

## WHERE WE STAND IN THE URBAN-RURAL AND FARM RESIDENCE CONCEPTS

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Census concepts rarely spring fully armed from the deliberations of the census staff, like Athena from the brow of Zeus. Rather they begin with a relatively simple and common sense notion which evolves in response in the conflicting needs of the users of census statistics and the difficulties of application, into a reasonably complicated definition which all too frequently represents an unhappy compromise.

The concept of urban population began quite simply as the aggregate population of cities. In the latter part of the 19th Century and the early 20th Century there were differences from census to census as to size of cities included in the urban population. In the Statistical Atlas of 1874 the urban population was defined as the population of places of 8,000 or more and in 1880 this limit was lowered by implication to 4,000. In 1910 a population of 2,500 was taken as the lower limit for reasons which have been lost to posterity, and this limit has persisted without serious question to the present. Between 1920 and 1930, data from all previous censuses were consolidated on the basis of this limit, thus producing a time series on urban population going back to 1790.

More explicitly, the 1910 definition specified the urban population as the population of incorporated places of 2,500 or more and of a few additional areas in which the standard definition did not appear to apply but which were nevertheless considered urban. The problem of definition in these latter areas will be considered later in this discussion. The selection of incorporated places above a certain size had several advantages. It did isolate areas containing the highest population densities; and, since incorporation generally represents a type of organization which permits the setting up of administrative machinery for coping with the special problems arising out of high density - sewage disposal, the provisions of utilities, and police protection, and the like, it generally identified areas which have these secondary urban characteristics. Finally, since incorporation involves a definite area, the boundaries of the population concentration were automatically established and could be used in enumeration. This advantage may seem somewhat irrelevant, but if one examines costs to the Bureau of setting up such boundaries, as was done in the case of the urban fringe in 1950, its usefulness is apparent.

With minor changes in the treatment of special problem areas the 1910 definition remained intact through the 1940 Census. Although nowhere explicitly stated, and although a level of density which set off urban territory from rural territory was not specified, implicitly urban territory was defined in terms of high density in aggregates of appreciable size. This criterion has been designated in some quarters as naive and superficial - the really discriminating characteristics of the urban population are those relating to the urban

way of life such as characteristic occupations, services, attitudes and the like, and with the greater fluidity in the daily movement of population in the area in which people live is to a large degree irrelevant. This position appears to me to be somewhat misguided. It calls attention to be sure, to important problems, but if the urban concept means anything it certainly refers to the consequences of the high concentration of population in relatively small areas. As Dr. Eldridge has stated it:

"For much the same reasons that the definition of urbanization must be restricted, that of cities must also be restricted. Cities have been defined as ways of life, states of mind, collections of traits, types of occupation and the like. Such definitions are bound to get us in trouble sooner or later because none of the attributes named are constants of the city and all of them spill over into other areas. Traits change, occupations change, political organization changes, the economic system changes. The only trait that is constant is that the city is different from what is not the city. The nature of this difference varies. If we say that the city is a collection of traits, we cut ourselves loose from the only solid base on which we can set up definite criteria and find ourselves neck-deep in a sea of difficulties connected with the isolation of urban traits. It means that whatever we find more of in the city is an urban trait. But what is the city? Why, it is a collection of urban traits. How do we identify these traits? By their high intensity in the city. What is the city? A collection of traits. And so forth. The only way to break this deadlock is to go back to population concentration. The criterion must be in terms of population. Then we can study traits, relationships, and characteristics to our heart's content."<sup>1</sup>

In preparing for the 1950 Census, it became apparent that if urban population was the population in areas of high density, the definition used in past censuses would be inadequate. There were on the outskirts of most of our larger cities heavy concentrations of suburban population which, since they were outside the city limits, in unincorporated territory would fall into the rural population. There were also concentrations in the open country such as, for example, Kannapolis, North Carolina and Oak Ridge, Tennessee, which, being unincorporated, would likewise fall into the rural population.

In order to make up for these deficiencies, the staff of the Geography Division of the Bureau, in large part by a field examination, established boundaries for urban fringe areas around all cities with a population of 50,000 or more, as established by the 1940 Census or subsequent special

censuses, and outside of urbanized areas, around unincorporated places of 1,000 or more.

The urban fringe was laid out to include (with minor exceptions) all incorporated places adjacent to the central city and all adjacent unincorporated territory with a density of 500 dwelling units per square mile, a density normally the minimum found associated with a closely spaced street pattern. In addition, there were added the following elements: (1) adjacent territory devoted to urban land use, (2) clusters meeting the minimum density requirement with 1-1/2 miles of the main contiguous urbanized part, and (3) other outlying areas meeting the density criterion within one-half mile of the initial noncontiguous clusters.

The boundaries of the unincorporated places included a definite nucleus of residences and as far as feasible all surrounding closely settled territory.

The net effect of this change in definition was to increase the size of the urban population by about 9 percent over what it would have been under the 1940 definition. A detailed classification of the components of this change is presented in table 1.

The areas which have not lent themselves to the conventional treatment in terms of incorporated places are the New England towns and to a lesser degree the townships of Pennsylvania and New Jersey.

The problem arises from the unique character of the structure of local government in New England in contrast to the rest of the country. Counties in the United States are composed of minor civil divisions which in their totality account for the entire area of the county. They are known variously as townships in the Middle West, towns in New England and New York, and as judicial districts, election districts, militia districts, and the like in other parts of the country. Outside New England these minor civil divisions are spotted with small areas of high population density which typically are places incorporated as municipalities. In some States they are subordinate to the minor civil division in which they are located and in other States they are independent - in effect a minor civil division in their own right. In the New England States the same points of population concentration exist but typically they have no formal boundaries nor are they recognized as legal entities. Cities are grown up or "filled up" towns, and towns characteristically - like the Greek city State, have centers of population concentration and a considerable rural hinterland.

As the result of this situation, towns in New England were of necessity included or excluded from the urban population on an all or none basis. In 1910 all towns of 2,500 or more were included in the urban population. In later censuses it was felt that this procedure too greatly diluted the urban population, so that a series of special rules were developed which permitted the inclusion of certain New England towns, and elsewhere a relatively small number of townships, in the

urban population. In the 1940 Census, New England towns which contained thickly settled areas of 2,500 or more and in which 50 percent or more of the population of the town was to be found in thickly settled areas were recognized as urban. In addition, minor civil divisions with a population of 10,000 or more with a density of 1,000 or more per square mile and containing no incorporated places were classified as urban. The towns recognized as urban under special rule were largely concentrated in Massachusetts, Rhode Island, and New Hampshire and the townships in New Jersey and Pennsylvania, and in the aggregate accounted for a population of nearly 2 million.

In the 1950 Census neither towns nor townships were recognized as urban under special rule on the essentially correct assumption that the really urban parts of these minor civil divisions would either fall in the urban fringe or would be recognized as unincorporated places. About 2.4 million persons were counted in the areas which would have been urban under the 1940 special rules, and about 338,000 or about 14 percent were classified as living in rural areas according to the 1950 rules. Although this procedure met the theoretical specifications of the urban definition with a fair degree of adequacy, it had the net effect of suppressing the tabulation of certain data for a considerable number of New England towns and New Jersey and Pennsylvania townships. Since in both instances these areas are the units of local government, they were deprived of statistics for which there was considerable administrative need.

The definition of the urban population which is to be used in the 1960 Census is essentially the same as that of the 1950 Census. It had been hoped that the delineation of urban fringe would be extended to cities of 25,000 to 50,000 but this forward step could not be accomplished within the budget for the 1960 Census.

In 1960 the procedure for defining urban fringe has been altered. Instead of "on the ground" delineation of the areas prior to the census, areas which are certain to fall in the urban fringe have already been identified and the area so delineated has been surrounded by a band of small enumeration districts. When the population counts for these areas are available they will be included or excluded on the basis of a population density criterion.

Another innovation will be to reinstate selected towns in New England and townships in New Jersey and Pennsylvania as urban. This will be done if they have a population in 1960 of 25,000 or more, or, if they have a population of 2,500 to 25,000 and a density of 1,500 or more per square mile and do not contain a dependent incorporated place within their borders. This latter change, providing as it does for the separate recognition of selected towns and townships, will mean that statistics for administrative users will be available, but at the same time will not materially dilute the urban population with the rural population of the towns and townships in question. Most of the population in these areas

would have been urban by virtue of their location in the urban fringe or by the fact that they contained unincorporated places; in terms of 1950 population 95 percent of the aggregate population of the areas which would be urban under this rule, would also be urban in terms of urban fringe and unincorporated places.

Like the urban-rural definition, the definition of the farm population has been an apparently simple one. In the population censuses of 1920 through 1950, the farm population has been defined as the population living on a farm. It included all the persons living in households in which the respondent had answered "yes" to the question "Is this house on a farm?" There were minor variations in the wording from census to census, but substantively it was the same. In 1950, the enumerator was instructed to exclude persons who paid rent for house and yard only as well as persons living in motels, etc. located on farms.

No definition of a farm was given the enumerator, but since he was at the same time filling an agriculture schedule, it was assumed that his classification on the population schedule would be highly correlated with the information collected on the agriculture schedule. There was no reason to assume, however, that the two classifications would be identical, since the final determination of whether a place qualified as a farm was made by an office editing procedure.

As a part of the 1950 program of the Agriculture Census, records from the 1950 Census of Population were matched for a sample of about 11,000 farms and farm operators, and a report, Farms and Farm People, was prepared jointly by the Bureau of the Census and the Department of Agriculture.

This study suggested that approximately 1.7 million or about 8 percent of the rural-farm population, as counted in the Population Census, lived on places which were not classified as farms in the Agriculture Census. On the other hand, about 1 million persons living on farms as defined by the Agriculture Census, were not so classified in the Population Census. The net difference, based on the total rural population, was about 1.3 percent. (table 2).

In view of the rapid changes in the character of agriculture in this decade as indicated by the 1954 Census of Agriculture, the Bureau was considerably concerned about the possibility of a growing discrepancy between the size of the farm population implicit in the two approaches to its measurement. Consequently, in March and April of 1957, the Current Population Survey was used as a means of investigating this problem.

In March of 1957, the Agricultural Economics Division of USDA and the Agriculture Division of the Bureau of the Census sponsored a supplement to the Current Population Survey, which involved an abridged agricultural questionnaire of sufficient detail to make a farm determination according to the Agriculture Census procedure for those

households in the CPS sample which had reported themselves as on farms or reported income from the operation of their own farms.

In April 1957, the Agricultural Economics Division of USDA and the Population Division sponsored a survey in an effort to evaluate various criteria of farm residence. Among the questions on the schedule were questions on acreage and global questions on value of products and value of sales. It was therefore possible to approximate the agriculture census farm definition.

In both surveys a farm was defined (as in 1950 and 1954) as a place of 3 or more acres with a value of products of \$150 or more or a place of less than 3 acres with sales valued at \$150 or more. The results of the special farm determination were in both cases compared with the standard farm-nonfarm classification based on the responses to the question "Is this house located on a farm (or ranch)?" and in both surveys all persons living on farms were included in the farm population regardless of whether or not they were members of farm operator households.

The results of these surveys are summarized in tables 3 and 4. They suggest that, in comparison with 1950, the percentage of the rural population classified differently by the two approaches had increased by a factor of about 2 (5.1 to 11.4, March, or 8.8 April), that the population on agriculture census farms but not in the population census farm population had not changed appreciably; and that the percentage net difference had increased by about a factor of 5 (1.3 to 6.6 March, or 5.6 April).

There are, as tables 3 and 4 indicate, appreciable differences between the levels for some categories in the March and April surveys; but these are not unusual in CPS results relating to farm residence. For the population living on agriculture census farms as defined in 1950 and 1954, there is a surprising agreement between the two surveys in the absolute figures, 15.8 vs. 15.7 million. This agreement, if it is not purely coincidental, suggests that the substitution of summary questions, encapsulating a given farm definition, produces essentially the same results as the more elaborate agriculture census procedure.

In planning for the 1959 Census of Agriculture, the farm definition used in previous censuses have been subjected to a critical review by both the Agriculture Division of the Bureau of the Census and the Department of Agriculture. After due consideration, it was agreed that, for the purposes of the 1959 census of agriculture, a farm would be defined in terms of acreage and value of the sales of agricultural products as follows:

<u>Acreage</u>	<u>Sales</u>
10 or more	\$50 or more
Under 10	\$250 or more

the net effect of the use of this somewhat more restrictive definition would be to increase further the discrepancy between the size of the population of agriculture farms and the size of the

farm population as determined by the 1950 population question.

In view of this problem, and encouraged by the close correspondence of the figures for the population of agriculture census farms in the two surveys, the 2 agencies proposed to include on the 1960 sample schedule, questions relating to acreage and value of sales, which in terms of the response, would permit an identification of farms as defined above.

The exact form of the question is indicated in the material distributed. Admittedly, it may have a number of shortcomings, but these in all likelihood could not be corrected short of an operation similar to that employed by the Agriculture Census. There is neither time nor money for an operation of this complexity in the Population Census. Nor is it possible to obtain a farm residence classification for the Population Census from the Agriculture Census. Such a matching procedure would be costly and would seriously delay the processing of the censuses, and the difficulties of matching across a six month interval would seriously affect the quality of the classification.

The proposed procedure does have the advantage of bringing the Population and Agriculture figure on farm population more closely together and of eliminating from the Population Census farm population a considerable number of persons who would be members of that population only by

courtesy or sentiment. Some reduction in the proportion of disagreements (gross error) can be expected from the fact that the entire rural population will be covered, from the gap in time between the two censuses thus allowing time for the conversion of potential sales into actual sales, and from improvements in format and instructions. Confusion in the public mind arising from the former use of two definitions of a farm will be ended.

On the other hand, the count of the farm population in the census and in future surveys, notably the Current Population Survey, will be at a lower level than it has been in the past. Data from the April 1959 survey, in which the questions on farm population were asked in essentially the same form that they will be asked in 1960, indicate a difference between the two series of roughly the same magnitude as that observed in the 1957 Surveys. These data, and those obtained in the coming year in which both approaches will be used, will provide a basis for bridging the gap between the two series.

The Bureau's approach to the definition population has been made consistently in terms of the membership of households located at the seat of some agricultural operation. The same problem could of course be approached in terms of occupation or in terms of income from agricultural operation and employment. For a substantial part of the population in question, any of these approaches would yield the same result, but for the remainder there would be considerable variation depending on the particular approach used.

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<sup>1</sup> Hope Tisdale Eldridge: "The Process of Urbanization" in Demographic Analysis edited by J. J. Spengler and Otis Dudley Duncan, The Free Press, Glencoe, Illinois, 1956, p. 339.

Table 1.--URBAN AND RURAL POPULATION OF THE UNITED STATES UNDER OLD AND NEW URBAN DEFINITION: 1950

New definition	Total population	Old definition			
		Urban			Rural
		Total	Incorporated places of 2,500 or more	Places urban under special rule	
Total population.....	150,697,361	88,927,464	86,550,941	2,376,523	61,769,897
Urban.....	96,467,686	88,589,867	86,550,941	2,038,926	7,877,819
Incorporated places of 2,500 or more.....	86,550,941	86,550,941	86,550,941	...	...
Unincorporated places of 2,500 or more.....	1,994,727	320,504	...	320,504	1,674,223
Urban fringe <sup>1</sup> .....	7,922,018	1,718,422	...	1,718,422	6,203,596
Rural.....	54,229,675	337,597	...	337,597	53,892,078
Percent distribution by old classification:					
Total population.....	100.0	59.0	(57.4)	(1.6)	41.0
Urban.....	100.0	91.8	(89.7)	(2.1)	8.2
Incorporated places of 2,500 or more.....	100.0	100.0	(100.0)	...	...
Unincorporated places of 2,500 or more.....	100.0	16.1	...	(16.1)	83.9
Urban fringe <sup>1</sup> .....	100.0	21.7	...	(21.7)	78.3
Rural.....	100.0	0.6	...	(0.6)	99.4
Percent distribution by new classification:					
Total population.....	100.0	100.0	100.0	100.0	100.0
Urban.....	64.0	99.6	100.0	85.8	12.8
Incorporated places of 2,500 or more.....	(57.4)	(97.3)	(100.0)	...	...
Unincorporated places of 2,500 or more.....	(1.3)	(0.4)	...	(13.5)	(2.7)
Urban fringe <sup>1</sup> .....	(5.3)	(1.9)	...	(72.3)	(10.0)
Rural.....	36.0	0.4	...	14.2	87.2

<sup>1</sup> Exclusive of incorporated places of 2,500 or more.

Source: Henry D. Sheldon, Changes in the Rural Population, 1940 to 1950, Rural Sociology, June 1952

Table 2.--RURAL POPULATION BY FARM-NONFARM RESIDENCE, POPULATION VERSUS AGRICULTURE CENSUSES: 1950  
(In thousands)

Population definition - tabulation of answers to question, "Is this house on a farm?"	Agriculture definition applied by editing agriculture schedule		
	Total	Farm	Nonfarm
Total.....	54,230	22,325	31,904
Farm.....	23,048	21,313	1,735
Nonfarm.....	31,181	1,012	30,169

Table 2a.--DIFFERENCES IN CLASSIFICATION  
(In thousands)

Type of difference	Number	Percent
Total rural population.....	54,230	100.0
Net difference.....	723	1.3
Gross difference.....	2,747	5.1

Note: Statistics are based in part on the result of a sample matching of agriculture and population schedule and in part on data from the 1950 Census of Population. They have been adjusted to eliminate the urban farm population (about 283,000). Persons who were living on farms but not members of farm operator households have been included in the agriculture census farm population as well as in the population census farm population.

Agriculture farm population: Persons living on places of 3 or more acres with value of products of \$150 or more or places of less than 3 acres with sales of agricultural products of \$150 or more.

Population farm population: Persons living in households reported by respondents to be on farms.

Source: U. S. Departments of Agriculture and Commerce: Farms and Farm People, Washington, 1953, and U. S. Census of Population: 1950, Vol. II, Characteristics of the Population, Part 1, United States Summary, Washington, 1953.

Table 3.--RURAL POPULATION BY FARM-NONFARM RESIDENCE, POPULATION VERSUS AGRICULTURE  
DEFINITION: CURRENT POPULATION SURVEY, MARCH 1957  
(In thousands)

Population definition - tabulation of answers to question, "Is this house on a farm?"	Agriculture definition applied by editing agriculture schedule		
	Total	Farm	Nonfarm
Total.....	63,990	17,300	46,690
Farm.....	21,524	15,772	5,752
Nonfarm.....	42,466	1,529	40,937

Table 3a.--DIFFERENCES IN CLASSIFICATION  
(In thousands)

Type of difference	Number	Percent
Total rural population.....	63,990	100.0
Net difference.....	4,223	6.6
Gross difference.....	7,281	11.4

Note: Statistics are based on a survey sponsored by the Agriculture Division covering household classified as farm in the Current Population Survey and other rural household reporting farm income and on estimates of the total rural population derived from the Survey.

Agriculture definition: Persons living on places of 3 or more acres with value of products of \$150 or more or places of less than 3 acres with sales of agricultural products of \$150 or more.

Population definition: Person living in household classified as "farm" on the CPS control cards which in turn is based on replies to the question, "Is this house on a farm?"

Source: Current Population Survey, March 1957.

Table 4.--RURAL POPULATION BY FARM-NONFARM RESIDENCE, POPULATION VERSUS AGRICULTURE  
DEFINITION: CURRENT POPULATION SURVEY, APRIL 1957

(In thousands)

Population definition - tabulation of answers to question, "Is this house on a farm?"	Agriculture definition - tabulation of answers to questions on acreage and value of products		
	Total	Farm	Nonfarm
Total.....	64,362	16,760	47,602
Farm.....	20,334	15,702	4,632
Nonfarm.....	44,028	1,058	42,970

Table 4a.--DIFFERENCES IN CLASSIFICATION

(In thousands)

Type of difference	Number	Percent
Total rural population.....	64,362	100.0
Net difference.....	3,574	5.6
Gross difference.....	5,690	8.8

Agriculture definition: Persons living on places of 3 or more acres with value of products of \$150 or more or places of less than 3 acres with sales of agricultural products of \$150 or more.

Population definition: Person living in household classified as "farm" on the CPS control cards which in turn is based on replies to the question, "Is this house on a farm?"

Source: Current Population Survey, April 1957.

## 1960 FARM POPULATION QUESTIONS

## ON THE HOUSEHOLD QUESTIONNAIRE:

(Self enumeration)

H17 and H18. Is this house:

On a city lot  
(or is this an apartment building)?..... ☐

OR

On a place of less than 10 acres?..... ☐ → Last year (1959), did sales of  
crops, livestock, and other  
farm products from this place  
amount to \$250 or more?\$250 or more..... ☐Less than \$250 or  
none..... ☐

OR

On a place of 10 or more acres?..... ☐ → Last year (1959), did sales of  
crops, livestock and other  
farm products from this place  
amount to \$50 or more?\$50 or more..... ☐Less than \$50 or none. ☐

## ON THE SAMPLE FOSDIC SCHEDULE

(Used by enumerator)

H17. Is this house--

On a city lot  
(or apt. bldg.)?..... ☐  
(Omit H18)On a place of less than  
10 acres?..... ☐  
(Ask H18a)On a place of 10 or more  
acres?..... ☐  
(Ask H18b)

H18a. If occupied--

Last year, 1959, did sales of crops, live-  
stock and other farm products from this  
place amount to--\$250 or more?..... ☐Less than \$250 (or none)?..... ☐

H18b. If occupied--

Last year, 1959, did sales of crops, live-  
stock and other farm products from this  
place amount to--\$50 or more?..... ☐Less than \$50 (or none)?..... ☐