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# SELECTIVE SERVICE REJECTTEES IN RURAL MISSOURI, 1940-1943

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## SUMMARY

The examination of 310,381 men 18 through 37 years of age for military service as of September 15, 1943, gives some indication of the physical and mental health of the male population in Missouri. A total of 284,084 whites and 26,297 Negroes were examined. Of this number, 80,964 were rejected for military service, 70,993 whites and 9,971 Negroes. The total rejection rate per 1,000 men examined was 245.3 for whites and 368.4 for Negroes. Rates for physical causes were 186.3 and 255.2 for whites and Negroes respectively, and the corresponding rates for mental causes were 59.0 and 113.2.

The rural regions in Missouri having the highest standard of living had the lowest rejection rates, and the regions having the lowest standard of living had the highest rejection rates. This was true for physical and mental causes, as well as for the total rejection rate. The differences in rates between the rural social areas were all significant except the differences between Areas D and E for the total and mental rates, and the differences in physical rates between A and B, and B and C.

The comparison of rates for the rural and urban counties within each of the rural social areas indicated that the rural rates were higher than the urban, and that both rural and urban rejection rates increased as the level of living decreased from Area A through Area E. The comparison of rates for the rural counties with urban counties in terms of the percentage of urban population in counties indicated that the rural rate was higher and that the rejection rates declined as the degree of urbanization increased. However, there are sections within large cities that had rejection rates higher than those of the strictly rural counties.

Negro rejection rates were higher than white rates for Missouri as a whole, for the rural social areas, for the rural and urban grouping of counties, and in the cities. Negro rates were higher for total rejections as well as for physical and mental causes of rejection.

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# SELECTIVE SERVICE REJECTTEES IN RURAL MISSOURI, 1940-1943

LAWRENCE M. HEPPLE

## I. INTRODUCTION

One of the major problems of a nation is the health of its people. The welfare of society as well as the agricultural and industrial efficiency of that country is dependent upon whether or not the people are healthy. A sick and undernourished people cannot function effectively as workers or as soldiers in defense of the nation. Our own role in international affairs in war or in peace depends ultimately upon the physical and mental health of our citizens. Not only is this a national problem, but one as well for every state and community in the United States.

In spite of the numerous health studies that have been published in recent years, some people assume that health, if it is a problem, is one that is related to other people. If we learn that our chances are one in a thousand of contracting a particular disease, we feel fairly safe that we will be among the 999 who escape. If the odds are one in a hundred, we still feel it is a problem that concerns others. However, when we realize that there is one chance in ten or eight that we will die of a particular disease, we become somewhat interested in that disease. Even though we are interested, we may still assume that we are fairly safe, if we are not in the upper age groups and not engaged in hazardous occupations. How safe are we actually? It may not be possible at present to give a complete answer to that question, but it is possible to show that health is a problem that merits the attention of all of us. Approximately every fourth man between 18 and 37 years of age in Missouri examined for military service during World War II was rejected. In other words, Missouri's participation in the armed forces was only 75 per cent of her potential contribution.

Studies of physical and mental health have shown differences in the incidence of defects between urban communities and rural areas. They have also demonstrated variations in health conditions within cities according to social and economic conditions prevailing in different sections. These studies suggest that one might find rural and urban differences in Selective Service rejection rates, and that social and economic conditions may have some effect upon rejection rates. C. E. Lively and C. L. Gregory have presented the characteristics of the six major rural areas in Missouri found to have a relative homo-

geneity of social and economic traits.<sup>1</sup> There are obviously variations within counties, but reliable information was available only on the basis of county units. A description of these areas is presented in the following section. Lively and Gregory found that there were significant differences in social and economic conditions between the rural areas in the state. If rejection rates are affected by social and economic conditions, then there should be differences in rejection rates for these areas. The first way of analyzing rejection rates in this study is to determine whether there were significant differences in the rates for the several areas. The second way of studying these rates is to determine whether or not there were differences between rural and urban areas.

The data for the present study include the results of the examination of 310,381 men, 18 through 37 years of age, from all of the local boards in Missouri, who were examined as of September 15, 1943. Of the total number 284,084 were whites, and 26,297 Negroes. Of this group, 80,964 were rejected for military service—70,993 whites and 9,971 Negroes. Since it was possible to secure enlistment and induction statistics only for the entire group 18 through 37, rather than by specific ages, from the National Selective Service Inventory of September 15, 1943, this study deals with that age group from the beginning of Selective Service to the date of the above mentioned inventory. The total number examined as used in this study is to be interpreted to mean all men inducted, enlisted, and rejected for all local boards.

In 1943, state medical officers of the Selective Service System were ordered by National Selective Service to review the causes of rejection of all 4F's in every local board in the state. For this purpose a list of 4F's from each local board was submitted to the medical officer. This list contained the following information for each rejectee: order number, name, age, race, cause of rejection, place of rejection, and date of rejection. The information on the list used in the present study includes age, race, cause of rejection, and name of the local board. Because of the confidential nature of the information, the names and order numbers of the rejectees were not used. Since local boards sometimes sent their men to Jefferson Barracks and at other times to Fort Leavenworth to be examined, it was impossible to obtain the total number of men examined from each local board at the two induction stations. Therefore, the place of rejection could not be used. The 4F's on these lists were rejected either by the local board physician for obvious defects or subsequently at the induction station.

Selective Service divided Missouri into 175 local boards. Buchanan, Greene, and Jasper counties had 3 local boards each. There were 16 boards in Kansas City, and 2 in Jackson County outside of Kansas City. St. Louis City had 30 local boards, and St. Louis County had 9. For the rest of the state there was one local board for each county.

<sup>1</sup>Lively, C. E., and Gregory, C. L., *Rural Social Areas in Missouri*. Columbia, Missouri; Agricultural Experiment Station Research Bulletin 305, College of Agriculture, University of Missouri, 1939.

Selective Service regulations pertaining to the physical examinations of men for military service and the list of disqualifying defects for military service received slight changes from time to time, most of them as the result of programs designed to rehabilitate men with certain defects. The highest standards were observed during the brief period of the peacetime Selective Service. Most, if not all, of the men rejected during the peacetime Selective Service were re-examined after the United States entered World War II. Only minor changes were made from this time until after September 15, 1943. The causes of rejection which applied to the rejectees included in this study were those which were in force as of September 15, 1943. These causes of rejection were classified into 25 categories of medical reasons and one category of non-medical reasons, a classification based for the most part upon the Defect Code, issued in November, 1943, which was used by Selective Service, the Army, and the Navy for processing the reports of physical examination and induction.

The cause of rejection recorded for each individual was the one indicated by the examining physician as the chief disqualifying defect, even though the person examined may have had two or more disqualifying ones. The number of rejectees in each category does not, therefore, indicate the complete incidence for that defect among the persons examined. For example, a man may have had an ear abnormality and a hernia, but hernia was given as the disqualifying defect. In that case the individual was classified as having been rejected for hernia.

Specific causes of rejection were combined, for the purposes of this study, to form the physical and mental categories. These divisions, likewise, may not show the complete incidence of physical and mental defects, because an individual may have been, say, both tubercular and psychoneurotic, but the chief cause of rejection given was tuberculosis. Since only the chief disqualifying defect was classified, the total mental rate given is undoubtedly lower than the actual incidence of psychiatric defects among the men examined.

The total medical rejection rates for a local board may be taken as reliable indices because they represent all persons rejected. It may also be assumed that these men would have been rejected for other reasons if not for the defect cited as the disqualifying one. The physical and mental rejection rates are slightly less reliable than the total medical rate, but it may be assumed that they represent a better picture of the incidence of their respective classes of defects than do the rates for specific causes.

Included in the lists for this study are a few men who after only a short time in service had been discharged and subsequently classified by Selective Service as 4F, regardless of cause of discharge. For the purpose of the present study, those who had been discharged for medical reasons were placed in the proper group for that medical defect. Those who had been released under other than honorable conditions, and honorably discharged men for whom no cause was given, were classified in the group of non-medical causes of rejection.

In classifying the causes of rejection it is apparent that some are physical defects or diseases and some are mental. The mental causes of rejection include mental diseases, psychoneuroses, and educational and mental deficiency. All other medical causes of rejection not included in these comprise the physical causes of rejection. The total causes of rejection included all 4F's rejected for either physical or mental causes of rejection. A relatively small number of men were classified as rejected for non-medical reasons. The number was so small that it had no significant effect upon distributive patterns of the medical rejection rates, and, therefore, is omitted from this study.

Rejections for tuberculosis were based upon the results of chest X-rays, and rejections for educational and mental deficiency were based upon intelligence tests. It may be assumed, therefore, that the rates for these two categories of specific causes are based upon fairly accurate data, even though they may not show the complete incidence of either defect. Rates for these two specific causes of rejection are analyzed along with those for physical and mental causes.

All rejection rates reported in this study are based upon the number rejected per 1,000 men, age 18 through 37, examined from the beginning of Selective Service to September 15, 1943. The physical rejection rate is the total for all physical causes. Likewise, the mental rejection rate is the total for mental causes. The total rate is the combination of physical and mental rates.

Studies of white and Negro groups have given evidence that the level of living, educational opportunities, and health conditions are better for whites than for Negroes. In view of this, one would expect that white rejection rates would be lower than the Negro rates. The total rejection rate for whites was 245.3 per 1,000 men 18 through 37 examined in Missouri, the rate for Negroes, 368.4.<sup>2</sup> Thus, the Negro rate was 123.1 higher than the white rate. The rate for physical causes was 186.3 for whites as compared with 255.2 for Negroes. Rates for the mental causes show that the Negro rate of 113.2 was almost twice the white rate of 59.0. The rejection rate for tuberculosis was 16.4 for Negroes as compared with 12.0 for whites. The Negro rate for educational and mental deficiency was almost three times the rate for whites, 58.9 as compared with 20.3.

There were some local boards in which no Negroes were examined, and in others the number was too small to be significant. For example, in Rural Social Area D, there were no Negroes rejected. This white-Negro differential in rejection rates does not affect the ways in which rejection rates are analyzed. The selected indices of social and economic conditions in the rural social areas in Missouri were based on the combined white and Negro population. There-

<sup>2</sup>Inasmuch as the total number examined in this study includes, in addition to the men inducted through Selective Service, those who enlisted, the rates reported herein are lower than the rates for Missouri as reported in the sample studies made by the National Selective Service.

fore, rejection rates for the rural social areas are the rates for whites and Negroes combined. However, the irregular distribution of Negroes throughout the state would affect the analysis of rejection rates in terms of rural and urban counties. In this analysis only white rates are used.

As previously indicated, the rates for specific causes may not give a correct picture of the incidence of these defects. However, for the vast majority of specific causes the Negro rate was higher than the white. Likewise, Negro rejection rates for the rural social areas were consistently higher than the white rates. Area E, which had the highest proportion of Negroes and the lowest index of farm plane of living, had the highest Negro rejection rates.

The rejectees in this study were examined and rejected either by the local board physician, or at the induction stations at Fort Leavenworth and Jefferson Barracks. By September 15, 1943, most of these men had been rejected at an induction station, except those rejected for obvious defects. There was never a definite division of counties to be served by either induction station. Generally, counties near the Kansas border sent men to Fort Leavenworth, but there were times when men from Kansas City were sent to Jefferson Barracks. From the data available in this study it is impossible to determine whether or not there were differences in rejection rates for these two induction stations.

There are several standards that may be used in making health examinations. For example, the criterion for health may be one's ability to function effectively in a particular occupation. The criteria for civilian health in peacetime may well be different from the criteria of fitness for military service in time of war. Rejection rates in this study are indicative of the health of the male population between 18 and 37 years of age as measured by fitness for military service.

## II. RURAL SOCIAL AREAS

The objective of this section is to determine whether or not the differences in rejection rates for these areas are significant. The rural social areas, as presented by Lively and Gregory in *Rural Social Areas in Missouri* were used as the basis for formulating this objective and rejection rates were computed for the areas indicated in their study.

### A. Description of the Areas

Figure 1 shows the location of the six major social areas. This map was made on the basis of the six regions indicated by Lively and Gregory, and the brief description of the areas in the following paragraphs is likewise taken from their study. The general conditions in each are described, and three indices, the farm plane of living, the rural non-farm plane of living, and literacy and general education of the population are given.

Area A, including 11 northwestern Missouri counties, is in most respects one of the better sections of the state. Indices of literacy, education, social participation, and standard of living indicate that it is far above the average

for Missouri. The birth rate is lower and the size of family smaller in Area A than in poorer sections. Kansas City and St. Joseph, located in this group of counties, undoubtedly exert an urban influence over much of the area. The following indices show that the plane of living is the highest in the state, except for Area F: index of farm plane of living, 154.4; index of non-farm plane of living, 142.4; index of literacy and general education of the population, 121.5.

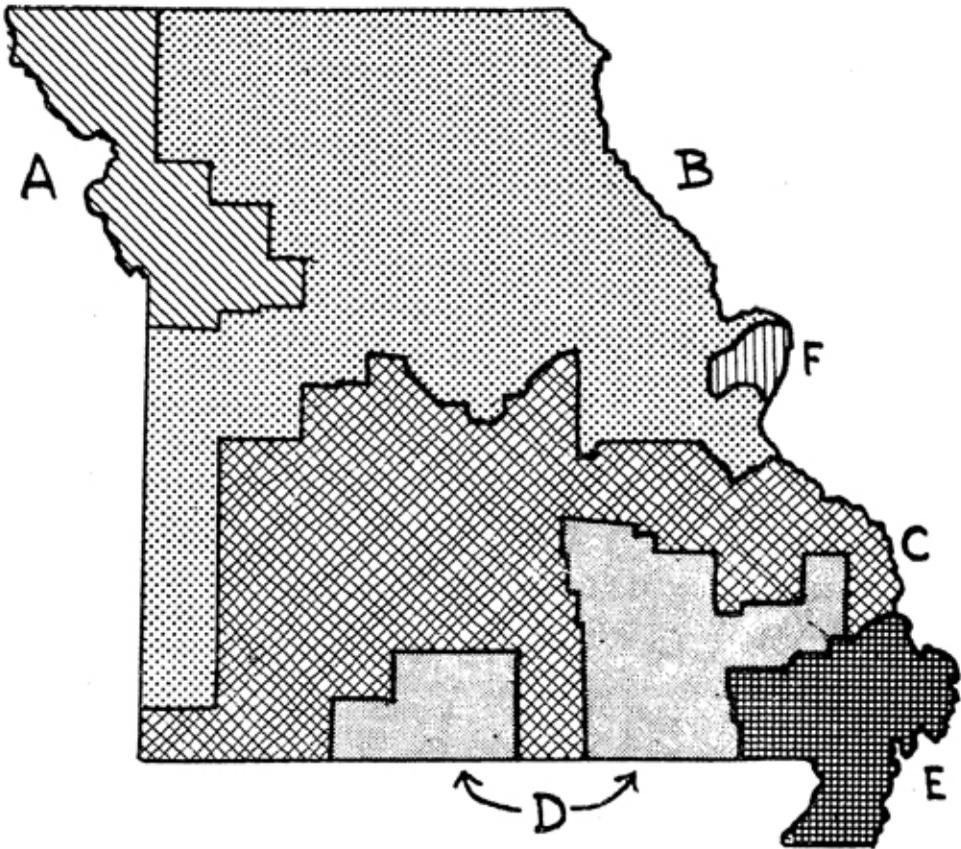


Fig. 1.—Rural Social Areas of Missouri.

Area B is composed of 51 counties, including all those north of the Missouri River, except the ones in Area A, a group of counties south of the Missouri River along the Kansas border, and a few counties south of the river in the eastern part of the state. Indices of standard of living are somewhat lower in Area B than in Area A, but above the average for the state. Again, urban culture traits have probably diffused to those counties which are near St. Louis. The lowest birth rates for rural regions are found in this area. The index of farm plane of living is 119.5, the index of rural non-farm plane of living is 108.1, and the index of literacy and general education of the population is 115.5.

Area C, the Ozark border region comprising 33 counties located in the

southern part of the state, is in an intermediate position between the social and economic conditions found in the north and those prevailing in the south. Fairly high birth rates and large families are characteristics of Area C. The index of farm plane of living is 77.7, the index of rural non-farm plane of living is 85.4, and the index of literacy and general education of the population is 87.6. These indices are below the average for the entire state.

Area D, the Ozark mountain section of Missouri, consists of 11 counties. As it appears on a map of Missouri, this area is divided into two groups of counties, but both groups are joined in a subregion that extends into Arkansas. High birth rates and large families, limited social participation, and low standards of education characterize the area. The index of farm plane of living is 48.5, the index of rural non-farm plane of living is 69.7, and the index of literacy and general education of the population is 71.9.

Area E is composed of 7 counties known as the Southeast Missouri Lowlands. This area has the highest proportion of Negroes in the population for rural Missouri. Mobility rates are high and the density of rural population is high because of the large families and small farms. The index of farm plane of living is 43.5, the index of rural non-farm plane of living is 68.5, and the index of literacy and general education of the population is 57.1. These are the lowest indices found in the state.

Area F is St. Louis County, but does not include St. Louis City. Although the percentage of people living on farms is low, 54.6 per cent of the population is classified as rural. This does not give an accurate picture of the county, because a large number of persons who work in St. Louis City are classified as rural simply because they live in communities with a population of less than 2,500. A large proportion of the population is composed of upperclass suburbanites. The index of farm plane of living is 203.4, the index of rural non-farm plane of living is 258.2, and the index of literacy and general education of the population is 90.2.

### B. Rejection Rates

Inasmuch as the indices of the social and economic data used in determining the rural social areas were for the total rural population of the counties, the rejection rates given in this section were computed for the total number of whites and Negroes examined.

The medical rejection rates per 1,000 men examined for the regions were as follows: Area A, 200.4; Area B, 241.3; Area C, 275.6; Area D, 335.6; Area E, 361.5; and Area F, 218.2. When these rates are compared with the indices of the farm plane of living for the same areas, as may be seen in Table 1, one finds that as the index of plane of living declined the rate of rejection increased, except for Area F. The index of farm plane of living was higher in Area F than in any other area, but its rejection rate of 218.2 was higher than the rate of 200.4 in Area A. Area A had the second highest index of farm plane of living, but had the lowest rejection rate. Although there is a high percentage

Table 1. Indices of Planes of Living and Literacy, and Rejection Rates of the Six Major Rural Social Areas

Indices and Rates	Rural Social Areas					
	A	B	C	D	E	F
Index of Farm Plane of Living	154.4	119.5	77.7	48.5	43.5	203.4
Index of Rural Non-farm Plane of Living	142.4	108.1	85.4	69.7	68.5	258.2
Index of Literacy and General Education	121.5	115.5	87.6	71.9	57.1	90.2
Total	200.4	241.3	275.6	335.6	361.5	218.2
Physical	166.9	185.6	192.4	214.3	240.9	171.2
Mental	33.5	55.7	83.2	121.3	120.6	47.0

of urban population in Areas A and F, it must be remembered that the men in Area A were rejected either by the local board physician or at the induction station at Fort Leavenworth, and that men from Area F were rejected either by the local board physician or at the induction station at Jefferson Barracks. This difference between the two induction stations may account, either in part or in whole, for the irregularity between Areas F and A.

The medical rejection rate for Missouri was 255.8. Areas A, B, and F have rates below the average for the state. Areas C, D, and E have rates higher than the state average. In the previous discussion of indices of the rural social areas, it was shown that Areas A, B, and F were better than the state average, while Areas C, D, and E ranked lower. Table 1 shows the indices of farm plane of living, rural non-farm plane of living, and literacy and general education of the population, as well as the medical rejection rate, the physical rate, and the mental rate for the six rural social areas.

The method of testing the differences in rejection rates among the rural social areas was to compute the critical ratios of these differences. This test was used to determine whether the differential rejection rates constitute significant differences or may be the result of a chance grouping of counties. Since Area F consists of St. Louis County, and since there are no county variations in the area, it was not compared with the other areas in making this test. The standard errors of the means of the medical, physical, and mental rates for the counties in Areas A, B, C, D, and E were computed. Since the rates increase from Area A through Area E, with the exception of the mental rates in Areas D and E which are about the same, whenever a significant difference was found between Areas A and B, and between Areas B and C, it was assumed that there was a significant difference between Areas A and C. The social areas were compared in the following manner: Areas A and B, Areas B and C, Areas C and D, and Areas D and E.

The difference between the areas for medical rejection rates were all clearly significant except those between D and E. As indicated in the description of the areas, the difference between D and E is small. The critical ratio of the difference between A and B for physical rejections was probably significant, but the difference between B and C was probably not significant. However, when A was compared with C, the difference between the two areas was clearly

significant. The differences between C and D, and D and E, for mental rejections were clearly significant.

Analysis of mental rejection rates indicates that all of the critical ratios were clearly significant except that of Areas D and E. The absolute difference between D and E was only 0.7 and one would not expect this difference to be significant. All of the differences between the rural social areas for the medical, physical, and mental rejection rates were significant except the difference between D and E for the medical and mental rates, and those between A and B, and B and C for physical rates.

As indicated in Section I, rejection rates for tuberculosis and educational and mental deficiency may be assumed as fairly accurate, even though they may not show the complete incidence of either defect. Rejection rates for tuberculosis were as follows: A, 9.1; B, 10.5; C, 14.7; D, 16.7; E, 17.7; and F, 10.2. These rates are similar to the pattern of physical rates. Rates for educational and mental deficiency for the regions were as follows: A, 14.9; B, 26.1; C, 36.1; D, 50.1; E, 60.8; and F, 9.2. In this case Area F has the lowest rate. This deviates from the pattern found for mental rates. However, the rates for educational and mental deficiency are similar to the indices for literacy and general education of the population.

### C. Conclusion

While approximately every fourth man examined for military service in Missouri was rejected, this rate was not uniform throughout the state. Only one man in five was rejected in Area A as compared with one man in three in Areas D and E. Areas A, B, and F, which ranked above the state averages for the social and economic factors analyzed, had rejection rates below the state average. Areas C, D, and E, which ranked below the state averages for planes of living and literacy and general education, had rejection rates above the state average. Since the differences between the areas, with two exceptions, are statistically significant, it may be concluded that rejection rates are related to the indices of social and economic conditions. These differential ecological patterns within the state are similar to the ecological pattern of the rural social areas as determined by Lively and Gregory.

### III. RURAL AND URBAN REJECTION RATES

With the exception of Kansas City and St. Louis the number of rejectees was available only in terms of counties, and it was not possible to separate urban from rural rejectees within each county. Rural and urban differences can be shown only by comparing rejection rates for rural and urban counties. Two analyses are presented in this section. The first is a comparison of rural and urban counties within each of the rural social areas of the state; and the second is a comparison of rural counties with groups of counties according to the percentage of urban population in these counties. The analysis of rural and urban rejection rates is based entirely upon white rates, because Negro

rejection rates are higher than white rates, and there is an irregular distribution of Negroes in Missouri.

#### A. Rural-Urban Differentials in the Rural Social Areas

Of the 114 counties in Missouri, 57 are rural and 57 may be classified as urban. With the exception of Area F, which is St. Louis County, there are rural and urban counties in all of the other social areas of the state. All of the rural counties in Area A were grouped together, and rejection rates computed for this group. Likewise, all of the urban counties in Area A were grouped together, and rejection rates computed for the entire group. The same procedure was followed for Areas B, C, D, and E. The white rejection rates for the rural and urban counties of the rural social areas are presented in Table 2 and Figure 2.

Table 2. White Rejection Rates of Rural and Urban Counties for the Rural Social Areas

Causes of Rejection	Rural Social Areas				
	A	B	C	D	E
Total					
Rural	178.1	239.9	293.1	337.5	359.6
Urban	191.6	237.3	263.3	317.8	333.0
Physical					
Rural	137.8	182.9	197.4	212.2	240.5
Urban	161.8	185.6	188.5	234.0	229.1
Mental					
Rural	40.3	57.0	95.7	125.3	119.1
Urban	29.8	51.7	74.9	83.8	103.9

The total rejection rates for the rural counties were higher than those for the urban counties in all of the social areas except Area A. The urban rate in Area A was 191.6 as compared with a rural rate of 178.1. In Area B the rural rate of 239.9 was slightly higher than the urban rate of 237.3. In Area C the rural rate was 30 per 1,000 higher than the urban rate, and in Areas D and E the rural rates were 20 and 26 per 1,000 higher than the urban rates. The rural rate in Area E was 359.6 as compared with an urban rate of 333. These rates indicate that in general the rural rejection rates were higher than the urban. It is significant, however, to note that both rural and urban rates increase from Area A through Area E. In the preceding section it was found that the differences between the areas were, for the most part, significant. The fact that urban rates manifest the same tendency as rural rates, namely, to increase from Area A through Area E, suggests that the delineation of the rural social areas may apply to urban areas throughout the state as it does to the rural regions.

As may be seen in Figure 2, it is impossible to indicate any trend for re-

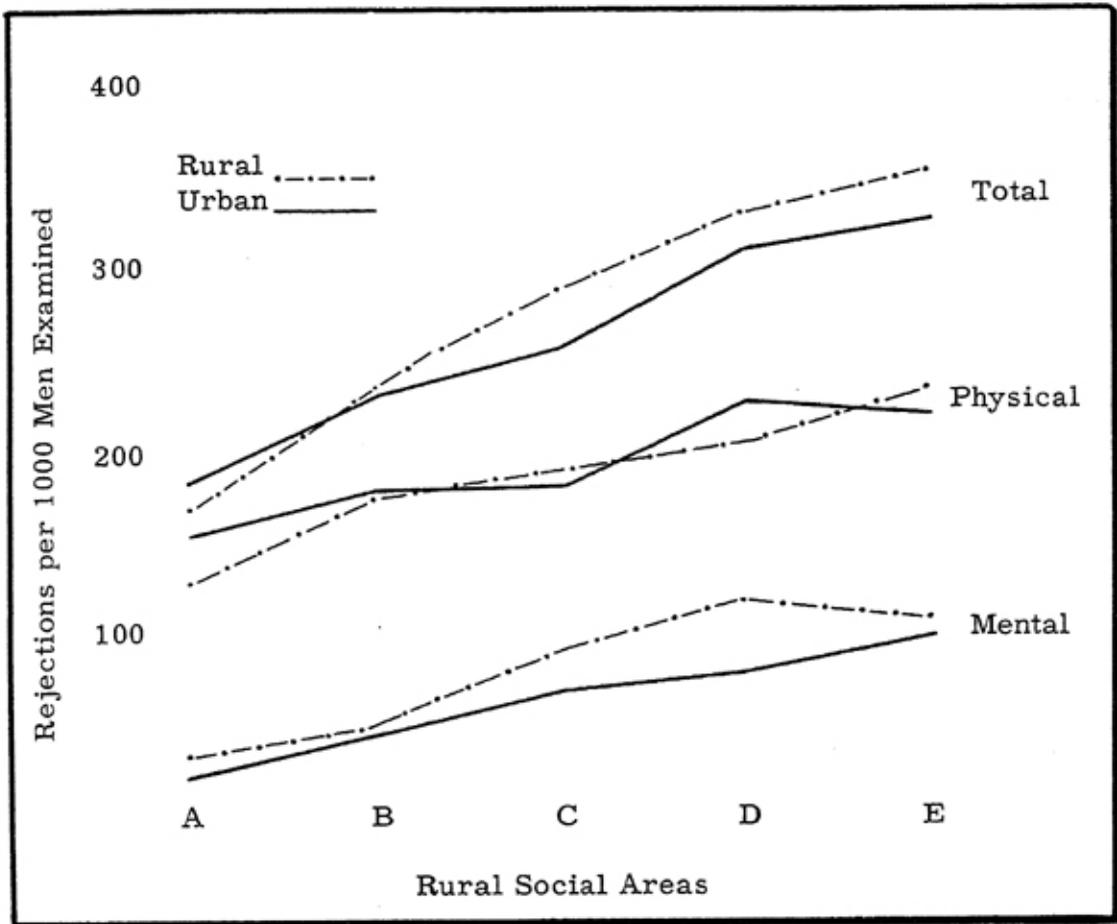


Fig. 2.—White rejection rates of the rural and urban counties, by rural social areas.

jection for physical causes. The urban rates were higher than the rural in Areas A, B, and D, but the rural rates were higher than the urban in Areas C and E. However, the rural rate for mental causes was higher than the urban in every social area. Rejections for educational and mental deficiency and psychoneuroses account for the differences between the rural and urban rates. Both rural and urban rates for mental causes increased from Area A through Area E, with the exception of the rural rate for Area E. For example, the rural rate in Area A was 40.3 as compared with 119.1 in Area E, while the urban rate increased from 29.8 in Area A to 103.9 in Area E.

### B. Degree of Urbanization

To evaluate the effect of the degree of urbanization, the 57 urban counties were grouped into four categories as follows: Class I, counties having from 1 to 25 per cent urban population; Class II, those having from 26 to 50 per cent; Class III, those having from 51 to 75 per cent; Class IV, counties with 76 to 100 per cent urban population. As previously indicated, St. Louis County is more urbanized than the percentage of urban population in the county would indicate. In order to place the county more accurately, St. Louis City was

added to St. Louis County and the percentage of urban population computed for the entire area. In like manner Kansas City was added to the two local boards in Jackson County. By doing this, Jackson County and St. Louis County were placed in the Class IV urban group along with Buchanan County. The urban counties included in Classes I, II, III, and IV, as well as the 100 per cent rural counties, may be seen in Figure 3.

White rejection rates for the above groups of counties and the state are recorded in Table 3 and Figure 4. The total rejection rate for whites in Missouri was 245.3, which is approximately the same as the Class III urban group of counties. The Class IV group had the lowest rate, 226.3. The highest rate was in the rural counties and the next highest was in the Class I urban group. As the percentage of urban population increased, rejection rates tended to decrease.

The Class IV group of counties had a rate of 179.6 for physical causes of rejection, which was lower than the state average of 186.3. The Class II and Class III groups were approximately the same, 191.5 and 191.0. The Class I group with a rate of 195.5 was higher than the rural counties with the rate of 192.9. Differences in the rates of these categories were unusually small, but except for the discrepancy in the last two groups mentioned, rejection rates tended to decrease as the percentage of urban population increased.

Table 3. White Rejection Rates According to the Percentage of Urban Population, 1940.

Rejection Rates	100% Rural	Urban				State
		I 1-25%	II 26-50%	III 51-75%	IV 76-100%	
Total	277.5	271.4	255.8	242.9	226.3	245.3
Physical	192.9	195.5	191.5	191.0	179.6	186.3
Mental	84.6	75.9	64.3	51.9	46.7	59.0

Both the Class III and Class IV groups, with rates of 51.9 and 46.7 respectively for mental causes, were lower than the state average of 59.0. The rural group had a rate of 84.6; the Class I urban group, a rate of 75.9; the Class II group, a rate of 64.3. These rates demonstrate clearly that rejections for mental causes decreased as the degree of urbanization increased. Rejections for educational and mental deficiency are important in this connection. Only the Class IV urban group with a rate of 9.2 was lower than the state rate of 20.3. The rates for the rural counties, and for Classes I, II, and III urban groups were respectively 38.3, 37.4, 24.9, and 20.8. It was not possible to separate the educationally deficient rejectees from those mentally deficient, but, even when allowance is made for possible variations in the incidence of

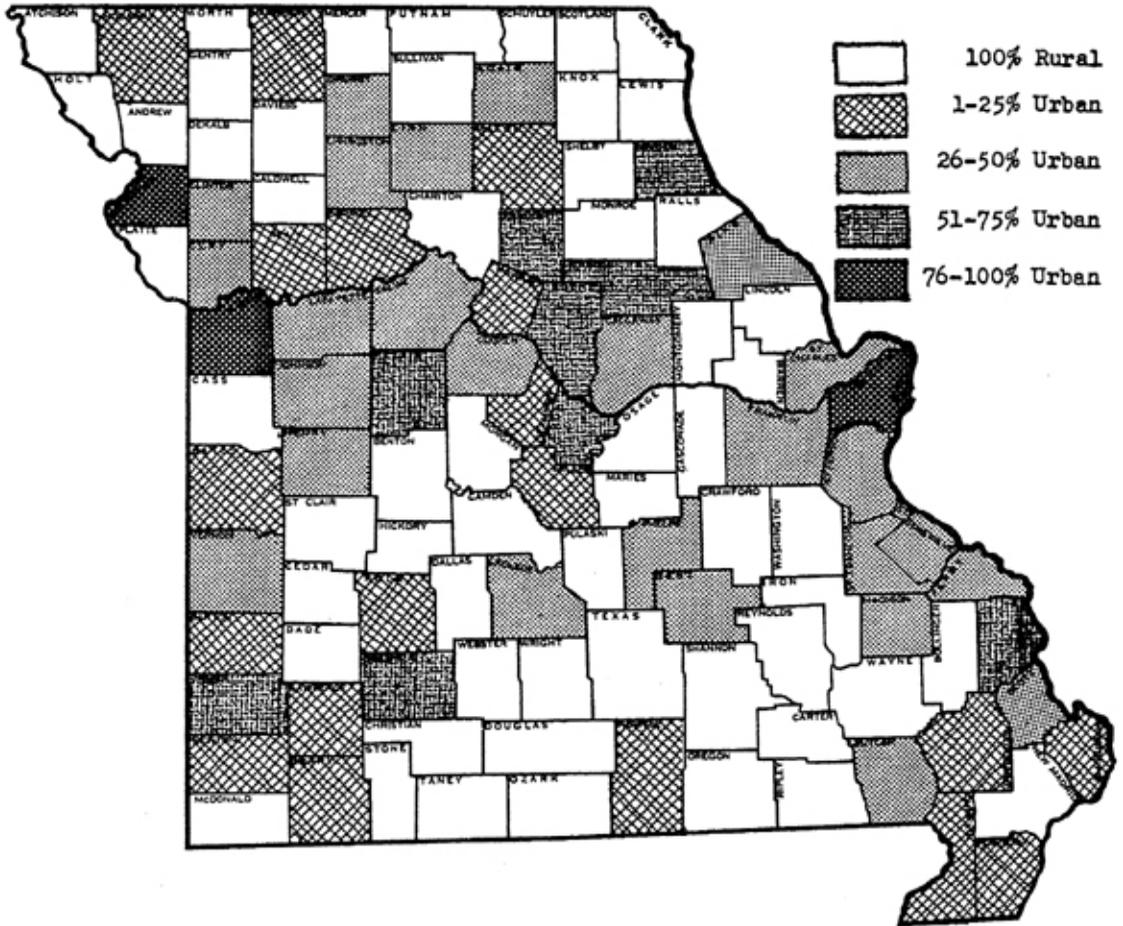


Fig. 3.—Counties of Missouri according to the percentage of urban population, 1940. (St. Louis County combined with St. Louis City.)

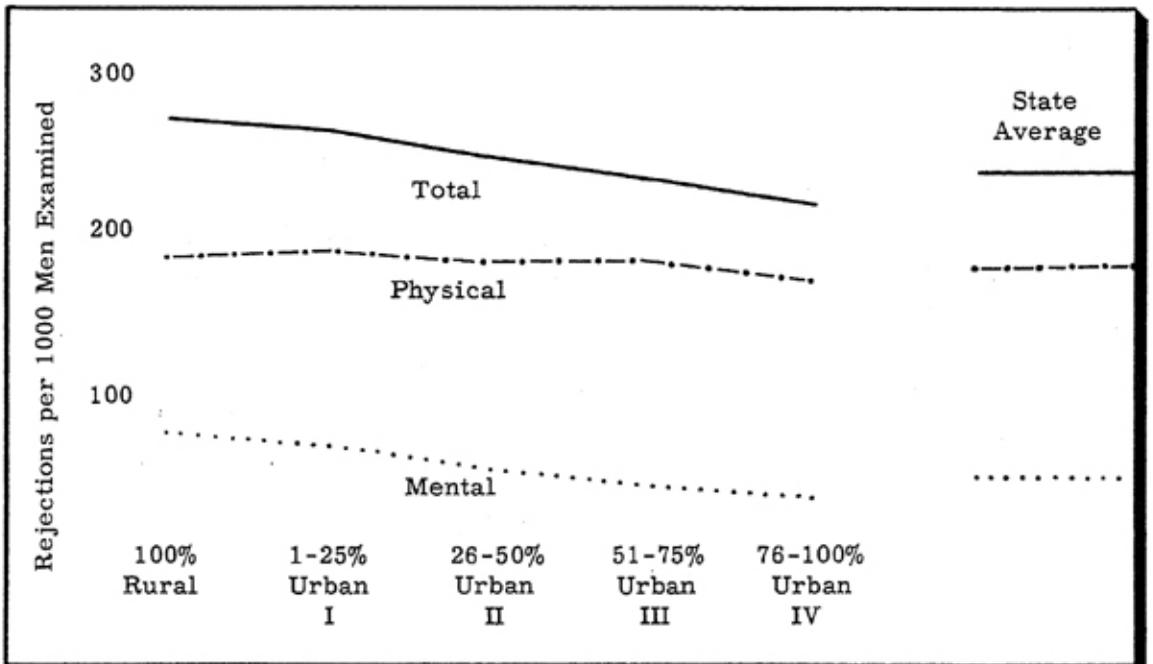


Fig. 4.—White rejection rates for groups of counties with specified percentages of urban population, 1940.

mental deficiency, the differences are still sufficiently large to indicate that educational deficiency as a cause of rejection decreased as the percentage of urban population increased.

This analysis indicates that rejection rates were highest in the rural counties and tended to decrease as the degree of urbanization increased. However, this trend is based upon a comparison of rural counties with urban counties, and does not take into account differences within cities. In Kansas City and St. Louis local boards corresponded to the political wards within the city. When rejection rates were computed for political wards within the cities, it was found that there was a wide variation in rates from the slum areas of the city to the "best" residential sections. While there was the apparent tendency for rates to decrease from the rural counties through Class IV urban group of counties, there were wards within large cities that had higher rates than the rural counties, as well as wards having lower rates. In other words, the poorer sections of cities, so-called areas of disorganization, had higher rates than rural counties. The low urban rates were the result of the quite low rates in the best residential sections which reduced the average rate for the entire city.

### C. Conclusion

The analysis of rural and urban rejection rates within the rural social areas shows that for total rejection and mental rejections the rural rate tended to be higher than the urban. It is also significant to note that both rural and urban rates were lowest in Area A and increased as the indices for these areas decreased. The analysis of the effect of the degree of urbanization shows that there was a tendency for rural rates to be the highest, and for rejection rates to decrease as the percentage of urban population increased. However, it is to be remembered that there are sections within large cities that had rejection rates above those for the rural counties.

## IV. IMPLICATIONS

1. The analysis of rejection rates has demonstrated that there are rural and urban differences, and that these rates are related to certain indices of social and economic conditions. These differences and relationships indicate some important points of emphasis for Missouri and the rural population. Since the differences in rejection rates between the rural social areas were, for the most part, statistically significant, it may be said that the physical and mental condition of the people as measured by these rates may be added to the indices already available in the Lively and Gregory study. In other words, the ecology of the rural social areas in Missouri as developed by Lively and Gregory includes not only social and economic factors, but also the measures of physical and mental health included in this study.

2. Comparison of rejection rates for the rural and urban counties within the rural social areas indicated two tendencies. In the first place, rural rates in most areas were higher than the urban for total rejections and for mental

causes. The significance of this difference is discussed in connection with the degree of urbanization. In the second place, both the rural and urban rates increased as the level of living decreased from Area A through Area E. This suggests that the rural social areas may well serve as an ecological frame of reference for the study of urban communities in Missouri.

3. The index used for measuring the degree of urbanization was based upon the distinction made by the Federal Census between rural and urban areas. It was found that rejection rates tended to decrease as the percentage of urban population in counties increased. However, it was found that the low-income areas within large cities had rates higher than those for the rural counties.

Comparison of rejection rates within cities with the rates for the rural counties suggests that the level of living may be a significant factor. This would seem to be the explanation for the decreasing rejection rates as the degree of urbanization increased. Areas A and F had the highest indices for level of living and the lowest rejection rates, while Area B, with a level of living below Area A, had rejection rates higher than A. All of the counties in the Class IV urban group are in Areas A and F. All of the counties in the Class III urban group are in Area B except Cape Girardeau and Greene counties. This means that Classes III and IV of urban counties, which have low rejection rates, are in rural social areas A, B, and F which also have low rejection rates.

This analysis also raises a question as to the validity of rural and urban differences in mental illness as indicated in other studies. It has been suggested many times that one explanation of the low rural rates for mental illness might be under-enumeration of mental patients in rural areas. The mental rejection rates reported in this study are undoubtedly an understatement of the incidence of psychiatric defects. The rates indicate that mental rejections in rural counties and in counties having a low percentage of urban population were more frequent than in counties having a high percentage of urban population. However, it may be that a greater proportion of urban rejectees with psychiatric defects was rejected for physical reasons than was the case with rural rejectees. Although it was not within the province of this study to determine the standards used in examining men, it is possible that ability to adjust to urban situations was the criterion applied to rural as well as to urban men. If this be true, then the rates may signify inability to adjust to urban conditions and do not necessarily indicate maladjustment to rural conditions.

4. This study has demonstrated that the problem areas for health programs are similar to those indicated in other studies. A program for the state, formulated in terms of the rural social areas, would need to give particular attention to health conditions in Areas D and E. Programs designed for large cities would need to give attention to the slum areas and those areas having a high proportion of Negroes in the population. This study also shows that more attention needs to be given to health programs in rural areas throughout

the state. Numerous factors produced the high rejection rates in rural areas, and, while this study does not attempt to explain all of these factors, it clearly demonstrates that rural areas are in need of programs for health improvement.

5. Not only is there a need for attention to be given to physical diseases and defects, but, according to the indications of this study, health programs in the future should give more consideration to mental health than has been the case in the past. Mental causes constituted 23.6 per cent of all rejections for whites and 29.5 per cent of all Negro rejections. While rejections for educational and mental deficiency were significant in making these rates so high, rates for psychoneuroses and psychoses accounted for 15.4 per cent of all white and 14.2 per cent of all Negro rejections. It must be remembered that these rates are probably lower than the actual incidence of psychiatric defects.

6. Rejections for educational and mental deficiency were based upon the results of intelligence tests given to the persons examined for military service, and it may be assumed that they are a fairly reliable index. The rate for Missouri was 23.6 per 1,000 men examined, 20.3 for whites and 58.9 for Negroes. Although some of these were rejected for mental deficiency, rates are sufficiently high to create concern about the educational programs in Missouri. This study indicates two phases of such programs that need special attention. It has been demonstrated that rejections for educational and mental deficiency were higher in rural areas than in urban areas. This means that educational plans for rural Missouri need to be examined to determine in what way this situation can be remedied. Secondly, Negro education in Missouri needs to be strengthened since Negro rejections for educational and mental deficiency were approximately three times as high as those of the white race.

7. Approximately every fourth man between 18 and 37 years of age examined in Missouri from the beginning of Selective Service until September 15, 1943, was rejected, and every fourth 4F was rejected for a mental cause. Missouri's participation in World War II was only 75 per cent of her potential manpower for military service. In rural social Area A, 80 per cent were accepted, while in Area E only 64 per cent were accepted. While 75 per cent of all whites examined in Missouri were accepted, only 63 per cent of all Negroes were accepted.

A nation's agricultural and industrial efficiency and the welfare of its society depend upon the physical and mental health of its people. Rejection rates indicate that disease and defects cannot be ignored by a society attempting to achieve a high degree of well-being for its citizens. Also, the fact that the rates analyzed in this study are for persons disqualified for military service is a reminder that as long as national security must be based upon ability to make war, it is essential that such disqualifications be reduced to the lowest possible number.

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