on the farms only 17 per 1,000. Thus, while the proportion of white children in the rural districts of the United States fell nearly 8 per cent, that proportion on the farms of New York State fell less than 2 per cent.

We are now almost as near to Mr. Sydenstricker's problem as the census figures will carry us, and thus far no exception has been found to the uniform rule that the birth rate fell between 1900 and 1930. These facts led me to look at his results with skepticism, not merely in its etymological meaning of a suspense of judgment, but also in its current meaning.

Before adopting that attitude, however, there is one more step which the census figures permit us to take, a step which might never have been taken but for the incentive furnished by the surprising results before us. Mr. Sydenstricker has studied a rural population, and the tendency in rural fertility may differ from the average. Unfortunately, as we have seen, there is no direct measure of rural fertility in the United States or in New York State for longer than the last decade.

If the trend of rural fertility, however, 1900-1930, differs from the trend of urban fertility, that fact might be reflected in a difference in trend between the states predominantly rural and the states predominantly urban. To test this the trend among the native-white married women in Mississippi was examined, that state being chosen because Mississippi has a proportion of its population (74 per cent) living outside of incorporated places larger than that of any other state.

Table 1. Children under five years of age of native-white parents per 1,000 native-white married women 15-44 years of age in 1900 and 1930, with the change between those dates, for each state and the United States.

Among white women in Mississippi as in the United States and in New York the trend of fertility between 1900 and 1930 was downward and at a rate much above the average.

Not satisfied with that result, I arranged the states according to their proportion of rural population or population living outside of incorporated

Area	Children under 5 Years of Age Per 1,000 Married Women 15-44 Years of Age		Change between 1900 and 1930
	1900	1930	
<i>Continental United States</i>	790	596	- 194
North Dakota	631	720	+ 89
New Hampshire	502	577	+ 75
Vermont	605	651	+ 46
Maine	602	642	+ 40
Massachusetts	492	523	+ 31
Rhode Island	485	508	+ 23
Michigan	545	567	+ 22
Minnesota	638	630	- 8
Montana	598	572	- 26
South Dakota	714	683	- 31
Colorado	597	557	- 40
Wisconsin	674	629	- 45
Connecticut	519	473	- 46
New Mexico	911	800	- 111
New York	553	441	- 112
Nebraska	749	628	- 121
Iowa	751	619	- 132
Ohio	692	554	- 138
Nevada	608	467	- 141
New Jersey	599	454	- 145
California	517	372	- 145
Utah	957	806	- 151
Indiana	746	593	- 153
Pennsylvania	760	598	- 162
Arizona	711	543	- 168
Washington	618	449	- 169
Idaho	870	699	- 171
Wyoming	761	586	- 175
Kansas	794	616	- 178
Illinois	676	493	- 183
Dist. of Columbia	575	388	- 187
Delaware	728	522	- 206
Kentucky	1,020	807	- 213
Oregon	669	452	- 217
Maryland	819	585	- 234
Missouri	830	568	- 262
West Virginia	1,115	840	- 275
Tennessee	1,065	759	- 306
Oklahoma	1,010	683	- 327
South Carolina	1,145	811	- 334
Arkansas	1,103	767	- 336
Virginia	1,099	762	- 337
Alabama	1,161	815	- 346
North Carolina	1,220	866	- 354
Georgia	1,122	746	- 376
Florida	1,009	617	- 392
Mississippi	1,189	791	- 398
Louisiana	1,140	722	- 418
Texas	1,066	612	- 454

places having at least 2,500 inhabitants. For present purposes that is a better definition of rural than throwing all incorporated places into the urban class, because the 5,000 people studied in Cattaraugus County included one village of about 1,000 inhabitants. When the new definition of rural population was adopted Mississippi took second place after North Dakota.

Much to my surprise, the trend of fertility of native-white wives in North Dakota since 1900 was found to be upward. With that as a clue, the trend in the other states was examined, whereupon it appeared that in Michigan and in five New England states, all but Connecticut, as well as in North Dakota, the trend of fertility of native-white wives of child-bearing age since 1900 has been upward. (Table 1.) There are thus seven states near the northern border of the country in which the fertility of native-white women has increased counter to the general trend.

The ratios show, also, that the country is roughly divisible into belts by east and west lines, as illustrated by Figure 1. The most rapid decrease in the fertility of native-white wives between 1900 and 1930 has been in the states of the Far South. In Florida, Mississippi, Louisiana, and Texas it was more than double the average. North of these states lies a group including all the other divisions south of Mason and Dixon's line and the Ohio River, except the District of Columbia, and including also Missouri and Oklahoma, in which the decrease has been faster than the average but not twice as fast. Washington is the only state at a distance from this group of which the same is true. In all states of the North and West except Washington and the seven in which there was an increase, the decrease has been less rapid than the average.

Figure 2 shows that the states in which the fertility of native-white wives either increased or decreased more slowly

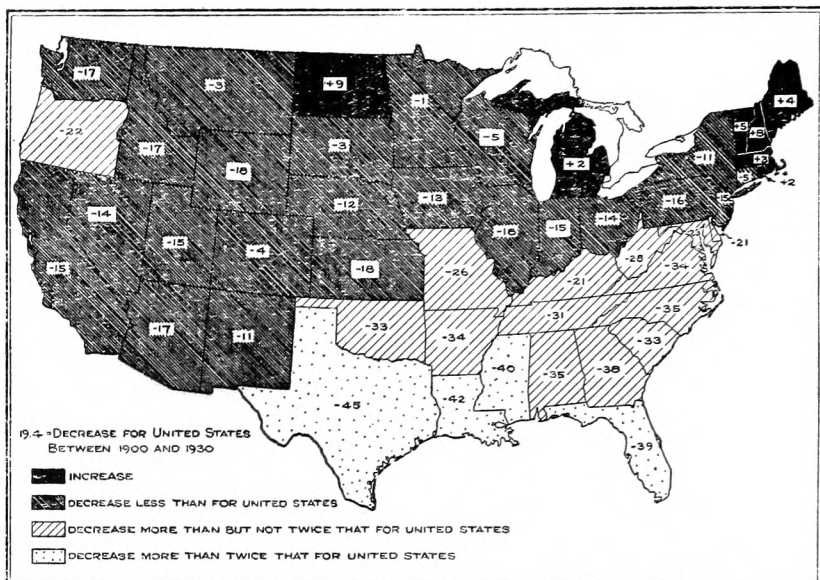


Fig. 1. Changes between 1900 and 1930 in the number of children under 5 years of age of native-white parents per 100 native-white married women from 15 to 44 years of age.

than the country's average, were almost the same as the states in which in 1900 more than one-tenth of the population was of foreign birth. If we assume that the fertility of immigrant stocks falls slowly towards the rate prevalent among the older native stock, and that in consequence, where immigrants, and especially those with a high fertility rate, make a large proportion of the population, their American-born children have recruited the class of native-white women since 1900 in numbers large enough to check or overcome the tendency to a falling fertility among the older native-American stock, we might explain in that way the slower fall, or in the seven states named the actual increase, of the fertility of native whites.

To test this hypothesis let us inquire how the main immigrant stocks rank in fertility and where in the United States the most fertile stocks are settled. This problem was



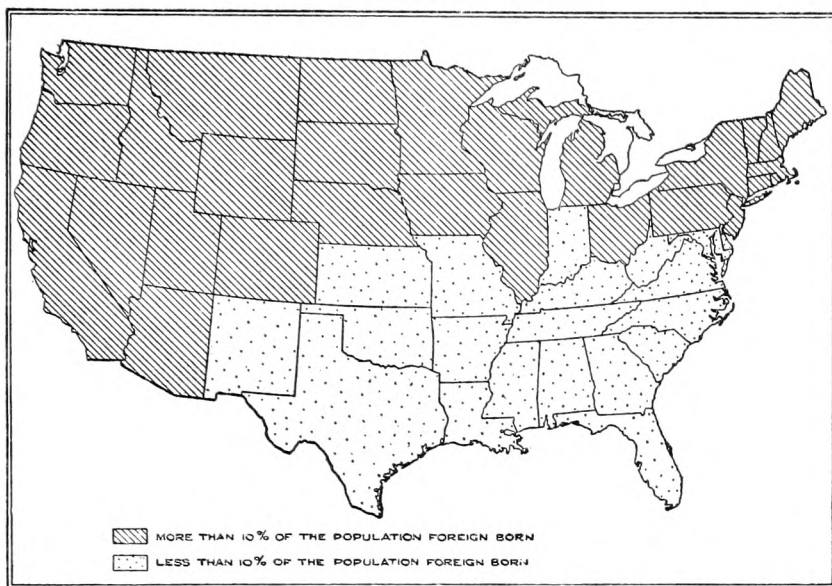


Fig. 2. States in which more than 10 per cent of the population was foreign born in 1900.

attacked a generation ago by Kuczynski, with the help of Massachusetts figures.<sup>5</sup> In extending his results to cover the United States, women born in Prince Edward Island, Nova Scotia, or New Brunswick and bearing children in Massachusetts in 1887-1889 have been divided between Canada French and Canada English, the latter phrase including in Federal census usage all persons born in Canada and not speaking French. If we assume that immigration from these three provinces to Massachusetts came in equal proportion from the Canada French and the Canada English population, and that the fertility of the two stocks was in the same proportion as the fertility of other women in Massachusetts from English Canada and French Canada, Kuczynski's figure for the birth rate of French Canadian women is raised from

<sup>5</sup>Kuczynski, R. R.: The Fecundity of the Native and Foreign Born Population in Massachusetts. *The Quarterly Journal of Economics*, November, 1901, xvi, pp. 1-36 and February, 1902, xvi, pp. 141-186.

152 to 155, and for English Canadian women from 85 to 95.

The birth rate in Massachusetts in 1887-1889 of the seven immigrant stocks which he was able to study then stands as shown in the accompanying table.

	Canada French	155
	Sweden	126
	Germany	124
	Canada English	95
	Scotland	93
	England	92
	Ireland	77

These seven stocks included in 1900 more than two-thirds of the foreign-born population of the United States.

The next question is about the representation of these stocks severally in 1900 in those states in which at least 10 per cent of the population was of foreign birth. For this purpose an index of fertility is needed. It may be prepared by treating the fertility of these stocks in the entire United States as 100. For example, in Maine they were distributed as shown in the accompanying table and together made up 93.7 per cent of the total foreign-born in that State. If each of these per cents is multiplied by the fertility rate

<i>Country of Birth</i>	<i>Per Cent of All Foreign-Born</i>
Canada French	33.1
Sweden	2.1
Germany	1.5
Canada English	38.7
Scotland	2.3
England	5.1
Ireland	<u>10.9</u>
<i>Total</i>	93.7

of that stock, the sum of the products, 107,895, exceeds the sum of the similar products for Continental United States by 48 per cent; Maine's index of fertility, therefore, is 148.

A similar index of fertility for each state in which at least 10 per cent of the population in 1900 was foreign-born is shown in Table 2, the names of the seven states for whose rise of fertility an explanation is sought being italicized.

If it were not for North Dakota's position near the bottom of the list, the hypothesis under examination would be supported by the evidence. In that State, Norwegians were and are much more numerous than any other foreign-born stock. As the birth rate of Norwegians in Norway and of Danes in

AREA	FER- TILITY INDEX	AREA	FER- TILITY INDEX	AREA	FER- TILITY INDEX
<i>New Hampshire</i>	163	Iowa	114	Utah	88
<i>Maine</i>	148	Ohio	112	Wyoming	86
<i>Vermont</i>	140	Nebraska	111	Oregon	84
<i>Michigan</i>	137	UNITED STATES	100	Pennsylvania	84
<i>(Cattaraugus Co.)</i>	130	Colorado	99	California	80
<i>Rhode Island</i>	125	Montana	98	South Dakota	74
<i>(North Dakota)</i>	125	Washington	97	<i>North Dakota</i>	73
<i>Massachusetts</i>	118	New York	91	Nevada	73
<i>Illinois</i>	116	Idaho	88	Arizona	34

Table 2. Fertility index for each area in which at least 10 per cent of the population was foreign-born, 1900. (Areas in which fertility apparently rose between 1900 and 1930 are shown in italics.)

Denmark during the latter part of the last century was a little higher than that of Swedes in Sweden, I have assumed that the birth rate of Norwegians and Danes in North Dakota was the same as the birth rate of Swedes in Massachusetts. On that assumption, the index of fertility of the foreign-born in North Dakota is raised from 73 to 125, and the first seven states in the preceding list agree with the seven states in which the fertility of native-white women increased from 1900 to 1930 contrary to the general trend.

How far do these suggestions for explaining the increase in the fertility of native-white women throw light upon the surprising conditions in Cattaraugus County which started the present inquiry? More than 10 per cent of its population in 1900 was foreign-born, but few were of Canadian birth and of them nearly all were Canadian English, with a fertility less than two-thirds of that of the Canadian French. Persons of German birth, however, were two-fifths of all the foreign-born in the County and occupied much the same position as Norwegians did in North Dakota. As a result of their large number and their high birth rate, the Cattaraugus County fertility index was 130, or 43 per cent above the rate of New

York State and well within the group of seven states in the preceding list.

All this evidence seems to show that an important if not indeed the main cause of the rising fertility of native-white women since 1900 both in the seven states along the Canadian frontier and in Cattaraugus County, if it has risen there as Mr. Sydenstricker's study suggests, has been the slow permeation of the class of native-white women within the present century by American-born daughters of foreigners carrying some part of the high fertility of their stock and thus counterbalancing the tendency to a fall in the birth rate of native-white women which has been traced in all other parts of the country.