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SEPARATION OF PLACE OF WORK FROM PLACE OF RESIDENCE IN THE CITY OF CHICAGO

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I must beg forgiveness for including only my own name as the author on the title page of this thesis. My only excuse is that the University of Chicago requires that all persons receiving degrees be in residence. My wife, Mildred, not only is responsible for all the maps which appear in this thesis, but she is in large part responsible for its very completion. She has been incentive, housewife, sounding board, cartographer, and most excellent companion. She has tolerated, night after night, the sight of the back of my neck as I sat at my desk. For her patience, I wish to express here my sincerest thanks.

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CHAPTER I

BACKGROUND OF THE PROBLEM

Historical Review

In response to a variety of social, physical, and historical forces, certain parts of the city become the commercial, the industrial, and the residential areas. "Garden cities" grow up at the city's periphery, industrial districts arise, the central business district becomes the commercial center. As the city grows, the transportation arteries tend to delineate its paths of growth, and residences move outward from the city center along these lines. The distance from workplace to place of residence increases for many inhabitants, and persons at the edge of the city spend a relatively greater proportion of their time in traveling to work than do many persons within the city.

In the rural, predominantly agricultural society, there was no such separation of residence from the workplace. The concept was unknown. Residence and workplace were synonomous--compared with the modern, industrial city there was no journey to work, and no journey home. People worked close to where they lived, and the entire family participated in the production of goods.

Prior to the modern American factory system of production, several stages of different productive techniques were passed through in a relatively slow but persistent succession of changes.

In Europe from the 11th to the 13th centuries, the fore-runner to our present unions controlled production in a rigid manner. These associations of craftsmen, the "guilds," provided a careful control on the quality as well as the quantity of production, largely through the use of a very strong apprentice program. The work was done in the home or shops of the craftsmen, who also initiated all work and sold his product in the town markets of the day. Eventually, the merchants began to take a hand in the determination of the types of goods to be produced. The "middle-man" was born and guilds began to decline in power.

The "putting-out" system gradually came into being--a means of production now controlled by the merchant rather than the artisan. Raw materials were brought to the home of the workers by the merchants, who also agreed to take the finished product. The production still remained in the home, but was controlled by persons outside of the home. The craftsman had thus become an employee. As the pressure increased for greater production at lower costs, other members of the family were pressed into service; hand operated and hand powered machines were developed and used in the home.

> . . . the social structure, the statuses and roles, the reciprocal rights and duties among persons in the productive process had shifted from independent artisanship to an economy largely beyond the control of the individual workman. . . . Of the older handicraft production there remained only production (1) under the worker's own roof (which he might also rent from the landlord-merchant) and (2) at a time and rate subject to the worker's discretion, but subject also to the reality of hunger if he were slow or dilatory.[1]

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[1]Wilbert E. Moore, Industrial Relations and the Social Order (New York: Macmillan Company, 1947), p. 21.

Over a period of several centuries, the point of initiation of production had shifted from the worker to the merchant, but the place of production still remained the home of the worker.

Toward the end of the 18th century, the modern factory system began to evolve. With the development of a wider market making for greater demand for goods, and with larger power-driven labor-saving machinery being developed, centralized places of production became necessary. Thus, the final shift of the place of production was made to the factory. Most factories tended to establish themselves close to a source of raw material, sources of power, markets and transportation facilities. While it also was recognized that a large supply of labor was necessary, the mobility of the labor force was counted on to a large degree, and persons seeking employment were expected to come to the place where the employment was available. This movement of population to working places became one of the factors in the development of cities in the 19th century.. Thus, it is pointed out by Weber:

> The ever-present problem is so to distribute and organize the masses of men that they can render such services as favor the maintenance of the nation and thereby accomplish their own preservation. Population follows the line of least resistance in its distribution, and will consequently be affected by changes in the methods of production. When the industrial organization demands the presence of laborers in particular localities in order to increase its efficiency, laborers will be found there; the means of attraction will have been "better living"--in other words, an appeal to the motive of self-interest. Economic forces are therefore the principal cause of concentration of population in cities.[1]

Specialization grew apace. Both the workers and the factories became specialized to a high degree. This specializa-

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[1]Adna Ferrin Weber, The Growth of Cities in the Nineteenth Century (New York: Macmillan Company, 1899), pp. 157-158.

tion and its concomitant division of labor indicated that persons who became relatively fixed in space because of home location, had to travel farther to work. As geographic areas also became specialized, this travel distance became more important for greater numbers of persons.

It is with great wonder that one may now stand at one corner of a street intersection in a large central business district of a large city--for instance, the corner of State and Madison Streets in Chicago--and watch the constant inflow and outflow of persons. As one stands at the subway entrance on this corner, one finds a constant hurrying of persons into the loop, not only to come to work, but also transients, persons merely passing through the loop on the way to their work in another part of the city. One research student reports that on a weekday in June, 1946, 950,009 persons entered the central business district of Chicago (the loop), and 869,607 persons left the central business district between the hours of 7:00 A.M. and 7:00 P.M. During this same time, 173,171 vehicles entered and 163,359 vehicles left the central business district.[1] The workers who ride the public transport lines cross paths with a hurrying populace, some work-bound, and others home-bound. Persons living on the north side of the city come to work on the south side, while south-siders cross the city to the north side to work, and others come to work in the loop from all parts of the city.

Despite the economists' assumption of free spacial

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[1] Gerald William Breese, The Daytime Population of the Central Business District of Chicago (Chicago: University of Chicago Press, 1949), pp. 114-115.

mobility, persons are not entirely free to change their geographical position at will--to move to another, more desirable, labor market area whenever they desire. With conditions of "seniority rights" becoming prevalent, a worker has an investment in a job which increases with time.

> Property ownership, for example, especially the ownership of residences and real estate, is a potent source of immobility. The worker who has invested his savings in a home of his own has also given hostage to fortune (or at least to society). He has a stake in remaining at his place of residence and employment as long as possible, despite the pull of greater opportunity elsewhere. Likewise, residential and regional preferences, familistic and similar bonds, and the difficulty (real or imagined) of starting as a stranger in a strange land serve to reduce the casual wanderings of a mobile laborer sensitive to slight differentials in opportunity.
>
> Add to these limiting factors the expense of mobility, the frequently overcrowded residential conditions in expanding industrial communities, difficulties in the education of children, and so on, and the assumption of free geographical mobility loses its force.[1]

With geographical mobility being restricted, we find that patterns develop in the city; patterns of industrial location, of residential location, and patterns of intra-urban daily movement of populations. The question naturally arises: what is the relationship between these patterns? Does the relationship itself also exhibit a pattern? In the following pages an attempt will be made to point out the ways to finding answers to these questions.

The Location of Industry

How do certain areas attract industry and commercial and manufacturing establishments? When an industrial organization

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[1] Weber, op. cit., pp. 219-220.

determines its future location, what are the criteria employed in reaching this decision? How is one location selected rather than another? The answers to these questions are, of course, many and varying, with each having implications for the distribution of workplaces and residences in the city. While it is not within the scope of this paper to make a complete analysis of the theory of industrial location, a general understanding of the locational factors are of course necessary in an analysis of this sort.

It ought to be first pointed out that there is probably no location theory which can explain the distribution of economic activity at the present time in any large urban area such as the City of Chicago. The analysis must be largely a descriptive one, due to the multitude of causative factors which have in the past influenced the placement of industry--one of them being "historical accident." Professor Alfred Weber points out:

> The kind of industrial location which we have today is not entirely explained by the "pure" rules of location, and therefore is not purely "economic." It results to large extent rather from very definite central aspects of modern capitalism and is a function of modern capitalism which might disappear with it. It results, we may say in hinting at the main point, from degrading labor to a commodity bought today and sold tomorrow, and from the ensuing laws determining the labor market (Gesetze der "Arbeitsmarktgestaltung") and from the local 'agglomeration of workers' created thereby. This agglomeration of workers produces by necessity the particular kind of industrial aggregations which we find today and which I shall call 'progressive agglomeration of industry' (Stufenagglomeration der Industrie). Therefrom results . . . the phenomenon of modern aggregations of populations and, of course, many other things.[1]

While pure theory is not sufficient to explain the location of

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[1] Carl Joachim Friedrich, ed., Alfred Weber's Theory of the Location of Industry (Chicago: University of Chicago Press, 1929), pp. 12-13.

industry, there nevertheless are certain forces which are operative in a minimal way, and which serve to influence the decision to locate in one place rather than in another.

Mining and agricultural activity, for instance, cannot operate except where the natural resources for such operations are available. For this reason, the location of the resources is the determining locational factor, and the labor supply necessary for the operation is attracted to the site by erecting homes for them, providing shopping places, etc.

When a retail shopping center is opened, its location is determined by the present or expected future size or type of the clientele inhabiting the area into which the establishment moves. This is probably the most important consideration in the selection of a site for most service and retail trade establishments.

Certain agglomerations of industry result from the geographic centralization of industries about the pre-existing transport facilities which are necessary for the movement of both raw materials and finished products, as well as the movement of the labor force. The transport facilities may be either water routes, railroad lines, or suitable roadways. In certain urban centers these various means of transport tend to cluster together. In Chicago, the main terminals of the many railroad lines are to be found at the periphery of the central business district with lead-in lines found running along the Chicago river.

Dennison, however, is one who would discount the importance of the transportation factor, and he says:

> Transport costs of materials are no longer so important an element as was formerly the case; where accessibility of raw materials is considered to be important, it will usually be for reasons other than cost of transport. As a locational factor, where it is important, the element is thus usually of a different character; it allows a wider choice of locations, and is a function of industrial structure and existing location rather than of the geographical distribution of primary raw materials.
>
> The second factor to be considered is the location of the market. . . . That the market exerts an attractive force is shown by the general movement of manufacture in the United States (which) has been shown generally to have followed the movement of a 'centre of population' westward.[1]

Dennison later suggests that it perhaps ought to be the government's function to take up entire Garden Cities having no industry and move them to locations close to industrial plants. He does, however, question "whether the possible absorption of some part of these unemployed is sufficient to outweigh the amount of individual human misery which would be created by such compulsory uprooting."[2]

Other writers have recently begun to advocate the movement of industrial plants to various locations from their present one so as to decentralize industry in the event of national emergency. While this plan has been proposed by several persons, there is as yet little concensus as to the degree of decentralization necessary, and what is more important for the purpose here, little agreement on how these moved industries shall be staffed. From where shall their labor force come? Do these proposals also envisage a decentralization of population? This is still in the

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[1] Stanley Raymond Dennison, The Location of Industry and the Depressed Areas (London: Oxford University Press, 1939), pp. 61-62.

[2] Ibid., p. 62.

speculative stage, however, and so we shall not be particularly concerned here with this aspect of the problem.

In 1902, Frederick S. Hall,[1] writing for the United States Bureau of the Census, pointed out that there are six general advantages which lead to the centralization of industries. These same six reasons are the bases on which locational decisions are made. These six reasons may be summarized as:

1. Nearness to raw material
2. Nearness to the market
3. Waterpower source nearby
4. A favorable climate
5. A supply of labor
6. Capital available for investment in manufacture[2]

These are in a sense a summary of the foregoing discussion and a resumé of what other writers on the subject have suggested. Of these, Weber has also said:

> . . . the cost of transportation, of labor, and rent are general factors, since they should be considered in the case of every industry. . . . On the other hand, the perishibility of raw materials, the influence of the degree of humidity of the air upon the manufacturing process . . . are special locational factors, because they concern particular industries only.[3]

These factors vary in importance, and over time. Hoover, in his criticism of Weber, says:

> Concentration of industry need not take place merely at locations of cheap labor; it may occur at a source of materials, at a strategically located distributing point, or at a

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[1] U. S. Bureau of the Census, Twelfth Census of the United States, 1900 Census Bulletin No. 244 (Washington: Government Printing Office, August 25, 1902).

[2] Ibid., p. 23. [3] Weber, op. cit., p. 20.

> site with any sort of advantage in production costs. . . . Some factors are important for some industries and at some times, others for other industries and at other times.[1]

Thus, the empirical fact of location must be regarded within the locational theory, and care must be taken not to submerge it completely. All of these above named factors have meaning for the distribution of residences in relation to the workplaces, and must be seen in such a light. As industries tend to respond more to certain locational factors than to others, the residential distribution of their workers will be influenced. If, for instance, an industry becomes more centralized in the central business district, those persons living at the edge of the city, or in the suburbs of the city, will find it necessary to travel farther to work. Conversely, as some industries become more decentralized, the persons living near the center of the city will have to travel farther, as will those workers living on the opposite side of the city. It may be seen that as each locational factor attracts industries to certain parts of the city, the total separation of place of work from place of residence is affected--either increasing or decreasing the separation, depending upon the industry location.

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[1]Edgar M. Hoover, Jr., Location Theory and the Shoe and Leather Industries (Cambridge: Harvard University Press, 1937), p. 90.

CHAPTER II

PREVIOUS STUDIES OF THE PROBLEM

Introduction

City planners, public officials, and others have long spoken of the need for a planned city by saying that "a man ought to be near his work." This value judgment implies a need for objective data concerning this problem, yet there has been little done in this area thus far. Most of the work concerning the separation of place of work from residence has been done in places outside of the United States. A fairly complete review of the literature will be here attempted so as to draw together descriptions of completed research in the field.

Foremost among countries interested in the collection and analysis of these kinds of data has been England, where the official 1921 census collected these data for the first time for that country.[1] The General Report of this census pointed out that:

> The increasing divorce between residence and workplace has called for reconsideration of the areal basis of some census statistics. While it is relevant to present the working population in its occupational capacity as part of the resident population of which it constitutes the bread-winning element, an industrial tabulation by area of residence will clearly give a distorted picture of the industrial map. Hence, in presenting the industrial classification of the

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[1] Great Britain Census Office, Census of England and Wales, 1921 (London: His Majesty's Stationery Office, 1927).

> people, its local distribution was based not upon the area of enumeration but upon that of workplace, the man-power of the several industries being thus shown in relation to the local seats of the industries themselves.[1]

While this procedure has not yet been adopted by the United States Bureau of the census in its decenial censuses, the statistics of the Census of Manufactures are published in this manner. Unfortunately, the U. S. Census of Manufactures does not publish the number of persons employed in small areas of the city (census tracts or community areas) because of legal restrictions which forbid the disclosure of information for individual plants in the tabulation and publication of the data. These data have therefore in the past simply been published in the nature of a summary for the city as a whole.[2] It is hoped that in the future, the Census of Manufactures and the Census of Business will publish the number of persons employed in small areas of the city for certain classes of industry.

Data and Surveys on Place of Residence and Place of Work

Following is a resumé of the work which has been done in this field. Field studies, censuses, and surveys are here reviewed. The studies are here arranged chronologically.

German Census of 1900.[3] In this census, all of Germany

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[1] Ibid., General Report, Part XI, "Workplaces," p. 190.

[2] The Chicago Community Inventory, under the direction of Prof. Philip M. Hauser is now arranging for the special tabulation from the 1948 Census of Business of the geographic distribution of retail trade in Chicago. This will present for the first time in Chicago the number of persons employed in retail trade in each of the seventy-five community areas of Chicago.

[3] The following discussions of the German and Swiss censuses (German census of 1900, Swiss census of 1910, and survey of

was canvassed, and people were asked where they worked, without regard to the type of work being performed. The purpose here was simply to get a measure of the movement of the working population. On the basis of this census, tables were prepared indicating the inflow and outflow of workers for all incorporated places. This inquiry was repeated at the following census in Germany. This German census of 1900 appears to be the first time the question "where do you work " was asked on any large scale.

Swiss Census of 1910.[1] Here the emphasis was placed on marital conditions of the daily traveller, because social services for these workers and their families had to be provided at their place of residence, while the areas in which they worked were relieved of this financial burden.

Report of the Traction and Subway Commission in the City of Chicago in 1916.[2] This was a report on a "unified system of surface, elevated, and subway lines" submitted to the mayor of the city by this commission in 1916. A survey was conducted which covered industrial and commercial establishments in the city employing one hundred or more persons, plus the "occupants of the principle office buildings." There were some 350,000 wage earners covered by this survey, with 115,085 of these persons employed in the loop area. These statistics may be compared with

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the Industrial Region of Central Germany, 1929) are based on the resumé in Kate Liepmann, The Journey to Work (London: Oxford University Press, 1944), pp. 111-116.

[1] Ibid., pp. 112-113.

[2] Chicago Traction and Subway Commission, Report of the Chicago Traction and Subway Commission (Chicago: Rand McNally and Company, 1916).

the 1,231,434 persons returned in the 1920 census of population as being gainfully occupied.[1]

Maps were prepared for this report indicating the place of residence of persons employed by certain large individual firms, and by geographic areas. The results of this study showed:

> . . . that about 24 percent of these workers live within one mile of their places of employment and are assumed to be walkers; 18.6 percent live between one and two miles; 12.7 percent between two and three miles; and 12.7 percent between three and four miles. The total of 44 percent living between one and four miles are classified as probably surface car riders. These with the walkers total 68 percent. The remaining persons, about 32 percent, live more than four miles from their places of employment and should be and are classified as rapid transit riders. . . . The average distance travelled by all riders in the groups is 4.23 miles.[2]

Census of England and Wales, 1921. In this census, each occupied person was asked for the address of his place of work. The main table of this series of statistics carried the following descriptions of workplace in the head of the table: (1) workplace in the area, (2) no fixed workplace, (3) workplace not stated, (4) workplace outside the area, and (5) the numbers working within the area but enumerated elsewhere.[3] Comparisons were then made between day populations and night populations for given areas, with measures of net inflow or outflow. One of the many interesting statistics in this census indicated that the increase of population during the day for the City of London was 3,085.7

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[1] Ernest W. Burgess and Charles Newcomb, Census Data of the City of Chicago, 1920 (Chicago: University of Chicago Press, 1931), Table 35, p. 50.

[2] Chicago Traction and Subway Commission, op. cit., p. 237.

[3] Great Britain Census Office, op. cit., p. 192. The "areas" for which these statistics are published are identified in Appendix C, p. 208, as: "Counties, County Boroughs, and Urban and Rural Places."

per cent greater than the night population of the city, rising from 13,709 persons during the night to 436,721 during the day.[1]

The Merseyside Area of England, 1921. This was a study of the daily movement of workers in Merseyside, England, based on the census returns of 1921.[2] In this small study, the "interchange of workers" between the four boroughs of the Merseyside area was investigated. These four boroughs, Liverpool, Bootle, Birkenhead, and Wallasey together made up the Merseyside area with a population of 1,115,813 persons. The census returns indicated that during the day 21,073 persons leave this area for employment elsewhere, while 37,407 persons come to Merseyside to work. This gives a "net excess over the night population amounting to 16,334 persons. And the aggregate (daily) movement of workers out of and into these boroughs amounts to 58,480 persons."[3] In addition to this movement, there was an inter-borough movement of 48,554 persons each day.[4] Each of the four boroughs were then discussed in terms of the net inflow and outflow of workers, as well as the movement of workers within the same borough. A table was made up for each borough which includes: (1) enumerated night population, (2) workers leaving the city, (3) workers entering the city, and (4) net daytime increase.

Special Investigation in the Industrial Region of Central Germany, 1929.[5] This area of rapid industrial development was

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[1] Ibid., Table XC, p. 193.

[2] W. Hewitt, Workplaces and Movement of Workers in the Merseyside Area (London: Hodder and Stoughton, Ltd., 1928).

[3] Ibid., p. 5. [4] Ibid., p. 6.

[5] Liepmann, op. cit., p. 116.

surveyed to find out from where the labor force was being drawn. They found that at least 10 per cent of all workers held jobs in urban places other than those in which they worked. The daily movements of workers were "fed by the rural populations and also by mobile inhabitants of all areas, including those which were themselves important workplaces."[1]

Real Property Inventory in Sixty-four Selected Cities in the United States, 1934. In this sample survey, the principal income worker in each interviewed family was asked how long it took him to get to work in minutes, and what the usual mode of transportation was.[2] Journeys to work of thirty minutes or more were made

> In 6 towns by under 10% of the principal earners.
> In 25 towns by 10-19% of the principal earners.
> In 26 towns by 20-29% of the principal earners.
> In 6 towns by 30% or more of the principal earners.
> (1 blank)[3]

The publication of these data on the duration of the journey to work indicated, to cite one example, that in 3 of the 5 boroughs of New York, 30 to 34 per cent of the principal earners had journeys of a whole hour or longer, and that in all of New York City, 25 per cent travelled a whole hour or more to work each day.[4]

Birmingham, England, 1937-1938. This was a sample survey

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[1] Ibid.

[2] U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce, Real Property Inventory, 1934 (Washington: Government Printing Office, 1934).

[3] As summarized in Liepmann, op. cit., p. 119.

[4] U. S. Dept. of Commerce, op. cit., Real Property Inventory of New York City, 1934, p. 8.

of 7,161 households--a sample of one in 35--conducted from September, 1937, to August, 1938, in Birmingham, England, a city of over 1,000,000 persons at the time of this study, and carried out by the Bournville Village Trust Research Department. Results were grouped by the thirty-four municipal wards within the city, and these again grouped into seven zones and three rings for analysis.[1] In each of the seven zones, the percent of persons working there, and the per cent of persons living there both expressed as a per cent of the total for the city, were published, and distances travelled were tabulated and published. Investigating the proportion of residents in a district who also work in that district, it was indicated that the ratio ranges from 58.2 per cent in the central district to 22.8 per cent in the north-western district.[2] This study also pointed out that 56.7 per cent of all wage earners in the city traveled less than two miles to work each day, while 10.6 per cent traveled four or more miles.[3] Of the principal wage earners, 12.2 per cent traveled four or more miles, while only 51.3 per cent traveled less than two miles.[4] In addition to these statistics, this study was also concerned with the cost of the daily journey to work, the time spent in travel, population changes in the city, and opinions the people of the city held concerning life in Birmingham.

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[1]Bournville Village Trust Research Department, When We Build Again (London: George Allen and Unwin, Ltd., 1941), pp. 124-125.

[2]Ibid., Plate VII between pages 64 and 65.

[3]Ibid., Table 24, p. 31. [4]Ibid., Table 23, p. 70.

The Journey to Work in London, England, During World War II. This was the investigation conducted by Kate Liepmann[1] with particular emphasis upon the social and economic costs of the daily journey, and with transportation facilities being investigated as an important part of the work. There were twenty-two separate firms which made up the bulk of the research material. Liepmann found that 70 per cent of the employees of these firms lived within thirty minutes of the plant employing them, while 10 per cent or more had a journey of at least one hour or more. Liepmann summarized the possible forms and implications of the several possibilities of the separation of workplace from place of residence. This summary is considered to be of sufficient import to be quoted here in its entirety:

> If attention is focused on the correlation between home and workplace, there appears four combinations of urban layout; with moderate compactness of building all of them can be justified by social, economic and technical considerations.
>
> (a) "Live in and work in," i.e., homes situated near workplaces in the centre of the town (some secondary earners may have to travel to work in other districts). The advantages are obvious, provided housing conditions are decent and access to the open country is easy.
>
> (b) "Live out and work in," i.e., severance of dormitories and exclusive workplaces. This is in line with the general tendency of a relaxation of bonds and of specialization in the ways of living, on the condition that the social machinery is adjusted to the dualism of places and that the building density is not too low.
>
> (c) "Live out and work out," i.e., satellite towns which provide employment for the bulk of their earning inhabitants. Such circumscribed urban units, developed on a plan of moderate compactness, would relieve the pressure and unwieldiness of the central town and yet enable the residents of the satellites to share the opportunities of the metropolis.
>
> A second pattern of living out and working out is the grouping of several dormitories within a convenient distance of a trading estate. Further experience and research will have to show what proportion of urban workers can find employment in such moderately sized industrial zones.

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[1] Liepmann, op. cit.

(d) "Live in and work out," i.e., a new form of urban development, originating from the location of factories on the fringes of the town, while employees continue to live in more or less central quarters. This tendency is in the initial stages, and it cannot yet be judged how far it will go. The people are kept in propinquity to each other and near the foci of social and cultural life; daily traveling gives them access to various outlying industrial zones.

Each of the four solutions meets different requirements of modern society. The object of town planning must be to blend these various types of layout in such a manner as will best serve the multifarious purposes of the community, and of the individuals and families of which the community is composed.[1]

We thus find that most of the research has been directed toward the collection of information concerned with transportation of workers--to and from their places of work. While this orientation may answer many of the practical questions which we might ask of the problems with which we are concerned, it does not throw sufficient light upon the symbiotic living together of various kinds of people in an urban setting, nor does it tell us how the structure of the city is influenced by the separation. Knowledge about the lines of transport are of course valuable in such investigations, but the problem ought to be approached on a sociological level, rather than on one which is essentially logistic.

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[1] Ibid., pp. 109-110.

CHAPTER III

THE DISTRIBUTION OF PLACE OF WORK AND PLACE OF RESIDENCE

The Problem

To investigate effectively the separation of workplace from place of residence, one of two methods may be employed. First, to discover what distance the journey to work represents for any one plant or office building, we need simply know the location of the residences of the persons employed in that plant or building.[1] Thus, for each person we need ask: "where do you live" and then have this information entered on a "spot" map or other such device. However, when the problem becomes one of studying the separation for an entire complex city, it takes on another dimension. For this second method, not only must we inquire as to the place of residence, but we must also know where the place of work is located. Instead of merely having to learn the residential pattern for that particular workplace, we now must obtain workplace and place of residence for each worker who either lives or works in the city and, to be complete, in the area surrounding the city. This then enables us to take any area in the city--census tracts or community areas, for instance--and

[1] Such a study is now being conducted by Mrs. Helene Conant as part of a master's thesis at the University of Chicago on the labor force of the Inland Steel Company of South Chicago.

for this area ascertain: (1) the number of persons who live in the area and also work there, (2) the number who live there, but work elsewhere (and where they work), and (3) the number who work there but live elsewhere (and where they live).

It is this second method which concerns us here. The entire city of Chicago is to be here investigated with reference to the complexion of the city in terms of the separation of place of work from place of residence. That is, the initial question with which we approach this subject is: what can we say about the various parts of the City of Chicago to effectively describe the nature of the distribution of both the workplaces in the city and the residential areas wherein the city's workers reside? What is the relationship between these distributions, and hence, what is the separation between them; what meaning does this have for the internal social and economic structure of the city?

To answer these questions properly, we ought to have such data as discussed above in the first paragraph of this chapter. Data on place or work and place of residence should be collected simultaneously for the same population. For each individual, we would then have this information from which a direct relationship could be ascertained. Unfortunately, the Bureau of the Census has never asked its respondents questions concerning their place of work, although the Bureau has long asked questions concerning the occupation of the respondent. For instance, the schedule used in the 1940 census of population (the census upon which the residential statistics used in this thesis are based) asked the following questions of all persons fourteen years of age and over:

Item 21. Was this person at work for pay or profit in private or non-emergency government work during the week of March 24-30?
Item 22. If not, was he at work on, or assigned to public emergency work during the week of March 24-30?
Item 23. (If No in cols. 21 and 22) Was this person seeking work?
Item 24. (If No in cols. 21 and 22) If not seeking work, did he have a job, business, etc.?
Item 25. (If No in cols. 21 thru 24) Indicate whether engaged in home housework, in school, unable to work, or other.
Item 26. (If Yes in col. 21) Number of hours worked during the week of March 24-30.
Item 27. (If Yes in cols. 22 or 23) Duration of unemployment up to March 30, 1940 in weeks.
(The next two items giving occupation and industry were asked of all persons returning Yes in columns 21, 22, 23, 24.)
Item 28. Occupation. Trade, profession, or particular work.
Item 29. Industry. Industry or business.[1]

Thus, while the Bureau of the Census asked, "What do you do," and "How much time do you spend at it," they have never asked "Where do you do it." While the Bureau has in the past considered this question for inclusion in its decenial population schedule, and will probably again consider it for the 1960 census of population, the chief drawback has been the monumental coding and tabulating job which at the present level of Census Bureau activity remains financially prohibitive. There is considerable competition among several questions for space on the population schedule of the Bureau of the Census, and the addition of such a question would mean the removal of some others.

If these data were available, a very direct measure of the separation would obviously be possible. We would know just

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[1] Taken from an illustrative example of the 1940 population schedule as found in: U.S. Bureau of the Census, Sixteenth Census of the United States: 1940 Population, III (Washington: Government Printing Office, 1943), 291.

what the separation was for any particular census tract, community area, city, metropolitan district, or even larger geographic area, and could order these areas using as criteria either degree of separation, or degree of industrialization or "residentialness." Since these data are not available, we must seek elsewhere for a means of addressing the problem. Fortunately, other data, which are amenable to this type of analysis, are available. While not presenting the direct measure which would be most desirable, they nevertheless are a means of determining in at least first approximation the nature and extent of the separation sufficient to permit the ordering of the areas of Chicago in a "residential versus industrial" context.

The Nature of the Research

The data to be used in this study represent the results of two different surveys, independent of each other in time and coverage. The data were collected in such a manner as to permit the two separate distributions to be drawn up--each telling us something about the social and economic structure of the City of Chicago. First, we have the information on number of persons by industry by place of residence. This is a special tabulation of the results of the sixteenth-decenial census of population.[1] This tabulation gives the number of persons by industrial affiliation for each of the seventy-five community areas of Chicago. Since it is a total enumeration of the working people residing in Chicago as of the week of March 24-30, 1940, it is as complete an enumeration as we can obtain.

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[1]For source, see Appendix A.

Secondly, we have the data on the number of persons working in the city, classified by industry,[1] and by location of workplace. These data are based on required employer reports made to the Illinois State Division of Placement and Unemployment Compensation as of September, 1947. This covers all firms in Chicago employing seventy-five or more persons, and therefore does not enumerate the entire working population found in the city. In considering the apparent incompleteness of these data as related to the problem at hand we must point out: (a) it is usually the larger plants which draw workers far from the location of the plant or office. The small foundry, or supermarket, with only 10 or 15 employees will most probably draw its employees from the surrounding neighborhood. However, when a plant requires, say, 85 skilled lathe operators, the probability is greater that this plant will have to look farther for its work force than the immediate neighborhood. Also, (b) we are interested in the larger plants and offices since it is their location which will present the greater force in both the movement and residential location of the city's workers. In addition, the larger plants are the less mobile plants, and must therefore be able to attract their workers from greater distances.

Despite the fact that the more direct measure of the separation (as discussed above) may not be determined on the basis of these kinds of data, another way of attacking the problem will be presented and used in this thesis, which may be called the "inferential method."

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[1] In the rest of this work, the word "industrial" will be used to mean "industrial, commercial, and manufacturing," unless otherwise indicated.

The per cent of the city's total employment found in each community area (distribution by place of work), and the per cent of the city's total employed residents of each community area (distribution of place of residence) was computed. This was done for the total of all industries as well as for each of nine industries[1] individually. The per cent distribution rather than the frequency distribution has been employed because of the extent of coverage of the place of work data. Since only those plants, offices, or stores employing seventy-five or more persons were required to return reports of numbers of employees, there is an incomplete coverage. There is complete coverage of place of residence data, however, and so as to treat these as comparable data, the distributions were expressed in terms of percentages.

These per cent distributions are given as part of Appendix C for total industry and for the nine selected industries. From these distributions we can see how industry is distributed over the city, as well as the way residences are distributed. We may note from these data the extent to which any of the given industries tend to have greater or less concentration in certain community areas. We may note, for instance, that the loop (community area number thirty-two) contains almost twenty-five per cent of all employment in the city, while such places as Dunning, Montclare, West Elsdon, Mount Greenwood, and

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[1] These nine industries are: Construction, Food, Printing and Publishing, Chemicals, Iron and Steel, Retail Trade, Eating and Drinking Places, Laundry and Cleaning and Dyeing, and Business Repairs and Services. See Appendix A for the means of selection of these industries.

Morgan Park (community areas 17, 18, 62, 74 and 75) each has no plant or office employing seventy-five or more persons. Thus, from these two basic distributions we may learn much concerning the industrial and residential configuration of the City of Chicago.

Total Industry

While each of the analyses of the nine industries under investigation must necessarily be concerned with the individual forces playing upon that particular industry, this analysis of total industry may be taken to be reflective of the city's total industrial structure. Professor Ernest W. Burgess, in his paper on the growth of the city,[1] points out:

> The typical processes of the expansion of the city can best be illustrated, perhaps, by a series of concentric circles, which may be numbered to designate both the successive zones of urban extension and the types of areas differentiated in the process of expansion.
>
> This chart[2] represents an ideal construction of the tendencies of any town or city to expand radially from its central business district . . . (in Chicago) the loop (I). Encircling the downtown area there is normally an area in transition, which is being invaded by business and light manufacture (II). A third area (III) is inhabited by the workers in industries who have escaped from the area of deterioration (II), but who desire to live within easy access of their work. Beyond this zone is the "residential area" (IV) of high class apartment buildings or of exclusive "restricted" districts of single family dwellings. Still farther, out beyond the city limits, is the commuter's zone--suburban areas or satelite cities--within a thirty to sixty minute ride of the central business district.
>
> This chart brings out clearly the main fact of expansion, namely, the tendency of each inner zone to extend its area by the invasion of the next outer zone.[3]

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[1] Ernest W. Burgess, "The Growth of the City: An Introduction to a Research Project," The City, ed. by Robert E. Park, Ernest W. Burgess, and Roderick D. McKenzie (Chicago: University of Chicago Press, 1925), pp. 47-62.

[2] See Figure 1. [3] Ibid., p. 50.

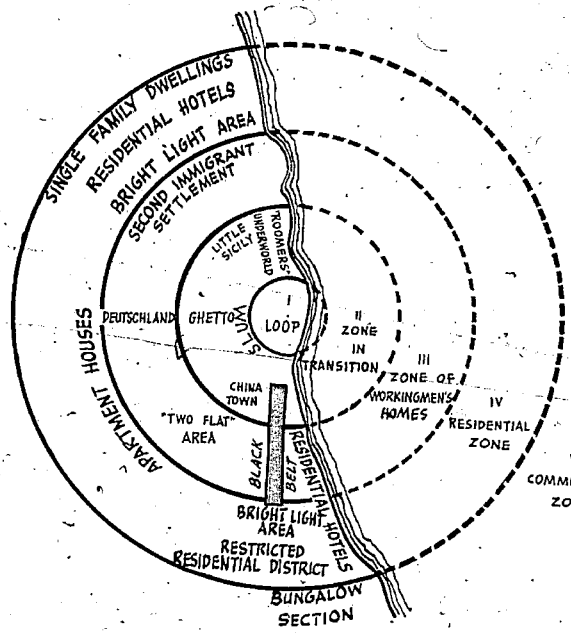

Fig. 1.--The Burgess Zonal Hypothesis of Urban Growth as Specifically Applied to Chicago

This ideal construct may be viewed in two ways--as a dynamic explanation of the growing city, or as a pinpointed view of the city at a given point in time. We must recognize, however, that each pinpointed view is only a photographic snapshot, so to speak, of the city's dynamic growth. Thus, the stock yards of Community Area 61 were built originally on what was then the edge of the city. It was constructed outside the city limits because of its noxious quality, but the city grew up around it over a period of time, encompassing it completely and finally extending its limits far beyond the stock yards. While the tendency is for noxious industry to locate at the periphery of the city, the tendency on the part of the city to grow outward in radial lines from the center means that these undesirable industries will be overtaken by the city--if not by the political city limits, then eventually by the population movement. To use this Burgess Zonal Hypothesis in reference to the data at hand, we must do so with respect to the static aspect of distribution.

Davie[1] has criticized the zonal hypothesis on the basis that it did not account for the distribution of industry in the city. Davie says:

> It is this factor of industrial and railroad utilization that was chiefly neglected in Burgess' study. Such use is by no means limited to any one zone, but depending on topography and other factors, may be found in any section of the city. Examination of scores of base maps of different cities fails to disclose any instance of industrial concentration within a concentric zone. Chicago itself is a case in point.[2]

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[1]Maurice R. Davie, "The Pattern of Urban Growth," Studies in the Science of Society, ed. by George Peter Murdock (New Haven: Yale University Press, 1937), pp. 133-161.

[2]Ibid., p. 159.

An examination of the spatial distribution of employment as represented in figure 2 serves to point out that while industry does not exactly follow the pattern of concentric zones, still this pattern does seem to generally describe the distribution well. The three community areas of heaviest concentration of industry are areas 8, 28, and 32 which respectively contain 11.3, 9.7, and 24.7 per cent of the total industry of the city, a total of 45.7 per cent for the three areas. These three areas are all approximately within the area described by Burgess as being the factory zone--the zone of transition. The only other area falling within the "heavily concentrated" group is community area 61 which has 4.7 per cent and is the location of the Chicago Stock Yards. Thus, over fifty per cent of all employment in the city is located in these four community areas.

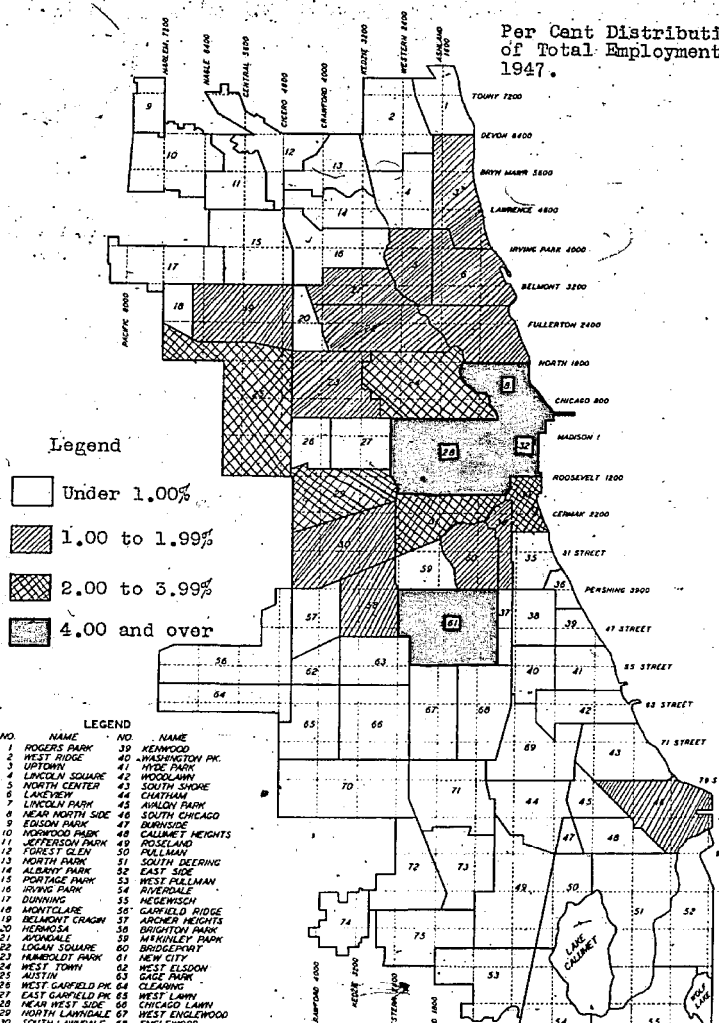
As we go outward from the center of the city to its periphery, we find the amount of industrial development decreasing. At the outer rim of the city, as we come to the suburban and residential areas, there is little industry, except for that part of the city directly west from the center, where we have the narrowest part of the city. If the data were available, it would be most desirable to examine the suburbs at this point to discover how well this generalization would hold.

If we examine the distribution of residences of employed persons in the city, we find a pattern rather different from the one presented by the distribution of employment. In examining figure 3, we find that the areas of heavier concentration of workers tends to be somewhat away from the central business

COMMUNITY AREAS OF CHICAGO

AS ADOPTED BY CENSUS BUREAU, 1940.

Per Cent Distribution of Total Employment, 1947.



LEGEND

NO.	NAME	NO.	NAME
1	ROGERS PARK	30	KENWOOD
2	WEST RIDGE	40	WASHINGTON PK.
3	UPTOWN	41	HYDE PARK
4	LINCOLN SQUARE	42	WOODLAWN
5	NORTH CENTER	43	SOUTH SHORE
6	LAKEVIEW	44	CHATHAM
7	LINCOLN PARK	45	AVALON PARK
8	NEAR NORTH SIDE	46	SOUTH CHICAGO
9	EDISON PARK	47	BURNSIDE
10	NORWOOD PARK	48	CALUMET HEIGHTS
11	JEFFERSON PARK	49	ROSELAND
12	FOREST GLEN	50	PULLMAN
13	NORTH PARK	51	SOUTH DEERING
14	ALBANY PARK	52	EAST SIDE
15	PORTAGE PARK	53	WEST PULLMAN
16	IRVING PARK	54	RIVERDALE
17	DUNNING	55	HEGEWISCH
18	MONTCLARE	56	GARFIELD RIDGE
19	BELMONT CRAGIN	57	ARCHER HEIGHTS
20	HERMOSA	58	BRIGHTON PARK
21	AVONDALE	59	MCKINLEY PARK
22	LOGAN SQUARE	60	BRIDGEPORT
23	HUMBOLDT PARK	61	NEW CITY
24	WEST TOWN	62	WEST ELSDON
25	AUSTIN	63	GAGE PARK
26	WEST GARFIELD PK.	64	CLEARING
27	EAST GARFIELD PK.	65	WEST LAWN
28	NEAR WEST SIDE	66	CHICAGO LAWN
29	NORTH LAWNDALE	67	WEST ENGLEWOOD
30	SOUTH LAWNDALE	68	ENGLEWOOD
31	LOWER WEST SIDE	69	GREATER GRAND CR.
32	LOOP	70	ASHBURN
33	NEAR SOUTH SIDE	71	AUBURN GRESHAM
34	ARMOUR SQUARE	72	BEVERLY
35	DOUGLAS	73	WASHINGTON HGTS.
36	OAKLAND	74	MOUNT GREENWOOD
37	FULLER PARK	75	MORGAN PARK
38	GRAND BLVD.		

Fig. 2.

district. The three community areas of heaviest concentration of workers residences are areas 3, 24, and 25, Uptown, West Town and Austin, which together contribute 13.9 per cent of the city's total labor force. Areas 3 and 25 would probably both fall within Burgess's zone III, the zone of Workingmen's homes, as would most of the other community areas falling within the 2.00-3.99 per cent class in figure 3. The third community area of heavy residential concentration, number 24, is found to be adjacent to the three areas of heaviest industrial concentration--areas 8, 28, and 32. As the suburban and fringe areas to the north and south of the center of the city are approached, we find a decreasing amount of worker's residences. This is in part a function of decreasing density of population as we leave the center of the city, but is also conditioned by the greater distance from the dominant city center, which further increases the separation of workplace from residence. In each of the distributions of employment and of residence, none of the three most intensively used residential areas are coincident with any of the three most heavily concentrated industrial areas--a further indication of the separation of workplace from residence.

The Individual Industries

If maps were prepared for each of the nine industries under consideration, using the same criteria as outlined above, we would discover largely the same patterns exhibiting themselves. The place of concentration of industry would be largely about the loop--the central business district, while the areas of residence would be found somewhat apart from those. Burgess'

COMMUNITY AREAS OF CHICAGO

AS ADOPTED BY CENSUS BUREAU, 1940.

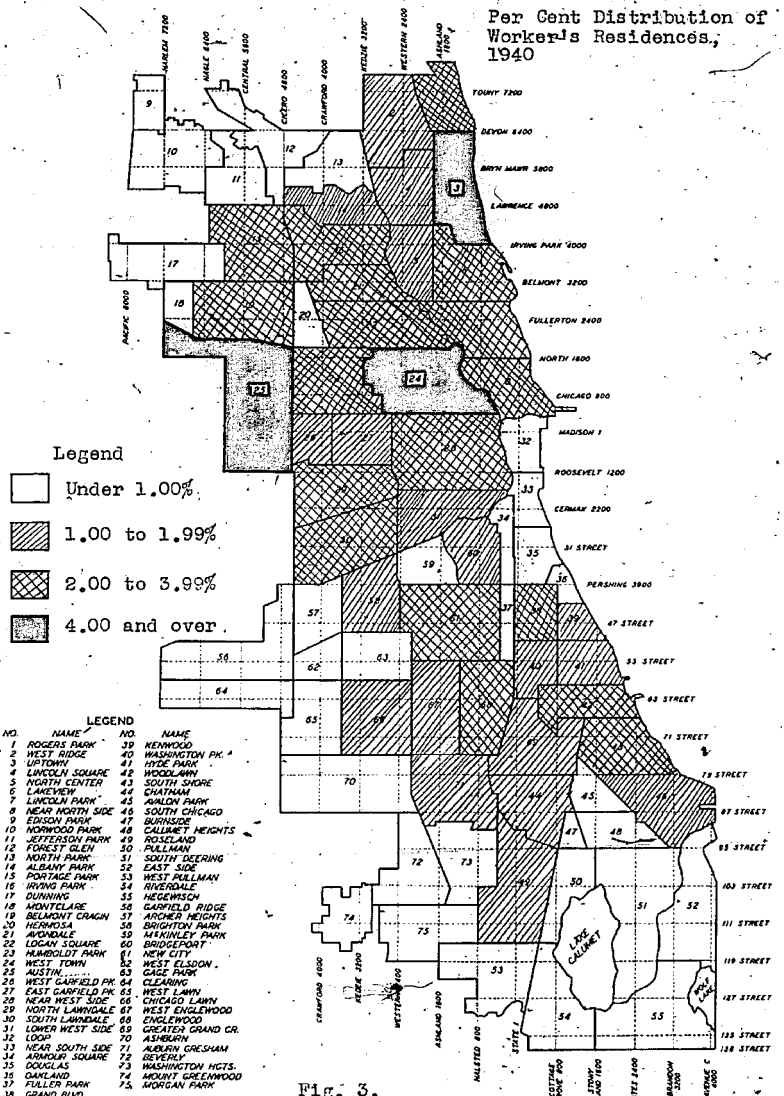


Fig. 3.

first zone--the zone of transition--would be filled in by the industrial functions, while most of the residential areas would fall outside of this zone of transition; they would be located in the zone of working men's homes and in the residential zone. While there would of course be some deviation from this ideal-typical pattern, still the concept of concentric zones could well subsume the data here being considered.

We can here construct a table to indicate the degree to which each of the nine industries follows the pattern as laid out by total industry (see above). For each industry, we have listed in this table the areas of greatest concentration of residence, that is, where there is four per cent or more of the total labor force of the city residing in that area, we have called it "concentrated." The criteria for classifying areas as employment areas is the same as for residences; that is, where there is four per cent or more of the total employment of the city located in that area. From Table 1 alone, we find a measure of the concentration of industry and residences. In the table, there are 3.66 work areas per industry, with 5.77 residential areas per industry. We may also note that in the case of almost every industry, there are few community areas which provide a large part of the city's workers in that industry as well as the places for them to work. What this means is that the people living in the city must travel some distance to and from the workplace each working day. This distance will vary considerably from a short walk to work, to a long automobile or train ride.

Evidence will be presented later in this paper to support

TABLE 1

AREAS HAVING 4.00 PER CENT OR MORE OF THE CITY'S TOTAL WORKING FORCE EITHER LIVING OR WORKING IN THE AREA

Industry	Areas with 4.00 Per Cent or More of the City's Working Residents	Areas with 4.00 Per Cent or More of the City's Total Employment
Total Industry.....	3, 24, 25	8, 28, 32
Construction.....	3, 6, 24, 25	8, 23, 28, 32, 61
Food.....	24, 61	6, 8, 25, 28, 58, 61
Business Repairs and Services.....	3, 6, 8, 25, 28	8, 28, 32, 33
Printing and Publishing...	3, 6, 25	6, 8, 19, 28, 32, 33, 34
Chemicals.....	24, 25, 60	8, 22, 24, 25, 29, 32, 54, 58, 60, 61
Iron and Steel.....	24, 46	25, 28, 46, 51, 52, 58
Retail Trade.....	3, 24, 25, 29	8, 28, 29, 32
Eating and Drinking Places	3, 6, 7, 8, 24, 28	8, 28, 32
Laundry and Cleaning and Dyeing.....	3, 6, 24, 38	3, 8, 22, 28, 33, 35, 49

the contention that the persons in the higher socio-economic classes are those who tend to travel farther to work than persons in the lower socio-economic groups. This may be explained by the differential mobility of individuals and plants and office buildings. Individuals and families may be responsive to the ecological processes presenting an outward force from the

center of the city, and it is the higher income groups which are better able to procure the better homes which are generally found in the newer built up areas in the suburbs. At the same time, plants and office buildings remain relatively fixed in space due to their greater dependence upon the central business district, or because of their greater investment in capital goods. Thus, while the lower income groups tend to remain closer to the center of the city, it is the higher income groups which are found in the periphery and away from the locations of industry and commerce.

CHAPTER IV

THE SEPARATION OF PLACE OF WORK FROM PLACE OF RESIDENCE

Thus far, we have focused our attention on the separate distributions of employment and residence in the city and have treated them apart. From this we may progress to the core of our investigation--the separation of workplace from place of residence. To proceed to this dimension of analysis from that already employed is another step which relates the two distributions already treated separately, and thereby develops a measure of the separation. By the use of the previously discussed geographic distributions of employment and residences, we may prepare an "index of separation." This index is a measure of the extent to which any one of the seventy-five community areas of Chicago may be classified as either a "work area," "residential area" or "mixed area." While any area could be classified as a work area simply on the basis of a concentration of industry in that area, still the area may have such a disproportionately large part of the city's residences located there as to overshadow the industry located there, and thus properly make the area "residential." It may be seen therefore, that the classification of the community areas is dependent upon more than the simple proportion it contains of either the city's employment or its residences--it depends upon the relationship between these proportions. By the

use of this relationship, a continuum of "residentialness-industrialness" may be established and the community areas ordered in this manner.

Given the percentage distributions of industry and residences, the index of separation is computed from them, as is indicated in Appendix C. This index of separation (S) measures the ratio of the percentage of employment in an area to the per cent of workers residing in that area, and is expressed in formula form as follows:

$$S_x = \frac{E_x}{R_x} \times 100$$

where:

S = Index of Separation of Place of Work from Place of Residence

x = Community Area

E = Per Cent of Total Employment in the Area

R = Per Cent of Total Working Residents in the Area

This separation index has been computed for total industry as well as for the nine selected industries here being analyzed. Appendix C contains the tables of separation indexes for all industries by the seventy-five community areas. These data have been used in the construction of a series of maps included as a part of this paper (see figures 4 to 7 and 9 to 14). These maps present the geographic concentration of industrial as well as residential location in the city and will be viewed here in terms of the separation of workplace from residence.

The data, upon which the maps are based, may be summarized here as follows:

TABLE 2

NUMBER OF COMMUNITY AREAS OF THE CITY OF CHICAGO CLASSIFIED AS WORK, MIXED, OR RESIDENTIAL, BY TOTAL INDUSTRY AND NINE SELECTED INDUSTRIES

Industry	Number of Work Areas	Number of Mixed Areas	Number of Residential Areas
Total Industry.....	13	24	38
Construction.....	7	12	56
Food.....	10	9	56
Business Repairs and Services.....	5	4	66
Printing and Publishing.	7	6	62
Chemicals.....	12	10	53
Iron and Steel.....	18	14	43
Retail Trade.....	9	9	57
Eating and Drinking Places.....	5	7	63
Laundry and Cleaning and Dyeing.....	17	12	46

In Table 2, we may note a measure of industrial concentration--those areas being more highly concentrated will have fewer work areas and mixed areas than will the less highly concentrated industries. On the basis of this criterion, we find the most highly concentrated industry is Business Repairs and Services while the most highly dispersed industry is Iron and Steel. We may ask, upon further inspection of this table, how is it that total industry exhibits fewer residential areas than all other industries? The answer to such a query lies in the fact

that while one area may be a work area for a given industry, it may very likely be a residential area for another industry. Community area nine is a work area for Business Repairs and Services, but is a residential area for all other industries. Area 38 is a work area for the Construction industry, but is residential for all other industries. Thus we may see that total industry subsumes all these differences and becomes the summary measure of the locational aspects of industry and residences.

While total industry may in a sense be a summary of the locational influences playing upon the individual industries, each separate industry still displays a distinct pattern of distribution of importance to any analysis we may make of the separation of workplace from residence. That is, it is obvious that the more highly concentrated industries will require their employees to travel greater distances to work by the very nature of the concentration. Those industries, for instance, which are chiefly located in just two or three community areas will still continue to draw their labor force from all parts of the city, and thus the persons who are widely distributed throughout the city must converge upon the geographically concentrated work place. Such an industry is Business Repairs and Services, which has only five areas which may be classified as "work areas," and four areas classified as "mixed areas," leaving sixty-six "residential areas." In other words, people must come from sixty-six other areas to the main places of work in this particular industry.

Distribution of Light and Heavy Industry

What are the important factors which differentially influence the location of the varying types of industries? While the general factors of location have been discussed earlier in this paper,[1] a more specific locational influence may be noted within this context of an industrial typology.

Concentration of Employment and Residences

It will be noted that the literature discussing the ecological processes of concentration and centralization assigns somewhat different meanings to these terms conceptually, which meanings are not consistent with each other. Quinn[2] defines concentration as "involving changes in the spatial distribution of units within a homogeneous area so that a progressively greater difference in numbers or density of population exists among its sub-parts."[3] Centralization, on the other hand, as contrasted with concentration, "involves the progressive increase of functions at the center of dominance of an integrated area." Gist and Halbert say that "if concentration indicates the grouping of population and institutions in a particular area without reference to the ecological patterns that emerge or the functions that are performed, centralization denotes the distributive pattern of population and institutions in the area of concentration and the processes whereby these patterns appear."[4]

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[1] See chap. I of this paper for a discussion of the factors of location.

[2] James A. Quinn, Human Ecology (New York: Prentice Hall, Inc., 1950).

[3] Ibid., p. 333. [4] Gist and Halbert, op. cit., p. 148.

Queen and Thomas define concentration as the "drawing of population into a given area," and centralization as "the assembling of people to work rather than to reside in a given area."[1] C. A. Dawson relates the concept of dominance to that of centralization. Dominance is the "outcome of the process of centralization," which indicates the concentration "of institutional units, and their complex integration . . . with reference to the center of dominance."[2] McKenzie gives his definition of concentration as the "tendency of an increasing number of persons to settle in a given area or region," while centralization is a "temporary form of concentration."[3]

It would appear that the above quoted authors would agree that concentration would mean the coming together of persons and institutions into a given area, while the concept of centralization would specify this concentration to be with respect to a dominant center. Thus, we may accept as a concensual definition that proposed by E. W. Burgess when he says that "concentration is the convergence to a center of population or any of its component parts" and that centralization is "the degree to which urban functions are located at the center of the community."[4]

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[1]Stuart Alfred Queen and Lewis Francis Thomas, The City (New York: McGraw Hill Book Co., Inc., 1939), p. 262.

[2]C. A. Dawson, "The Sources and Methods of Human Ecology," The Fields and Methods of Sociology, ed. by L. L. Bernard (New York: Farrar and Rinehart, 1934), pp. 294-296.

[3]Roderick D. McKenzie, "The Scope of Human Ecology," in E. W. Burgess, The Urban Community (Chicago: University of Chicago Press, 1926), pp. 172-177.

[4]From an unpublished sylabus for a course in "Human Ecology" given at the University of Chicago by Professor Ernest W. Burgess in the Spring Quarter, 1950.

We may note that concentration thus becomes a precondition for centralization. In order to have a dominant center of a community we must have a concentration of institutions and urban functions at that center. Thus, we may examine the hypothesis proposed concerning centralization of light industry by examining the concentration of light industry as opposed to the concentration of heavy industry. The two are intimately interwoven--even more so in the context in which we speak in this paper. Here, the very fact of concentration influences the separation of workplace from place of residence, and if there is any patterning at all presented by variation by type of industry, this variation is important for our purposes. To examine this variation by type of industry, let us examine the industries in a light versus heavy context to discover any association between type and concentration. Gist and Halbert[1] suggest that industries may be classified broadly as "light" and "heavy," and that:

> Available evidence indicates that heavy manufacturing industry is more highly decentralized than light manufacturing, which is frequently found around the edge of the central business district in what Burgess calls the zone of transition.[2]

This may be explained in part by the different requirements of light and heavy industry. In their analysis of the Regional Survey of New York and Its Environs, Gist and Halbert summarize these requirements. Heavy industry needs may be characterized as follows:

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[1] Noel P. Gist and L. A. Halbert, Urban Society (New York: Thomas Y. Crowell Company, 1946).

[2] Ibid., p. 163.

> (1) Comparatively large size, (2) time or service factor unimportant, (3) large ground area per person required, (4) nuisance features frequently present (odors, noise, fire hazards, and the like), (5) specialized buildings required, (6) serious problems of water disposal, and (7) large quantities of fuel or water required. Since it is probable that these characteristics are common to all parts of the country, it is not surprising, then, to find located on the outskirts of the city, or at least at a considerable distance from the central business district, such industries as meat-packing, petroleum-refining, smelting, automobile manufacturing and assembling plants, sugar refining, lumber mills, flour mills, and the like.[1]

Light industry, on the other hand, has the following needs:

> (1) No specialized type of buildings required, (2) time or service factor an important element, (3) specialized, unstandardized highly skilled work, (4) small ground area per worker required, (5) obsolete buildings suitable, (6) comparatively small scale, (7) close contact with the market required, (8) highly seasonal fluctuating labor force, and (1) importance of style factor. Such enterprises as garment making, printing, photoengraving, and the manufacturing of jewelry, candy, cigars, technical instruments, and cosmetics are usually located in fairly close proximity to the central business district.[2]

To investigate the hypothesis that heavy industry is more highly decentralized than light industry, as was identified by Gist and Halbert as having been proposed in the volume on the Regional Survey of New York and Its Environs,[3] we can select those industries which may be classified as "light" or "heavy" from the nine industries being analyzed in this paper, and these industries may then be compared, in a "concentrated-dispersed" context. On the basis of the criteria listed in the quotation above, we may select as "heavy" the Chemicals industry and the

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[1] Ibid. [2] Ibid.

[3] Regional Plan Association, Regional Survey of New York and Its Environs, Vol. I, Major Economic Factors in Metropolitan Growth and Arrangement (New York: Committee on Regional Plans of New York and Its Environs, 1928).

Iron and Steel industry. "Light" industries are the Food industry and the Printing and Publishing industry. On the basis of the suggested hypothesis, we would expect to find the Food and Printing and Publishing industries more highly concentrated than the Chemicals and the Iron and Steel industries.

From Table 2 we extract the following pertinent data:

TABLE 3

MEASURES OF THE CONCENTRATION OR DISPERSION OF SELECTED LIGHT AND HEAVY INDUSTRIES IN THE CITY OF CHICAGO*

Industry and Type	Total		Work Areas		Mixed Areas		Residential Areas	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Light.....	150	100.0	17	11.3	15	10.0	118	78.7
Food.....	75	100.0	10	13.3	9	12.0	56	74.7
Printing and Publishing...	75	100.0	7	9.3	6	8.0	62	82.7
Heavy.....	150	100.0	30	20.0	24	16.0	96	64.0
Chemicals.....	75	100.0	12	16.0	10	13.3	53	70.7
Iron and Steel.	75	100.0	18	24.0	14	18.7	43	57.3

* $.001 < P\ (X^2) < .01$

By setting up a four fold table on the basis of the information derived from Table 3, we can measure the existence and degree of association between number of residential areas and light industry. We would expect to find fewer residential areas associated with heavy industry. By computing a tetrachoric "r" as the measure of correlation, we would expect to find light industry positively correlated with residential areas.

TABLE 4

DISTRIBUTION OF THE COMMUNITY AREAS OF CHICAGO BY LIGHT AND HEAVY INDUSTRY AND BY RESIDENTIAL CLASSIFICATION, PREPARED FOR THE COMPUTATION OF THE TETRACHORIC CORRELATION COEFFICIENT*

Type of Industry	Number of Residential Areas	Number of Residential Areas	Total
Light.....	118 = .393	32 = .107	150 = .500
Heavy.....	96 = .320	54 = .180	150 = .500
Total.....	214 = .713	86 = .287	300 = 1.000

*Source: Table 3.

A computation of the Tetrachoric correlation coefficient, using the Tetrachoric "r" diagrams,[1] we derive a coefficient equal to .165, which indicates a relatively small degree of correlation, but a significant and positive correlation, nevertheless. On the basis of this small test, we find our hypothesis to be substantiated; light industry is more concentrated than heavy industry. This is admittedly a meager test of the hypothesis since we have but two industries in each of the classifications; however, it does present evidence in support of the suggestion.

In addition, we may examine the maps presenting the spatial distribution of work, mixed, and residential areas for each of the four industries being here considered. These are

[1] Leone Chesire, Milton Saffir, and L. L. Thurstone, Computing Diagrams for the Tetrachoric Correlation Coefficient (Chicago: University of Chicago Press, 1933).

figures 4, 5, 6, and 7. From these we may more easily note the geographic concentration of the light industries as opposed to the greater dispersion of the heavy industries. Obviously, the two extremes seem to be Printing and Publishing on the one hand, and Iron and Steel on the other. By comparing the light industries of Food (figure 6) and Printing and Publishing (figure 7) with the heavy industries, Iron and Steel (figure 4) and Chemicals (figure 5), we can directly note the greater number of work areas found in figures 4 and 5, the heavy industries.

Support for this proposition is also found in an unpublished master's thesis by Orenstein,[1] where an analysis of the industry of the metropolitan area of Chicago was made. He pointed out that Food and Printing and Publishing tended to be concentrated in the central part of the industrial area, while Iron and Steel and Chemicals tended to be found in the peripheral sections.

Differentials of Separation by Class

At the end of the preceding chapter it was pointed out that we might expect the longer journey to work to be taken by the persons in the higher socio-economic classes. This is explained in terms of the differential spatial mobility of lower and upper income groups. As the ecological process[2] of invasion

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[1] Frank E. Orenstein, "Industrial Decentralization in Metropolitan Areas of the Great Lakes and Ohio Valley Region" (Unpublished M. A. Thesis, Department of Sociology, University of Chicago, 1942), p. 125.

[2] For a discussion of these ecological processes, see Noel P. Gist and L. A. Halbert, op. cit., chap. VIII.

and succession are carried on, it is the wealthier persons who leave the center of the city, and move out to the periphery, thus leaving room at the center for the lower income groups. In the Burgess scheme of city growth (see figure 1), it is the outer ring which generally is of the higher socio-economic status. Albert J. Mayer,[1] in his study of the City of Chicago, pointed out that the higher socio-economic census tracts were those which bordered the city with the lowest socio-economic areas toward the center of the city. Approximately the same technique which Mayer used in his study to classify the 935 census tracts of Chicago was used in this thesis to classify the seventy-five community areas by socio-economic status (see Appendix B). An examination of this classification reveals that the higher socio-economic classes tend to be located near the edge of the city, while the lower groups may be found closer to the center of the city. Presented here is a listing of the seventy-five areas by socio-economic class:

TABLE 5

SOCIO-ECONOMIC CLASSIFICATION OF THE SEVENTY-FIVE COMMUNITY AREAS OF CHICAGO, 1940

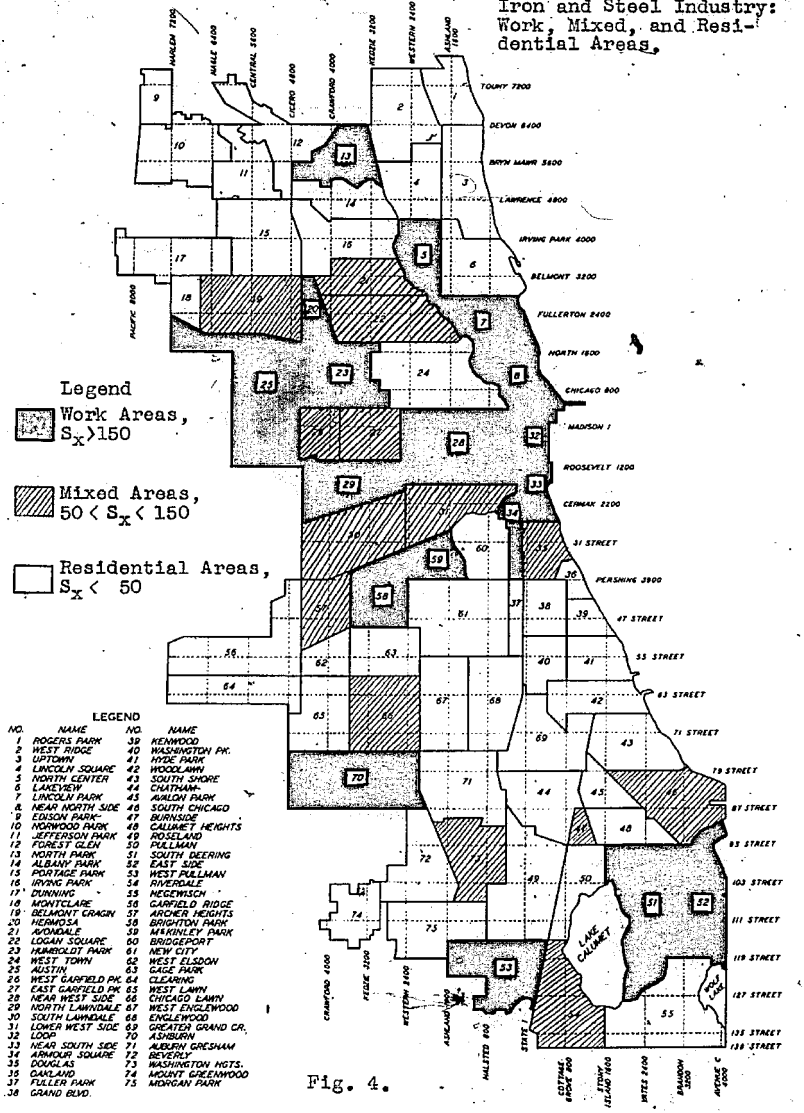
Socio-Economic Class	Number of Areas	Community Areas
I	13	1, 2, 3, 9, 12, 32, 41, 43, 44, 45, 71, 72, 73
II	16	4, 6, 10, 13, 14, 15, 16, 25, 26, 39, 42, 48, 66, 69, 70, 75
III	17	5, 7, 8, 11, 17, 18, 19, 20, 21, 27, 49, 52, 63, 64, 65, 67, 68
IV	18	22, 23, 28, 29, 30, 33, 35, 36, 38, 40, 46, 51, 53, 54, 59, 61, 62, 74
V	11	24, 31, 34, 37, 47, 50, 55, 56, 57, 58, 60

[1]Albert J. Mayer, "A Method for Determining Socio-Economic

COMMUNITY AREAS OF CHICAGO

AS ADOPTED BY CENSUS BUREAU. 1940.

Iron and Steel Industry: Work, Mixed, and Residential Areas.



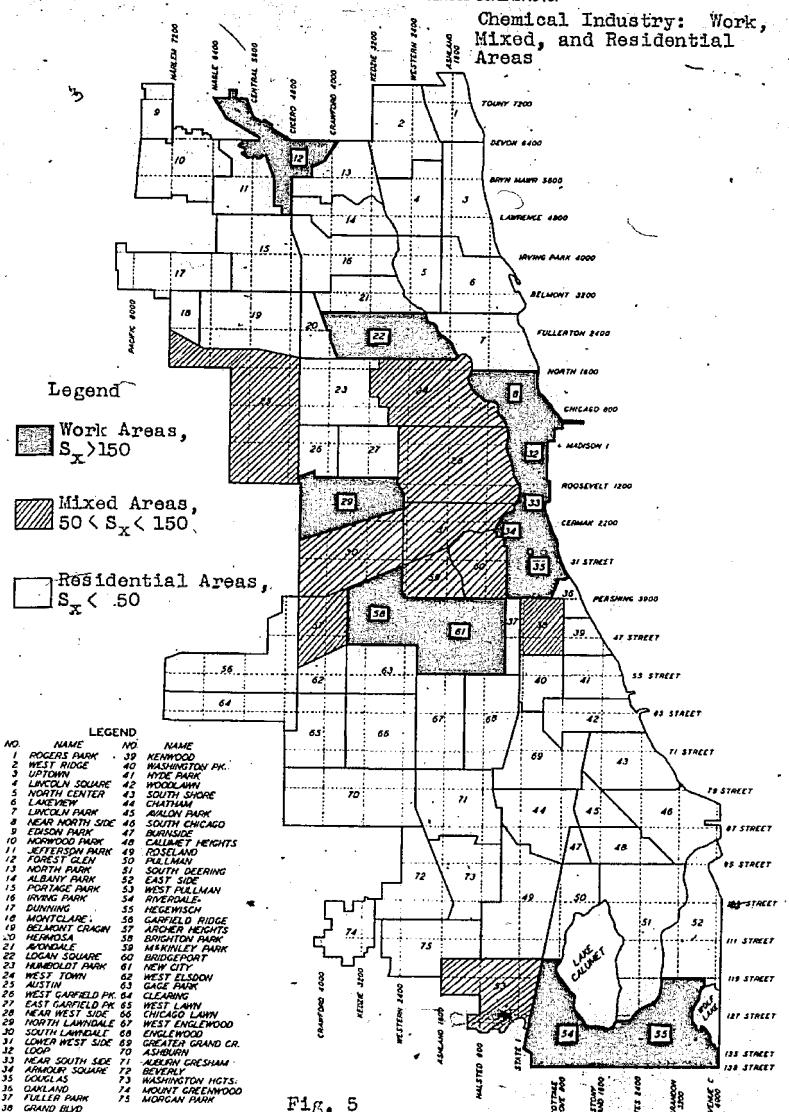
LEGEND

NO.	NAME	NO.	NAME
1	ROGERS PARK	39	KENWOOD
2	WEST RIDGE	40	WASHINGTON PK.
3	UPTOWN	41	HYDE PARK
4	LINCOLN SQUARE	42	WOODLAWN
5	NORTH CENTER	43	SOUTH SHORE
6	LAKEVIEW	44	CHATHAM
7	LINCOLN PARK	45	AVALON PARK
8	NEAR NORTH SIDE	46	SOUTH CHICAGO
9	EDISON PARK	47	BURNSIDE
10	NORWOOD PARK	48	CALUMET HEIGHTS
11	JEFFERSON PARK	49	ROSELAND
12	FOREST GLEN	50	PULLMAN
13	NORTH PARK	51	SOUTH DEERING
14	ALBANY PARK	52	EAST SIDE
15	PORTAGE PARK	53	WEST PULLMAN
16	IRVING PARK	54	RIVERDALE
17	DUNNING	55	HEGEWISCH
18	MONTCLARE	56	GARFIELD RIDGE
19	BELMONT CRAGIN	57	ARCHER HEIGHTS
20	HERMOSA	58	BRIGHTON PARK
21	AVONDALE	59	MCKINLEY PARK
22	LOGAN SQUARE	60	BRIDGEPORT
23	HUMBOLDT PARK	61	NEW CITY
24	WEST TOWN	62	WEST ELSDON
25	AUSTIN	63	GAGE PARK
26	WEST GARFIELD PK.	64	CLEARING
27	EAST GARFIELD PK.	65	WEST LAWN
28	NEAR WEST SIDE	66	CHICAGO LAWN
29	NORTH LAWNDALE	67	WEST ENGLEWOOD
30	SOUTH LAWNDALE	68	ENGLEWOOD
31	LOWER WEST SIDE	69	GREATER GRAND CR.
32	LOOP	70	ASHBURN
33	NEAR SOUTH SIDE	71	AUBURN GRESHAM
34	ARMOUR SQUARE	72	BEVERLY
35	DOUGLAS	73	WASHINGTON HGTS.
36	OAKLAND	74	MOUNT GREENWOOD
37	FULLER PARK	75	MORGAN PARK
38	GRAND BLVD.		

Fig. 4.

COMMUNITY AREAS OF CHICAGO

AS ADOPTED BY CENSUS BUREAU, 1940.



LEGEND

NO.	NAME	NO.	NAME
1	ROGERS PARK	39	KENWOOD
2	WEST RIDGE	40	WASHINGTON PK.
3	UPTOWN	41	HYDE PARK
4	LINCOLN SQUARE	42	WOODLAWN
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10	NORWOOD PARK	48	CALUMET HEIGHTS
11	JEFFERSON PARK	49	ROSELAND
12	FOREST GLEN	50	PULLMAN
13	NORTH PARK	51	SOUTH DEERING
14	ALBANY PARK	52	EAST SIDE
15	PORTAGE PARK	53	WEST PULLMAN
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19	BELMONT CRAGIN	57	ARCHER HEIGHTS
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21	AVONDALE	59	MCKINLEY PARK
22	LOGAN SQUARE	60	BRIDGEPORT
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24	WEST TOWN	62	WEST ELSDON
25	AUSTIN	63	GAGE PARK
26	WEST GARFIELD PK.	64	CLEARING
27	EAST GARFIELD PK.	65	WEST LAWN
28	NEAR WEST SIDE	66	CHICAGO LAWN
29	NORTH LAWNDALE	67	WEST ENGLEWOOD
30	SOUTH LAWNDALE	68	ENGLEWOOD
31	LOWER WEST SIDE	69	GREATER GRAND CR.
32	LOOP	70	ASHBURN
33	NEAR SOUTH SIDE	71	AUBURN GRESHAM
34	ARMOUR SQUARE	72	BEVERLY
35	DOUGLAS	73	WASHINGTON HGTS.
36	OAKLAND	74	MOUNT GREENWOOD
37	FULLER PARK	75	MORGAN PARK
38	GRAND BLVD		

Fig. 5

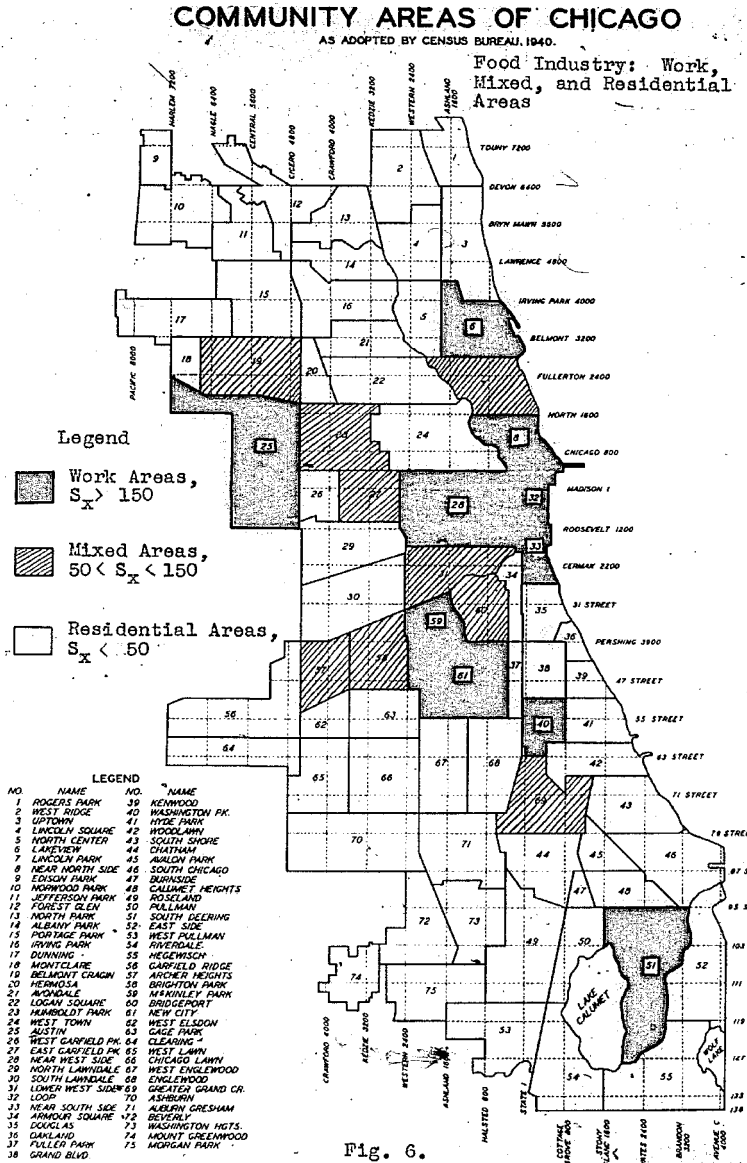
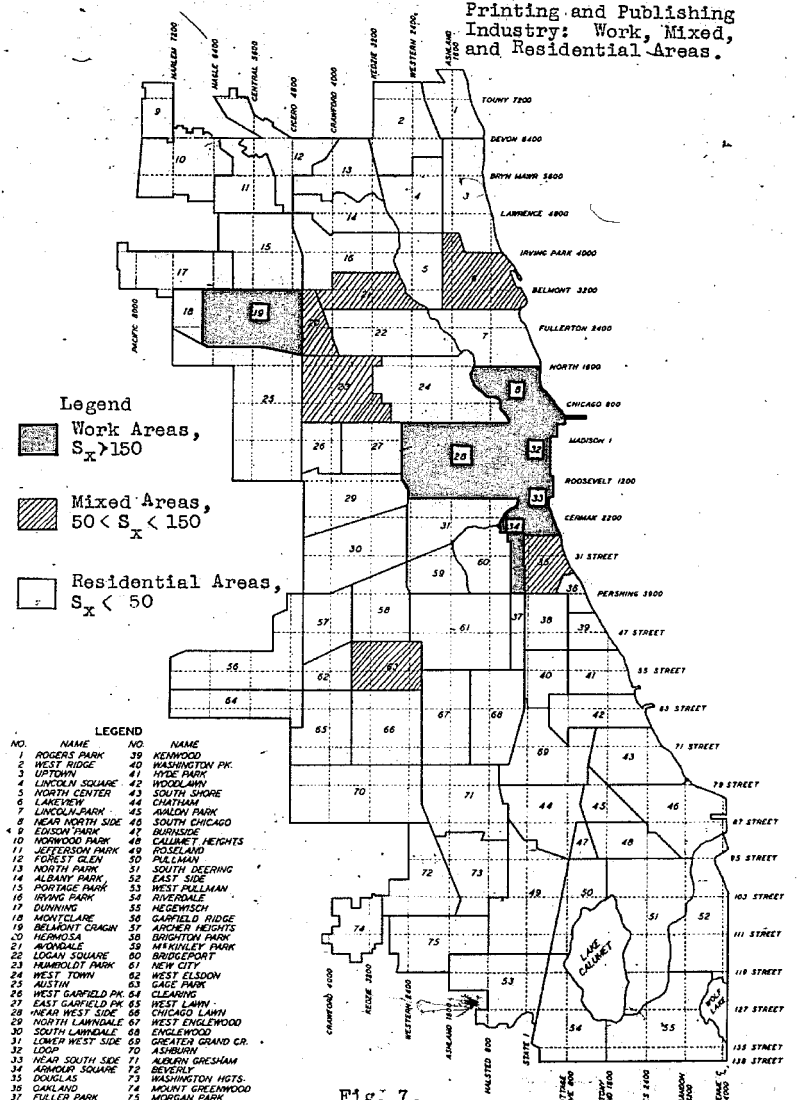

COMMUNITY AREAS OF CHICAGO
AS ADOPTED BY CENSUS BUREAU, 1940.
Food Industry: Work, Mixed, and Residential Areas
Legend
Work Areas, $S_x > 150$
Mixed Areas, $50 < S_x < 150$
Residential Areas, $S_x < 50$
LEGEND
NO. NAME
1 ROGERS PARK
2 WEST RIDGE
3 UPTOWN
4 LINCOLN SQUARE
5 NORTH CENTER
6 LAKEVIEW
7 LINCOLN PARK
8 NEAR NORTH SIDE
9 EDISON PARK
10 NORWOOD PARK
11 JEFFERSON PARK
12 FOREST GLEN
13 NORTH PARK
14 ALBANY PARK
15 PORTAGE PARK
16 IRVING PARK
17 DUNNING
18 MONTCLARE
19 BELMONT CRAGIN
20 HERMOSA
21 AVONDALE
22 LOGAN SQUARE
23 HUMBOLDT PARK
24 WEST TOWN
25 AUSTIN
26 WEST GARFIELD PK.
27 EAST GARFIELD PK.
28 NEAR WEST SIDE
29 NORTH LAWNDALE
30 SOUTH LAWNDALE
31 LOWER WEST SIDE
32 LOOP
33 NEAR SOUTH SIDE
34 ARMOUR SQUARE
35 DOUGLAS
36 OAKLAND
37 FULLER PARK
38 GRAND BLVD.
39 KENWOOD
40 WASHINGTON PK.
41 HYDE PARK
42 WOODLAWN
43 SOUTH SHORE
44 CHATHAM
45 AVALON PARK
46 SOUTH CHICAGO
47 BURNSIDE
48 CALUMET HEIGHTS
49 ROSELAND
50 PULLMAN
51 SOUTH DEERING
52 EAST SIDE
53 WEST PULLMAN
54 RIVERDALE
55 HEGEWISCH
56 GARFIELD RIDGE
57 ARCHER HEIGHTS
58 BRIGHTON PARK
59 MCKINLEY PARK
60 BRIDGEPORT
61 NEW CITY
62 WEST ELSDON
63 GAGE PARK
64 CLEARING
65 WEST LAWN
66 CHICAGO LAWN
67 WEST ENGLEWOOD
68 ENGLEWOOD
69 GREATER GRAND CR.
70 ASHBURN
71 AUBURN GRESHAM
72 BEVERLY
73 WASHINGTON HGTS.
74 MOUNT GREENWOOD
75 MORGAN PARK
HARLEM 7600
NAGLE 6400
CENTRAL 5600
CICERO 4800
CRAWFORD 4000
KEDZIE 3200
WESTERN 2400
ASHLAND 1600
TOUHY 7200
DEVON 6400
BRYN MAWR 5500
LAWRENCE 4800
IRVING PARK 4000
BELMONT 3200
FULLERTON 2400
NORTH 1600
CHICAGO 800
MADISON 1
ROOSEVELT 1200
CERMAK 2200
31 STREET
PERSHING 3900
47 STREET
55 STREET
63 STREET
71 STREET
79 STREET
87 STREET
95 STREET
103 STREET
111 STREET
119 STREET
127 STREET
135 STREET
PACIFIC 8000
CRAWFORD 4000
KEDZIE 3200
WESTERN 2400
ASHLAND 1600
HALSTED 800
STATE 1
LAKE MICH.
STONY ISLAND 1600
WITE 3100
BOARDMAN 3200
AVENUE C 4000
LAKE CALUMET
POR. CAN.

Fig. 6.

COMMUNITY AREAS OF CHICAGO

AS ADOPTED BY CENSUS BUREAU, 1940.

Printing and Publishing Industry: Work, Mixed, and Residential Areas.



Legend

Work Areas, $S_x > 150$

Mixed Areas, $50 < S_x < 150$

Residential Areas, $S_x < 50$

LEGEND

NO.	NAME	NO.	NAME
1	ROGERS PARK	39	KENWOOD
2	WEST RIDGE	40	WASHINGTON PK.
3	UPTOWN	41	HYDE PARK
4	LINCOLN SQUARE	42	WOODLAWN
5	NORTH CENTER	43	SOUTH SHORE
6	LAKEVIEW	44	CHATHAM
7	LINCOLN PARK	45	AVALON PARK
8	NEAR NORTH SIDE	46	SOUTH CHICAGO
9	EDISON PARK	47	BURNSIDE
10	NORWOOD PARK	48	CALUMET HEIGHTS
11	JEFFERSON PARK	49	ROSELAND
12	FOREST GLEN	50	PULLMAN
13	NORTH PARK	51	SOUTH DEERING
14	ALBANY PARK	52	EAST SIDE
15	PORTAGE PARK	53	WEST PULLMAN
16	IRVING PARK	54	RIVERDALE
17	DUNNING	55	HEGEWISCH
18	MONTCLARE	56	GARFIELD RIDGE
19	BELMONT CRAGIN	57	ARCHER HEIGHTS
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26	WEST GARFIELD PK.	64	CLEARING
27	EAST GARFIELD PK.	65	WEST LAWN
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30	SOUTH LAWNDALE	68	ENGLEWOOD
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32	LOOP	70	ASHBURN
33	NEAR SOUTH SIDE	71	AUBURN GRESHAM
34	ARMOUR SQUARE	72	BEVERLY
35	DOUGLAS	73	WASHINGTON HGTS.
36	OAKLAND	74	MOUNT GREENWOOD
37	FULLER PARK	75	MORGAN PARK
38	GRAND BLVD.		

Fig. 7.

This table may be contrasted with Table 6, which is a classification on the basis of the separation index. We therefore computed the mean socio-economic class for the industrial and residential areas (see Table 7) and examined the relationship between socio-economic status and industrial-residential classification. The large difference in computed means as indicated in Table 7, between the residential areas and (a) the work areas, (b) the mixed areas, and (c) the non-residential areas (which are the summation of the work plus the mixed areas) indicates a significantly different type of area being grouped under each area type. The standard error of the difference between the means was computed, and found to be equal to .3582 for the difference between Work and Residential. The Critical Ratio was then calculated and found to be equal to 3.84 standard deviation units between Work and Residential areas. Even at the .0001 level of significance, the difference was found to be statistically significant.

TABLE 6

INDUSTRIAL-RESIDENTIAL CLASSIFICATION OF THE SEVENTY-FIVE COMMUNITY AREAS OF CHICAGO BASED ON THE COMPUTED SEPARATION INDEX AS FOUND IN APPENDIX C

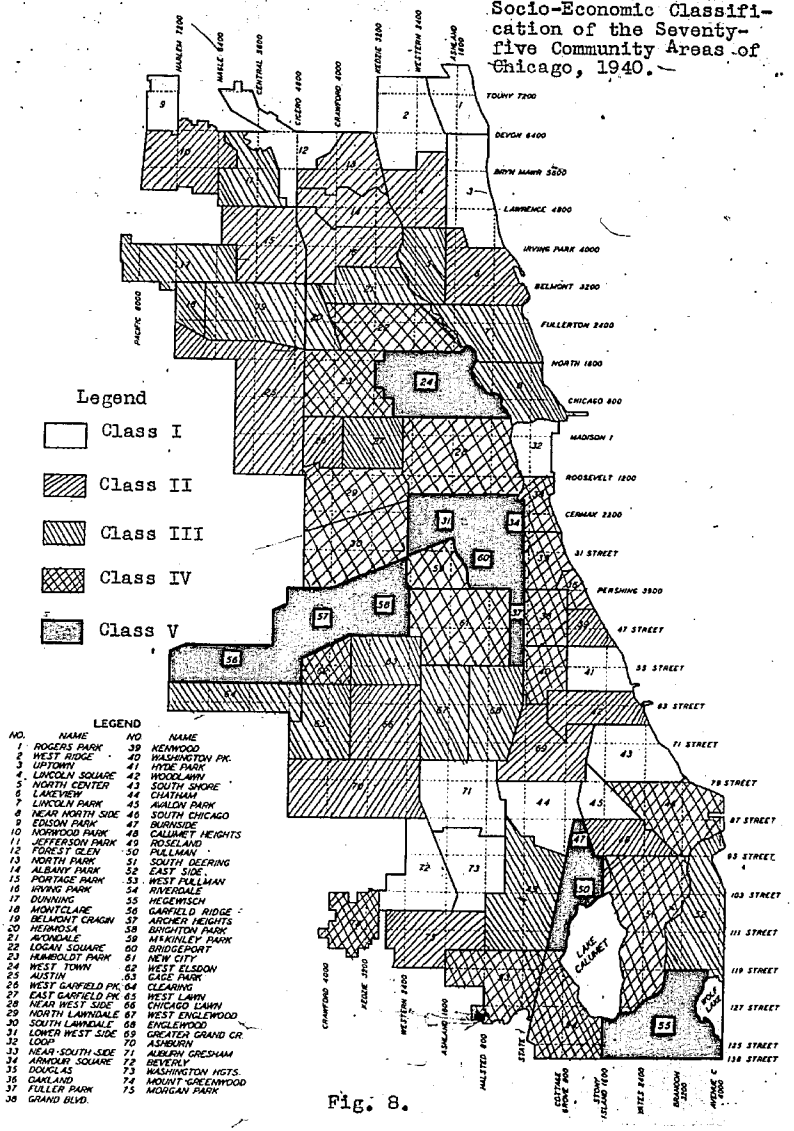
Class	Number of Areas	Community Areas
Work.....	13	8, 28, 32, 33, 34, 50, 51, 54, 56, 59, 61, 64, 70
Mixed....	24	5, 7, 12, 19, 20, 21, 22, 23, 25, 26, 29, 30, 31, 35, 37, 45, 46, 47, 52, 53, 55, 57, 58, 60
Residential..	38	1, 2, 3, 4, 6, 9, 10, 11, 13, 14, 15, 16, 17, 18, 24, 27, 36, 38, 39, 40, 41, 42, 43, 44, 48, 49, 62, 63, 65, 66, 67, 68, 69, 71, 72, 73, 74, 75

Areas in Census Tract Cities" (Unpublished M.A. Thesis, Dept. of Sociology, University of Chicago, 1948).

COMMUNITY AREAS OF CHICAGO

AS ADOPTED BY CENSUS BUREAU, 1940.

Socio-Economic Classification of the Seventy-five Community Areas of Chicago, 1940.



LEGEND

NO.	NAME	NO	NAME
1	ROGERS PARK	39	KENWOOD
2	WEST RIDGE	40	WASHINGTON PK.
3	UPTOWN	41	HYDE PARK
4	LINCOLN SQUARE	42	WOODLAWN
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10	NORWOOD PARK	48	CALUMET HEIGHTS
11	JEFFERSON PARK	49	ROSELAND
12	FOREST GLEN	50	PULLMAN
13	NORTH PARK	51	SOUTH DEERING
14	ALBANY PARK	52	EAST SIDE
15	PORTAGE PARK	53	WEST PULLMAN
16	IRVING PARK	54	RIVERDALE
17	DUNNING	55	HEGEWISCH
18	MONTCLARE	56	GARFIELD RIDGE
19	BELMONT CRAGIN	57	ARCHER HEIGHTS
20	HERMOSA	58	BRIGHTON PARK
21	AVONDALE	59	MCKINLEY PARK
22	LOGAN SQUARE	60	BRIDGEPORT
23	HUMBOLDT PARK	61	NEW CITY
24	WEST TOWN	62	WEST ELSDON
25	AUSTIN	63	GAGE PARK
26	WEST GARFIELD PK.	64	CLEARING
27	EAST GARFIELD PK.	65	WEST LAWN
28	NEAR WEST SIDE	66	CHICAGO LAWN
29	NORTH LAWNDALE	67	WEST ENGLEWOOD
30	SOUTH LAWNDALE	68	ENGLEWOOD
31	LOWER WEST SIDE	69	GREATER GRAND CR.
32	LOOP	70	ASHBURN
33	NEAR SOUTH SIDE	71	AUBURN GRESHAM
34	ARMOUR SQUARE	72	BEVERLY
35	DOUGLAS	73	WASHINGTON HGTS.
36	OAKLAND	74	MOUNT GREENWOOD
37	FULLER PARK	75	MORGAN PARK
38	GRAND BLVD.		

Fig. 8.

TABLE 7

MEAN SOCIO-ECONOMIC CLASS FOR EACH OF THE INDUSTRIAL-RESIDENTIAL CLASSES

Class	Number of Areas	Mean Socio-Economic Class	Standard Deviation of the Mean
Total.....	75	2.97	1.31
Work.....	13	3.69	1.14
Mixed.....	24	3.62	1.22
Non-Residential.....	37	3.65	1.19
Residential.....	38	2.32	1.08

While not a measure of all those factors determining the socio-economic status of an area in the city, this evaluation of the socio-economic status of the community areas of Chicago on the basis of the Mayer composite index does present an evaluation with respect to those factors employed in the determination of the composite index.[1] Thus, the differential socio-economic status is denoted in terms of: (1) per cent of population native white, (2) median school years completed, (3) per cent professional workers, and (4) median contract or estimated monthly rental. On the basis of these four indices, the residential areas were found to be of a significantly higher socio-economic class than the work areas.

We have found the residential areas to be of a significantly higher socio-economic class than the work areas. Since the residence areas are those in which a relatively small pro-

[1] See Appendix B.

portion of the total employment of the city is found, it follows that those persons residing in the residential areas probably must travel a greater distance to work than those persons residing in the work areas. Now, since these persons of the residential areas tend to be in a higher socio-economic class, it follows that higher socio-economic class persons tend to travel farther to work than persons of the lower socio-economic classes.

Other Social Characteristics

The work areas of the city tend to be the areas where the large force of unmarried males reside. A large portion of this force of unmarried males may be found in the Hobohemia described by Nels Anderson,[1] which, to some extent, coincides with the work areas in the center of the city. It is interesting to note, however, that the high proportion of unmarried males continues through all of the work areas, and is not contained only in the central business district. Inspection of Table 8 shows that a gradient constructed on the basis of the size of the unmarried male group may be detected when proceeding from work to mixed to residential areas. Both the sex ratio and the proportion of single persons is highest in the work areas and lowest in the residential areas. For the work areas, the range of the distribution of sex ratios is from a low of 102 to a high of 350, while in residential areas, the sex ratios vary from 79 to 107. Only four of the thirteen work areas have sex ratios less than the

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[1] Nels Anderson, The Hobo (Chicago: University of Chicago Press, 1923).

TABLE 8

COMPUTED MEANS OF SELECTED SOCIAL CHARACTERISTICS FOR WORK, MIXED AND RESIDENTIAL AREAS OF THE CITY OF CHICAGO, 1940*

Industrial-Residential Class	Mean Sex Ratio of Persons 15 Years Old and Over	Mean Per Cent of Population Over 15 Years Old Still Single
Total City.....	97.0	30.8
Work.....	129.7	35.89
Mixed.....	102.0	31.29
Residential.....	93.5	28.52

*Source: Louis Wirth and Eleanor H. Bernert, Local Community Fact Book of Chicago (Chicago: University of Chicago Press, 1949).

highest residential sex ratio of 107. In addition, while eleven of the thirteen work areas have a per cent of population over 15 years of age still single of greater than 30 per cent, with three of these being over 40 per cent, only ten of the thirty-eight residential areas have percentages as high as 30 per cent and none of 40 per cent or over. The means of both indices are higher for work areas than total city, and lower than total city for residential areas, as may be seen in Table 8. While this may in part be the result of the general ecological forces bringing a greater number of homeless males to the center of the city, it is interesting to note that wherever we find a work area, there we will also find a higher sex ratio and greater proportion single than the areas which surround the work area. This holds true at the edge of the city as well as at the center.

CHAPTER V

SUMMARY

As the large, modern urban centers of today have grown, so has grown the separation of workplace from place of residence. While persons in the rural, predominantly agricultural community generally lived close to their workplace and spent a relatively small proportion of their time in the journey to work, the modern urban dweller does not reside near his place of work. The growing cities, the concentration of population and institutions, the centralization of functions, increased specialization and division of labor, all served to separate the worker from his workplace. While industry responded to various locational forces playing upon it, the labor force became less mobile--rigidity of the occupational hierarchy, acquisition of property, and expense of mobility were pointed out as deterents to the free movement of workers. As certain types of industries tended to become more centralized, the workers who were concentrated at the edge of the city found themselves further separated from their workplace. Industrial decentralization also affects the separation; either increasing or decreasing the separation depending upon the pattern of industrial location.

Previous studies of the problem were surveyed, and were found to be largely the product of countries other than the United States. Most recent and complete was that of Kate

Liepmann in London, England. Most of these previous studies stemmed from a logistic interest in the movement of workers, and these studies were largely oriented toward the investigation of worker transportation and movement.

The distribution of employment and of workers residences for the City of Chicago was presented, and it was shown that the loop (community area 32) contains almost twenty-five per cent of all employment in the city, while Dunning, Montclare, West Elsdon, Mount Greenwood, and Morgan Park (community areas 17, 18, 62, 74, and 75) each has no plant or office building employing seventy-five or more persons. These distributions were then examined with reference to the Burgess Zonal Hypothesis, and it was pointed out that while industry as a whole tends to exhibit a pattern of concentration which is especially pronounced toward the center of the city, workers' residences tend to be concentrated in areas away from the center of the city.

A Separation Index was computed for each community area, and is an expression of the relationship between the per cent distribution of workers' residences and the per cent distribution of employment. The seventy-five community areas of the city were then classified as either work, mixed, or residential in character, with the Separation Index used as the measure. By the use of this classification, the separation of workplace from place of residence was then examined.

It was shown that there are class differentials in the separation of place of work from place of residence. Distance traveled increases with socio-economic status. The better homes

are found largely at the edge of the city and in the suburbs, and it was shown that the persons residing in these homes tend to be of a higher socio-economic class than those persons residing closer to the center of the city. Now, as industries are to a large extent centralized, or found close to the central business district, workers in these industries who come from these higher socio-economic class areas must travel a longer distance to work each morning, and home each evening.

Proponents of public housing plans have often suggested the construction of "relocation housing" in places far from the slum and blighted areas. This relocation would thus tend to increase the worker's distance from the workplace. Indeed, the concentration of low cost housing on a relatively few publically owned sites tends to bring persons of the lower socio-economic groups in large quantities to certain fixed places of residence. This, too, is a tendency toward the increased separation of workplace from residence.

It was further shown that the work areas contain a greater proportion of the single males of the city than do the other areas. While this may in part be the result of general ecological forces, it is interesting to note that wherever we find a work area, as identified by the criteria used in this paper, there we will also find a higher sex ratio and greater proportion of persons single than the areas which surround the work area. As has been indicated elsewhere,[1] the homeless, unmarried male may be identified with particular urban areas--it is they who come to

[1] Gist and Halbert, op. cit., pp. 216-217.

the city seeking employment and thus often settle in the areas closest to this employment. Since industry has in the past tended to locate along the main transport lines, especially the railroad lines, this too may partially explain the fact that these unmarried males may be found in the work areas, since the homeless wandering male also tends to follow the main transportation arteries.

Of the nine industries used for analysis in this paper, two (Iron and Steel and Chemicals) were identified as "heavy," and two (Food and Printing and Publishing) were identified as "light." A test for concentration of industry was devised and made, and it was shown that light industry tends to be more highly concentrated than does heavy industry. While heavy industry is more highly decentralized than light industry, it is reasonable to expect that it is the light industry which is the more mobile of the two, because of the nature of the differential industrial requirements. Thus, light industry can follow the movement of population outward to remain close to its labor supply, and to its market. However, it is the heavy industry which is more likely to be a stable base about which a community might grow. This is due to its less mobile character, and because of its need for a constant, large labor supply. While the heavy industry is decentralized, population concentration is also found at the periphery of the city near the heavy industry locations. As time goes on, with heavy industry remaining relatively immobile, population dispersion will tend to increase the separation of work place from residence, and will further increase the movement

of workers to their jobs. New concepts of city planning, however, may obviate this tendency. Planners are at present proposing varying devices for developing communities about an industrial site, so that people would remain close to their workplace. One author[1] has suggested an industrial site with residences so located as to permit workers to walk to their work at different levels--including special ramps at roof-top height.[2] Various other forms of the "city plan" are being proposed and some may come into being; how these will affect the economic and social structure of the population inhabiting the city will in large part depend upon the type of plan employed and the extent to which it is carried out.

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[1] An example of this kind of planning proposal may be found in Le Corbusier, Concerning Town Planning, translated by Clive Entwistle (New Haven: Yale University Press, 1948). See Especially the "Seventh Question," p. 79.

[2] Ibid., p. 81.

APPENDIX A

Reliability of the Data

The data for this thesis were collected by the Illinois State Division of Placement and Unemployment Compensation, and covers 30 different industries. These data were assembled to permit this state office to determine the optimum location for new offices of the division which were to serve the population of the City of Chicago. The city was broken down into nine areas for the purposes of their study, and per cent of employment by place of work, and per cent of workers by place of residence was determined for each of the nine areas. On the basis of these percentages, decisions were made as to office location.

While this information covers thirty different industries, not all of them have been analyzed in this thesis, because of the nature of the data. It is of importance to ask: May these data be relied upon, or are they simply a miscellaneous collection of discrete and unrelated information? May the two sets of data be compared, or must they be treated as independent and separate from each other? Do the two sources of the data measure the same class and kind of phenomena? What are the discrepancies?

First, we must note that both sets of the data have not been collected by the same agency. The residence data was collected by the U. S. Bureau of the Census, while the employment data comes to us from employer reports. We may therefore find

discrepancies between the two groups of data insofar as a definition of industrial affiliation is concerned. In the case of the place of residence information, it is often the wife of the head of the household who is interviewed by the Census Bureau enumerator, and often she is not really sure of the industry with which her husband is affiliated. Also, much of this information is gained from relatively uninformed neighbors, when the respondents cannot be found at home.

In addition to this difficulty, we are confronted with another--a time discrepancy. Since the place of residence data were gathered in the 16th decenial census of the United States in 1940, and the place of work data were gathered in 1947, we find that we have a seven year difference. While it would of course be most desirable to have these data for the same point in time (as well as collected by a single agency), they simply never have been collected that way. If this problem is to be attacked at all, it must be done with the available data.

The Community Area, which is used in this paper as the basic unit of analysis, is recognized to be of a somewhat arbitrary character. They are designed to be permanent areas for which census data are published, and represent serially numbered groupings of the smaller census tracts.

> These areas are based primarily on local trade areas. But some of the older and more established communities, e.g., Hyde Park, Woodlawn, Rogers Park and Austin, have developed an historical tradition of considerable importance. It will be noted that these communities have in most cases boundries formed by physical barriers, such as railroad embankments, the river, industrial property or parks and boulevards which work them off into fixed units. Within these boundaries

tend to develop "natural areas" or homogeneous economic and social units.[1]

These community areas in 1940 ranged in size from a low of 731 persons in Ashburn, community area 70, to a high of 169,924 persons in West Town, community area 24. Work areas, for instance, are about the same size as residential areas. Work areas range in size from 731 to 136,518 persons. For mixed areas, the range is from 3,567 to 132,107, and the residential areas range in size from 3,255 to 169,924 persons.[2] Despite this wide variability in size, the community area remains a relatively homogeneous and not too distorted unit of measure for this type of analysis.

Selection of Industries for Analysis

It was first recognized that no more complete tabulation of place of residence data is anywhere available, since this information comes to us as a special tabulation of the information gathered in the 16th decenial census. These data were accepted as being the more complete data. On the other hand, it was recognized also that industrial affiliation as reported by the housewife or relatively uninformed neighbors may vary considerably from the reports as prepared by the employer. That is, the question which we hope to answer by this approach is: Does the housewife or neighbor (as well as the respondent himself) and the employer return the same person as affiliated with the same industry? This question was answered by an investigation of the

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[1] Ernest W. Burgess and Charles Newcomb, Census Data of the City of Chicago, 1920 (Chicago: University of Chicago Press, 1931), p. 605.

[2] Wirth and Bernert, op. cit., Table A.

data. A compilation was made of summary statistics, for the industries being studied, gathered on the one hand from the census of population data (representing the reply of the respondent or the person replying for him), and on the other hand from the employer reports to the Census of Manufacture and the Census of Business. These are reproduced in Table 9. While the census of population publishes summary statistics for the industries being investigated by states, counties, and cities, this is not so for the other divisions of the census of 1940. Statistics, in addition to population, were also published for Manufacture, Service Establishments, Retail Trade, Wholesale Trade, and Construction. These all represent the parts of the Census of Manufacture and the Census of Business. Each of these gives data for large cities and for states, but county statistics are only published for retail trade, wholesale trade, and manufactures.

It was felt desirable to compare statistics for an area somewhat larger than the City of Chicago to place on a sounder footing the geographic basis of comparability. Thus was chosen the New Standard Metropolitan Area, which consists of Cook, DuPage, Kane, Lake and Will counties in Illinois and Lake County, Indiana, and is geographically synonomous to the Industrial Area of Chicago, by which statistics on manufacture are published. This larger area was felt to be more reflective of the true situation in regard to the separation of place of work from place of residence because of the inter-county daily movement of workers in some industries, for example, the Iron and Steel industry, which is located in the southern part of Chicago, and in Lake

County, Indiana. However, as noted above, these data were not available for the six counties for all industries. Where the data were not available, the comparison was made by use of statistics for the City of Chicago, which are available for both kinds of data, as may be seen in Table 9.

Some industries have no statistics listed in the Census of Business publications, and therefore were eliminated from consideration. These are indicated by the symbol "f" in the body of Table 9.

Relative reliability in reporting was the chief criterion established for the selection of industries to be analyzed. This was taken to mean that an industry was considered stable where the number of persons returned by the Census of Population by industrial affiliation was approximately the same number as that returned by the Census of Business and the Census of Manufactures as reported by the employers themselves. After the summary of statistics was compiled, the Censuses of Manufactures and Business were expressed as a percentage of the Census of Population (see Table 9, column 6). As a standard of measure, a difference of ten per cent from the Census of Population (which was used as the base) was considered to be the maximum deviation allowable. These percentages of column 6 were used to measure the relative stability in reporting and as may be seen in Table 9, ranged from as close a percentage as 100.7 per cent for the Printing and Publishing industry, to 60.3 per cent for the Automobile industry and 156.5 per cent for Wholesale Trade. Of the industries to be analyzed for this thesis, all those having a discrepancy figure

of ten per cent or more from the Census of Population base of 100 per cent were rejected, with those under ten per cent being retained. For this group of thirteen industries with a discrepancy figure of less than ten per cent (an allowable range of 90 to 110 per cent), the total employment for 1947 and the total residence for 1940 for the City of Chicago was listed in columns 7 and 8 and a second criterion of size was established. Industries with less than 15,000 persons living or working in the city were eliminated, because of the small number of workers that these smaller industries would exhibit in each community area. This then left us with nine industries to be used in the analysis. These nine industries are:

1. Construction
2. Food
3. Printing and Publishing
4. Chemicals
5. Iron and Steel
6. Retail Trade
7. Eating and Drinking Places
8. Laundry and Cleaning and Dyeing
9. Business Repairs and Services.

TABLE 9

FIGURES REPORTED IN THE CENSUS OF POPULATION OF 1940 AS COMPARED WITH THOSE REPORTED BY THE EMPLOYER IN THE CENSUS OF MANUFACTURES AND THE CENSUS OF BUSINESS FOR 1940

Industries (1)	1940 Census of Population		1940 Censuses of Manufactures and Business		Census of Manufactures and Business (cols. 4 and 5) expressed as a percentage of Census of Population (Cols. 2,.3)	Totals of Employment and Residence for All Industries Having Less Than 10 Per Cent Discrepancy as of Column 6	
	Metropolitan Area[a] (2)	Chicago City[b] (3)	Metropolitan Area[c] (4)	Chicago City (5)		Residence (7)	Employment (8)
Construction.....	.....	52,067	.....	48,375[d]	92.9%	52,098	24,334
Food Manufacturing.....	85,002	.....	92,977	.....	109.4	71,111	87,429
Textile Apparel.....	47,499	.....	58,985	.....	124.2	.....	.....
Furniture and Fixtures..	26,926	.....	29,660	.....	110.2	.....	.....
Paper and Allied Products	17,381	.....	16,082	.....	92.5	13,260	15,177
Printing and Publishing.	65,588	.....	64,032	.....	100.7	49,869	58,240
Chemicals.....	25,013	.....	23,808	.....	95.2	17,145	16,276
Products of Petroleum and Coal.....	15,436	.....	14,344	.....	92.9	4,485	726
Leather and Leather Products.....	13,023	.....	16,226	.....	124.6	.....	.....
Stone, Clay, and Glass..	12,330	.....	12,122	.....	98.3	6,461	6,688
Iron and Steel.....	141,653	.....	140,041	.....	98.9	73,781	88,136
NonFerrous Metals.....	18,247	.....	25,504	.....	139.8	.....	.....
Machinery.....	112,727	.....	134,816	.....	119.6	.....	.....

TABLE 9--Continued

Industries (1)	1940 Census of Population		1940 Censuses of Manufactures and Business		Census of Manufactures and Business (cols. 4 and 5) expressed as a percentage of Census of Population (Cols. 2, 3)	Totals of Employment and Residence for All Industries Having Less Than 10 Per Cent Discrepancy as of Column 6	
	Metropolitan Area[a] (2)	Chicago City[b] (3)	Metropolitan Area[c] (4)	Chicago City (5)	(6)	Residence (7)	Employment (8)
Transport Equipment (Except Autos)	10,785	.....	11,178	.....	103.6%	6,966	11,872
Automobiles	11,844	.....	7,201	.....	60.8	.....	.....
Trucking Services	21,562	17,560	.....[f]	.....[f]	.....	.....	.....
Other Transportation	38,645	32,810	.....[f]	.....[f]	.....	.....	.....
Communication	26,387	19,667	.....[f]	.....[f]	.....	.....	.....
Utilities	26,473	16,836	.....[f]	.....[f]	.....	.....	.....
Wholesale Trade	68,268	.....	106,879	.....	156.5	.....	.....
Retail Trade	268,629	.....	293,470	.....	109.2	204,693	141,112
Eating and Drinking Places	.....	49,096	.....	45,799[g]	93.3	49,089	16,600
Finance, Insurance and Real Estate	95,634	72,848	.....[f]	.....[f]	.....	.....	.....
Hotels, Rooming Houses, etc.	.....	28,044	.....	21,274[g]	75.9	.....	.....
Laundry and Cleaning and Dyeing Establishments	.....	23,022	.....	21,876[g]	95.0	47,179	15,207
Business Repairs and Services	.....	21,540	.....	20,629[g]	95.8	21,619	18,464

TABLE 9--Continued

Industries (1)	1940 Census of Population		1940 Censuses of Manufactures and Business		Census of Manufactures and Business (cols. 4 and 5) expressed as a percentage of Census of Population (Cols. 2, 3)	Totals of Employment and Residence for All Industries Having Less Than 10 Per Cent Discrepancy as of Column 6	
	Metropolitan Area[a] (2)	Chicago City[b] (3)	Metropolitan Area[c] (4)	Chicago City (5)	(6)	Residence (7)	Employment (8)
Professional and Related Services.....	135,590	92,183	.....[f]	.....[f]	.....	.....	.....
Auto Storage, Rental and Repair.....	.....	12,942	.....	8,717[e]	67.4%	.....	.....
Amusement, Recreation and Related.....	.....	15,171	.....	9,575[e]	63.1	.....	.....
Domestic Service.....	86,507	39,505	.....[f]	.....[f]	.....	.....	.....

[a] U. S. Bureau of the Census, Sixteenth Census of the United States: 1940 Population, Vol. II, (Washington: Government Printing Office, 1943), Table 23.

[b] Ibid., Table A-42. [c] Ibid., Manufactures: 1939, Vol. III, Table 9.

[d] Ibid., Census of Business, Vol. IV, Construction: 1939.

[e] Ibid., Vol. III, Service Establishments: 1939, Table 3.

[f] Data not available.

APPENDIX B

Socio-Economic Classification of the Seventy-five Community Areas of the City of Chicago, 1940

In an unpublished master's thesis done at the University of Chicago, Albert J. Mayer developed a method for determining socio-economic class for census tracts, and applied this method to the City of Chicago.[1] In the socio-economic classification of the 75 community areas of Chicago, this method has been employed with one modification. This method and its modification is outlined here.

Prior to this work by Mayer, other people had ranked areas of the city for various purposes by different indices. Mayer's thesis was the first place where an attempt was made to combine various indices into a more meaningful "composite index." This composite index was constructed on the basis of four individual indices: (1) per cent native white of the total population, (2) median school years completed, (3) per cent professional workers of all employed workers, and (4) median contract or estimated monthly rental. The 935 census tracts of the City of Chicago were divided into quintiles in the case of each index, and a rank assigned to each of the quintiles. The composite socio-economic rating for a single tract is the average of the quintile

[1] Albert J. Mayer, A Method for Determining Socio-Economic Status in Census Tract Cities (Unpublished M.A. Thesis, Department of Sociology, University of Chicago, 1940).

ranks for the four indices as assigned to that particular tract. Thus, five socio-economic groupings were developed for the city, with the highest being class I and the lowest being class V.

Mayer found that one of the difficulties in using such a composite index was that in certain tracts, where a mean for the four quintile ranks was found, there were means which fell exactly half way between two classes. These tracts were then spotted on a map with the determined socio-economic classifications of the other tracts already indicated there-on. These marginal areas were then placed in the class into which they most logically fell by geographic position, considering the criteria of relative homogeneity of large areas.

While this method was successfully used in the classification of the 935 census tracts, the problem of marginality becomes much more serious for areal units as large as the community area, which is used in this paper as the unit of analysis. It would not do to place an area in a given class simply because its surrounding areas were of that particular class. These larger areas require that a class assignment be made to each area on the basis of its own composition, on relatively objective criteria, since each area is considered to be one of the "cities within the city." In order to obviate this difficulty, the following modification to the Mayer method has been made.

In developing the five classes for each index, the seventy-five community areas were ranked from high to low with reference to each of the four criteria. Each area was then given a rank order number for each index as determined by its position

in the distribution for all areas. Quintiles of areas were then selected to make up the five socio-economic classes, and these five classes were then labeled Class I for the highest quintile, on down to Class V for the lowest quintile. For each community area, the four quintile ranks (one for each of the four indices) were then averaged as done by Mayer to give the composite socio-economic index. Where the average of these quintile ranks fell exactly half way between two ranks, and the area could not be directly placed into one class or the other, a further technique was employed which is different from the Mayer method of classification of marginal areas by using the criterion of homogeneity.

After each community area had been assigned a rank order for each of the four indices, and before the distributions were broken down into quintile groups, the four rank order numbers were averaged. A mean rank order was thus computed for each area, and the seventy-five community areas were then again ranked on the basis of their position in the distribution of mean rank order numbers. Thus, a relative rank order (see Table 10) was assigned to each area, and quintiles were drawn up for this new ranking of the areas, giving us five classes on the basis of the relative rank order. Then for each original composite index which had fallen exactly half way between two classes, the class was assigned on the basis of the newly computed relative rank order class. As we may see in Table 10, it was found that this method had to be employed in 23 cases. It may also be noted from this same table (see column 5), and from Table 11, that in only 7 cases did the composite index vary from the relative rank order

index, and in each case the variation was only by one class (see Table 11, those items in the Final Class column indicated by "d" following the class).

TABLE 10

DISTRIBUTION OF THE SEVENTY-FIVE COMMUNITY AREAS OF CHICAGO BY SOCIO-ECONOMIC STATUS USING THE COMPOSITE INDEX AND THE RELATIVE RANK ORDER INDEX, 1940*

Class of Socio-Economic Status (1)	Number Areas Classified by Composite Index (2)	Number Areas Classified by Relative Rank Order Index Because of Marginality to Two Col. (1) Classes (3)	Final Classification of the Community Areas (4)	Number of Areas with Disagreement between Col. (4) and Relative Rank Order Index After the Final Classification (5)
I	8	6	14	0
II	12	3	15	1
III	11	6	17	2
IV	14	4	18	4
V	7	4	11	0
Total	52	23	75	7

*Source: Table 11.

TABLE 11

SOCIO-ECONOMIC CLASSIFICATION OF THE SEVENTY-FIVE COMMUNITY AREAS OF CHICAGO ON THE BASIS OF FOUR SELECTED CHARACTERISTICS, 1940[a]

Community Areas	Per Cent Native White		Median School Years Completed		Per Cent Professional		Median Rental		Composite Index	Relative Rank Order			Final Class[e]
	Rank	Class	Rank	Class	Rank	Class	Rank	Class		Mean Rank[b]	Relative Rank	Class	
1.....	12	I	2	I	7	I	9	I	I	7.5	4	I	I
2.....	10	I	5	I	13	I	4	I	I	8.0	5	I	I
3.....	20	II	6	I	16	II	14	I	...[c]	14.0	11	I	I
4.....	21	II	12	II	21	II	17	II	II	17.5	15	II	II
5.....	33	III	17	III	43	IV	44	III	III	34.25	35	IV	III[d]
6.....	37	IV	13	II	22	II	26	II	II	24.5	21	II	II
7.....	40	IV	16	III	20	II	59	IV	III[c]	33.75	33	III	III
8.....	46	IV	12	II	12	I	38	III	...[c]	27.0	24	III	III
9.....	2	I	6	I	8	I	6	I	I	5.5	2	I	I
10.....	9	I	13	II	21	II	23	II	II	16.5	14	II	II
11.....	19	II	17	III	39	III	30	III	III	26.25	22	II	III[d]
12.....	7	I	8	I	6	I	2	I	I	5.75	3	I	I
13.....	38	IV	11	I	9	I	5	I	II	15.75	13	II	II
14.....	49	V	14	II	27	II	15	I	...[c]	26.25	22	II	II
15.....	22	II	16	III	36	III	21	II	...[c]	23.75	19	II	II
16.....	22	II	14	II	33	III	28	II	II	24.25	20	II	II
17.....	23	II	17	III	42	IV	39	III	III	30.25	28	III	III
18.....	26	III	17	III	40	III	31	III	III	28.5	26	III	III
19.....	28	III	18	III	41	IV	27	II	III	28.5	26	III	III
20.....	25	III	16	III	41	IV	36	III	III	29.5	27	III	III
21.....	24	II	19	IV	46	IV	46	IV	...[c]	33.75	33	III	III
22.....	35	III	19	IV	37	III	53	IV	...[c]	36.0	38	IV	IV
23.....	44	IV	20	IV	44	IV	43	III	IV	37.75	40	IV	IV
24.....	51	V	27	V	45	IV	69	V	V	48.0	57	V	V

TABLE 11--Continued

Community Areas	Per Cent Native White		Median School Years Completed		Per Cent Professional		Median Rental		Composite Index	Relative Rank Order			Final Class[c]
	Rank	Class	Rank	Class	Rank	Class	Rank	Class		Mean Rank[b]	Relative Rank	Class	
25.....	13	I	12	II	18	II	17	II	II	15.0	12	I	II[d]
26.....	30	III	15	II	25	II	24	II	II	23.5	18	II	II
27.....	39	IV	18	III	33	III	45	IV	...[c]	33.75	33	III	III
28.....	57	V	26	V	23	II	72	V	IV	44.5	53	V	IV[d]
29.....	55	V	24	V	37	III	40	III	IV	39.0	44	IV	IV
30.....	45	IV	21	IV	47	IV	63	V	IV	44.0	51	V	IV[d]
31.....	47	IV	27	V	51	V	74	V	V	50.5	59	V	V
32.....	25	III	10	I	11	I	3	I	...[c]	12.25	9	I	I
33.....	56	V	18	III	2	I	62	V	...[c]	34.5	36	IV	IV
34.....	59	V	28	V	53	V	73	V	V	53.25	60	V	V
35.....	60	V	27	V	19	II	66	V	IV	43.0	47	V	IV[d]
36.....	54	V	14	II	30	III	50	IV	...[c]	37.0	39	IV	IV
37.....	53	V	24	V	55	V	70	V	V	50.5	59	V	V
38.....	62	V	22	IV	28	III	52	IV	IV	43.5	49	V	IV[d]
39.....	17	II	4	I	10	I	19	II	...[c]	12.5	9	I	II
40.....	61	V	16	III	43	IV	32	III	IV	38.0	41	IV	IV
41.....	27	III	2	I	1	I	8	I	...[c]	9.5	7	I	I
42.....	48	V	9	I	15	I	25	II	II	24.25	20	II	II
43.....	8	I	3	I	4	I	7	I	I	5.5	2	I	I
44.....	11	I	7	I	17	II	10	I	I	11.25	8	I	I
45.....	3	I	7	I	14	I	12	I	I	9.0	6	I	I
46.....	31	III	21	IV	35	III	51	IV	...[c]	34.5	36	IV	IV
47.....	52	V	26	V	56	V	60	V	V	48.5	58	V	V
48.....	20	II	16	III	26	II	33	III	...[c]	23.5	18	II	II
49.....	45	IV	15	II	31	III	35	III	III	31.5	29	III	III
50.....	50	V	23	IV	55	V	61	V	V	47.25	56	V	V
51.....	34	III	24	V	54	V	55	IV	IV	41.75	45	IV	IV

TABLE 11--Continued

Community Areas	Per Cent Native White		Median School Years Completed		Per Cent Professional		Median Rental		Composite Index	Relative Rank Order			Final Class[a]
	Rank	Class	Rank	Class	Rank	Class	Rank	Class		Mean Rank[b]	Relative Rank	Class	
52.....	23	II	20	IV	46	IV	47	IV	...[c]	34.0	34	III	III
53.....	42	IV	21	IV	43	IV	48	IV	IV	38.75	43	IV	IV
54.....	34	III	22	IV	47	IV	64	V	IV	41.75	45	IV	IV
55.....	39	IV	26	V	52	V	65	V	V	45.5	55	V	V
56.....	36	IV	24	V	56	V	57	IV	...[c]	43.25	48	V	V
57.....	45	IV	24	V	57	V	49	IV	...[c]	43.75	50	V	V
58.....	43	IV	25	V	53	V	58	IV	...[c]	44.75	54	V	V
59.....	18	II	23	IV	48	V	67	V	IV	39.0	44	IV	IV
60.....	29	III	26	V	51	V	71	V	...[c]	44.25	52	V	V
61.....	32	III	24	V	46	IV	68	V	IV	42.5	46	IV	IV
62.....	41	IV	24	V	32	III	56	IV	IV	38.25	42	IV	IV
63.....	27	III	19	IV	47	IV	34	III	...[c]	31.75	30	III	III
64.....	14	I	29	V	49	V	37	III	...[c]	32.25	31	III	III
65.....	16	II	18	III	44	IV	29	II	III	26.75	23	III	III
66.....	18	II	15	II	29	III	16	II	II	19.5	16	II	II
67.....	30	III	18	III	45	IV	41	III	III	33.5	32	III	III
68.....	21	II	16	III	34	III	42	III	III	28.25	25	III	III
69.....	15	I	13	II	28	III	22	II	II	19.5	16	II	II
70.....	5	I	13	II	23	II	20	II	II	15.25	13	II	II
71.....	6	I	13	II	24	II	11	I	...[c]	13.5	10	I	I
72.....	1	I	1	I	3	I	1	I	I	1.5	1	I	I
73.....	4	I	12	II	20	II	13	I	...[c]	12.25	9	I	I
74.....	19	II	21	IV	50	V	54	IV	IV	35.75	37	IV	IV
75.....	58	V	8	I	5	I	18	II	II	22.25	17	II	II

[a]Source: Louis Wirth and Eleanor H. Bernert, Local Community Fact Book of Chicago (Chicago: University of Chicago Press, 1949).

TABLE 11--Continued

[b]The Mean Rank is the average of the ranks for the four indices.

[c]Where the Composite Index fell exactly between two index positions, the Relative Rank Order Index was used.

[d]Disagreement between Composite Index and Relative Rank Order Index. Composite Index used. In no case did the Composite Index and the Relative Rank Order Index vary by more than one class.

[e]While it may have been possible to use the relative rank order class as the final class, the method outlined in this appendix was employed for two reasons: (1) it is designed to effect maximum comparability with the technique used by Mayer in the work cited, and (2) it makes less important small differences between areas for any one of the four criteria.

APPENDIX C

TABLE 12

INDEX OF SEPARATION OF PLACE OF WORK FROM PLACE OF RESIDENCE BY TOTAL INDUSTRY AND NINE SELECTED INDUSTRIES FOR THE CITY OF CHICAGO

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
			Total Industry		
Total	1,038,233	100.000	1,285,231	100.000	...
1	1,804	.174	26,807	2.086	8.34
2	326	.031	16,226	1.262	2.46
3	10,749	1.035	61,502	4.785	21.63
4	4,747	.457	19,645	1.529	29.89
5	10,809	1.041	19,006	1.479	70.39
6	19,689	1.896	50,031	3.893	48.70
7	19,158	1.845	40,564	3.156	58.46
8	117,692	11.336	33,834	2.633	430.53
9	78	.007	2,121	.165	4.24
10	765	.074	5,756	.448	16.52
11	325	.031	8,176	.636	4.87
12	1,824	.176	3,536	.275	64.00
13	855	.082	4,344	.338	24.26
14	1,889	.182	22,481	1.749	10.41
15	2,721	.262	26,448	2.058	12.73
16	5,119	.493	27,084	2.107	23.40
17	...	...	8,133	.632	0.00
18	...	...	3,556	.277	0.00
19	19,569	1.885	25,693	1.999	94.30
20	9,833	.947	9,059	.705	134.33
21	15,538	1.497	19,499	1.517	98.68
22	19,435	1.872	44,372	3.452	54.23
23	20,529	1.977	31,193	2.427	81.46
24	22,129	2.131	63,993	4.979	42.80
25	33,641	3.240	53,262	4.144	78.19
26	8,122	.782	18,851	1.467	53.31
27	5,552	.535	24,003	1.867	28.66
28	100,860	9.715	38,091	2.964	327.77

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
29	27,292	2.629	36,506	2.840	92.57
30	17,106	1.648	27,756	2.160	76.30
31	25,428	2.449	21,689	1.688	145.08
32	256,749	24.729	3,406	.265	9,331.60
33	29,635	2.854	3,352	.261	1,093.43
34	14,843	1.430	4,761	.370	386.48
35	5,183	.499	12,144	.945	52.80
36	155	.015	4,859	.378	3.97
37	2,095	.202	4,301	.335	60.30
38	3,527	.340	30,720	2.390	14.23
39	95	.009	13,285	1.034	0.87
40	3,806	.367	18,338	1.427	25.72
41	1,971	.190	22,488	1.750	10.86
42	1,549	.149	29,190	2.271	6.56
43	1,705	.164	33,220	2.585	6.34
44	4,951	.477	14,838	1.155	41.30
45	2,172	.209	3,819	.297	70.37
46	16,001	1.541	19,173	1.492	103.28
47	1,512	.126	1,184	.092	136.95
48	255	.025	2,529	.197	12.69
49	1,828	.176	16,271	1.266	15.90
50	9,208	.887	2,131	.166	534.34
51	7,316	.705	2,812	.219	321.92
52	5,515	.531	5,416	.421	126.13
53	6,995	.674	9,905	.771	87.42
54	2,732	.263	431	.034	773.52
55	2,550	.246	2,552	.199	123.62
56	7,084	.682	2,450	.191	357.07
57	2,166	.209	3,421	.266	78.57
58	19,900	1.917	18,412	1.433	133.78
59	9,906	.954	7,177	.558	170.97
60	15,442	1.487	16,918	1.316	112.99
61	49,002	4.720	27,881	2.169	217.61
62	...	...	1,103	.086	0.00
63	4,617	.445	11,782	.917	48.53
64	4,729	.455	2,398	.187	243.32
65	345	.033	3,425	.266	12.41
66	1,454	.140	19,450	1.513	9.25
67	3,665	.353	22,331	1.738	20.31
68	4,784	.461	32,820	2.554	18.05
69	5,889	.568	22,468	1.748	32.49
70	733	.071	250	.019	373.68
71	1,961	.189	20,662	1.608	11.25
72	92	.009	5,612	.437	2.06
73	722	.070	6,681	.512	13.67

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
74	...	...	1,314	.102	0.00
75	...	...	4,434	.345	0.00
			Construction		
Total	24,534	100.000	52,098	100.000	...
1	106	.436	781	1.499	29.09
2	75	.308	818	1.570	19.62
3	113	.464	2,394	4.595	10.10
4	281	1.155	1,001	1.921	60.12
5	...	...	942	1.808	0.00
6	429	1.763	2,437	4.678	37.69
7	798	3.279	1,697	3.257	100.68
8	2,173	8.930	935	1.795	497.49
9	...	...	114	.219	0.00
10	...	...	401	.770	0.00
11	...	...	522	1.002	0.00
12	...	...	190	.365	0.00
13	179	.736	264	.507	145.17
14	...	...	1,035	1.987	0.00
15	...	...	1,538	2.952	0.00
16	224	.921	1,371	2.632	34.99
17	...	...	687	1.319	0.00
18	...	...	212	.407	0.00
19	...	...	1,130	2.169	0.00
20	...	...	567	1.088	0.00
21	81	.333	742	1.424	23.38
22	827	3.399	1,652	3.171	107.19
23	1,027	4.220	1,484	2.848	148.17
24	856	3.518	2,114	4.058	86.69
25	735	3.020	2,610	5.010	60.28
26	497	2.042	748	1.436	142.20
27	...	...	1,144	2.196	0.00
28	3,148	12.937	1,916	3.678	351.74
29	364	1.496	1,422	2.729	54.82
30	...	...	666	1.278	0.00
31	300	1.233	525	1.008	122.32
32	8,598	35.333	76	.146	24,200.68
33	431	1.771	73	.140	1,265.00
34	...	...	256	.491	0.00
35	208	.855	414	.795	107.55
36	...	...	202	.388	0.00
37	...	...	213	.409	0.00

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
38	555	2.281	776	1.490	153.09
39	...	...	349	.670	0.00
40	...	...	335	.643	0.00
41	...	...	457	.877	0.00
42	206	.847	1,152	2.211	38.31
43	220	.904	1,022	1.962	46.08
44	81	.333	687	1.319	25.25
45	102	.419	173	.332	126.21
46	...	...	474	.910	0.00
47	...	...	22	.042	0.00
48	...	...	93	.179	0.00
49	...	...	820	1.574	0.00
50	...	...	58	.111	0.00
51	...	...	94	.180	0.00
52	230	.945	212	.407	232.19
53	...	...	353	.678	0.00
54	...	...	2	.004	0.00
55	...	...	27	.052	0.00
56	...	...	82	.157	0.00
57	...	...	60	.115	0.00
58	...	...	392	.752	0.00
59	...	...	154	.296	0.00
60	80	.329	498	.956	34.41
61	1,251	5.141	630	1.209	425.23
62	...	...	56	.107	0.00
63	...	...	401	.770	0.00
64	...	...	62	.119	0.00
65	...	...	144	.276	0.00
66	...	...	760	1.459	0.00
67	...	...	1,297	2.490	0.00
68	...	...	1,814	3.482	0.00
69	...	...	1,417	2.720	0.00
70	...	...	20	.038	0.00
71	159	.653	979	1.879	34.75
72	...	...	251	.482	0.00
73	...	...	365	.701	0.00
74	...	...	114	.219	0.00
75	...	...	203	.390	0.00
			Food		
Total	27,429	100.000	71,111	100.000	...
1	...	...	496	.698	0.00

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
2	...	...	482	.678	0.00
3	342	.391	1,215	1.709	22.88
4	301	.344	574	.807	42.63
5	...	...	709	.997	0.00
6	4,402	5.035	1,673	2.353	213.98
7	1,905	2.179	1,715	2.412	90.34
8	6,648	7.604	1,113	1.565	485.88
9	...	...	51	.072	0.00
10	...	...	184	.259	0.00
11	...	...	274	.385	0.00
12	...	...	64	.090	0.00
13	...	...	95	.134	0.00
14	...	...	552	.776	0.00
15	...	...	921	1.295	0.00
16	379	.433	936	1.316	32.90
17	...	...	349	.491	0.00
18	...	...	214	.301	0.00
19	838	.958	1,238	1.741	55.03
20	88	.101	322	.453	22.30
21	421	.482	765	1.076	44.80
22	940	1.075	1,767	2.485	43.26
23	3,068	3.509	1,838	2.585	135.74
24	605	.692	4,353	6.121	11.30
25	5,653	6.466	1,893	2.662	242.90
26	351	.401	746	1.049	38.23
27	1,072	1.226	1,209	1.700	72.12
28	5,204	5.952	2,084	2.931	203.07
29	782	.894	1,357	1.908	46.85
30	274	.313	1,446	2.033	15.40
31	1,947	2.227	1,347	1.894	117.58
32	2,830	3.237	57	.080	4,046.25
33	492	.563	74	.104	541.35
34	...	...	396	.557	0.00
35	243	.278	832	1.170	23.76
36	...	...	219	.308	0.00
37	131	.150	449	.631	23.77
38	902	1.032	2,444	3.437	30.03
39	...	...	454	.638	0.00
40	2,537	2.902	1,082	1.522	190.67
41	...	...	574	.807	0.00
42	...	...	1,186	1.668	0.00
43	...	...	1,233	1.734	0.00
44	...	...	731	1.028	0.00
45	...	...	137	.193	0.00
46	120	.137	557	.783	17.50

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
47	...	...	22	.031	0.00
48	...	...	107	.150	0.00
49	155	.177	515	.721	24.55
50	...	...	43	.060	0.00
51	800	.915	179	.252	363.10
52	108	.124	241	.339	36.58
53	...	...	298	.419	0.00
54	...	...	22	.031	0.00
55	...	...	58	.082	0.00
56	...	...	278	.391	0.00
57	452	.517	442	.622	83.12
58	3,979	4.551	2,447	3.441	132.26
59	2,687	3.073	1,175	1.652	186.02
60	3,082	3.525	1,795	2.523	139.66
61	32,136	36.757	7,520	10.575	347.58
62	...	...	117	.165	0.00
63	91	.104	1,545	2.173	4.79
64	...	...	190	.267	0.00
65	...	...	354	.498	0.00
66	...	...	1,887	2.654	0.00
67	96	.110	2,661	3.742	2.94
68	180	.206	2,436	3.426	6.01
69	1,069	1.223	1,112	1.564	78.20
70	...	...	19	.027	0.00
71	119	.136	1,978	2.782	4.89
72	...	...	370	.520	0.00
73	...	...	462	.650	0.00
74	...	...	120	.169	0.00
75	...	...	313	.440	0.00
Business Repairs and Services					
Total	18,464	100.000	21,619	100.000	...
1	730	3.954	839	3.881	101.88
2	...	...	402	1.859	0.00
3	258	1.397	1,695	7.841	17.82
4	77	.417	467	2.160	19.31
5	...	...	347	1.605	0.00
6	...	...	1,191	5.509	0.00
7	168	.910	812	3.756	24.23
8	2,930	15.869	1,261	5.833	272.06
9	78	.422	58	.268	157.46
10	...	...	118	.546	0.00

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
11	...	...	164	.759	0.00
12	...	...	63	.291	0.00
13	...	...	82	.379	0.00
14	...	...	464	2.146	0.00
15	...	...	487	2.253	0.00
16	...	...	581	2.687	0.00
17	...	...	123	.569	0.00
18	...	...	50	.231	0.00
19	...	...	376	1.739	0.00
20	...	...	150	.694	0.00
21	...	...	299	1.383	0.00
22	...	...	652	3.016	0.00
23	...	...	487	2.253	0.00
24	...	...	689	3.187	0.00
25	...	...	973	4.501	0.00
26	...	...	301	1.392	0.00
27	85	.460	368	1.702	27.03
28	2,111	11.433	893	4.131	276.76
29	...	...	565	2.613	0.00
30	...	...	274	1.267	0.00
31	...	...	183	.846	0.00
32	10,402	56.337	195	.902	6,245.79
33	1,000	5.416	38	.176	3,077.27
34	...	...	67	.310	0.00
35	155	.839	125	.578	145.16
36	...	...	101	.467	0.00
37	...	...	31	.143	0.00
38	...	...	132	.611	0.00
39	...	...	285	1.318	0.00
40	...	...	68	.315	0.00
41	...	...	477	2.206	0.00
42	...	...	460	2.128	0.00
43	...	...	720	3.330	0.00
44	...	...	271	1.254	0.00
45	...	...	53	.245	0.00
46	...	...	137	.634	0.00
47	...	...	7	.032	0.00
48	...	...	24	.111	0.00
49	...	...	166	.768	0.00
50	...	...	13	.060	0.00
51	...	...	5	.023	0.00
52	...	...	43	.199	0.00
53	...	...	70	.324	0.00
54	...	...	3	.014	0.00
55	...	...	9	.042	0.00

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
56	...	...	18	.083	0.00
57	...	...	29	.134	0.00
58	...	...	133	.615	0.00
59	...	...	58	.268	0.00
60	110	.596	195	.902	66.08
61	...	...	216	.999	0.00
62	...	...	9	.042	0.00
63	...	...	108	.500	0.00
64	...	...	23	.106	0.00
65	...	...	37	.171	0.00
66	...	...	242	1.119	0.00
67	...	...	258	1.193	0.00
68	360	1.950	421	1.947	100.15
69	...	...	376	1.739	0.00
70	...	...	4	.018	0.00
71	...	...	276	1.277	0.00
72	...	...	125	.578	0.00
73	...	...	98	.453	0.00
74	...	...	7	.032	0.00
75	...	...	72	.333	0.00
Printing and Publishing					
Total	58,240	100.000	49,869	100.000	...
1	198	.340	1,116	2.238	15.19
2	...	...	767	1.538	0.00
3	242	.416	2,813	5.641	7.37
4	...	...	1,092	2.190	0.00
5	159	.273	1,166	2.338	11.68
6	3,003	5.156	2,418	4.849	106.33
7	...	...	1,535	3.078	0.00
8	7,928	13.613	1,376	2.759	493.40
9	...	...	141	.283	0.00
10	...	...	365	.732	0.00
11	...	...	486	.975	0.00
12	...	...	113	.227	0.00
13	...	...	146	.293	0.00
14	...	...	1,006	2.017	0.00
15	...	...	1,608	3.224	0.00
16	...	...	1,532	3.072	0.00
17	...	...	401	.804	0.00
18	...	...	171	.343	0.00
19	4,172	7.163	1,473	2.954	242.48

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
20	326	.560	518	1.039	53.90
21	773	1.327	1,079	2.164	61.32
22	564	.968	1,971	3.952	24.49
23	1,049	1.801	1,459	2.926	61.55
24	951	1.633	1,989	3.988	40.95
25	948	1.628	2,467	4.947	32.91
26	389	.668	687	1.378	48.48
27	183	.314	929	1.863	16.86
28	8,273	14.205	1,053	2.112	672.59
29	200	.343	1,236	2.478	13.84
30	...	...	1,274	2.555	0.00
31	173	.297	907	1.819	16.33
32	12,013	20.627	220	.441	4,677.32
33	8,670	14.887	86	.172	8,655.23
34	5,688	9.766	235	.471	2,073.46
35	137	.235	126	.253	92.88
36	...	...	170	.341	0.00
37	...	...	145	.291	0.00
38	...	...	222	.445	0.00
39	...	...	395	.792	0.00
40	284	.488	159	.319	152.98
41	...	...	652	1.307	0.00
42	...	...	867	1.739	0.00
43	...	...	1,098	2.202	0.00
44	...	...	539	1.081	0.00
45	...	...	126	.253	0.00
46	...	...	475	.952	0.00
47	...	...	27	.054	0.00
48	...	...	68	.136	0.00
49	...	...	382	.766	0.00
50	...	...	50	.100	0.00
51	...	...	29	.058	0.00
52	...	...	93	.186	0.00
53	...	...	187	.375	0.00
54	...	...	13	.026	0.00
55	...	...	63	.126	0.00
56	...	...	59	.118	0.00
57	...	...	126	.253	0.00
58	264	.453	620	1.243	36.44
59	...	...	193	.387	0.00
60	288	.495	836	1.676	29.53
61	355	.610	735	1.476	41.33
62	...	...	25	.050	0.00
63	908	1.559	538	1.079	144.49
64	...	...	26	.052	0.00

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
65	...	...	120	.241	0.00
66	...	...	759	1.522	0.00
67	...	...	816	1.636	0.00
68	102	.175	1,180	2.366	7.40
69	...	...	763	1.530	0.00
70	...	...	5	.010	0.00
71	...	...	792	1.588	0.00
72	...	...	195	.391	0.00
73	...	...	220	.441	0.00
74	...	...	23	.046	0.00
75	...	...	116	.233	0.00
		Chemicals			
Total	16,276	100.000	17,145	100.000	...
1	...	...	337	1.966	0.00
2	...	...	279	1.627	0.00
3	107	.657	629	3.669	17.91
4	...	...	238	1.388	0.00
5	...	...	232	1.353	0.00
6	87	.535	547	3.190	16.77
7	88	.541	449	2.619	20.66
8	938	5.763	299	1.744	330.45
9	...	...	27	.157	0.00
10	...	...	76	.443	0.00
11	...	...	95	.554	0.00
12	103	.633	31	.181	349.72
13	...	...	55	.321	0.00
14	...	...	228	1.330	0.00
15	...	...	325	1.896	0.00
16	...	...	350	2.041	0.00
17	...	...	92	.537	0.00
18	...	...	41	.239	0.00
19	...	...	343	2.001	0.00
20	...	...	105	.612	0.00
21	...	...	246	1.435	0.00
22	984	6.046	579	3.377	179.04
23	...	...	351	2.047	0.00
24	970	5.960	726	4.234	140.77
25	795	4.884	702	4.094	119.30
26	...	...	210	1.225	0.00
27	...	...	254	1.481	0.00
28	308	1.892	349	2.036	92.93

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
29	888	5.456	342	1.995	273.48
30	258	1.585	381	2.222	71.33
31	391	2.402	294	1.715	140.06
32	1,240	7.619	30	.175	4,353.71
33	235	1.444	21	.122	1,183.61
34	272	1.671	105	.612	273.04
35	220	1.352	113	.659	205.16
36	...	...	35	.204	0.00
37	...	...	91	.531	0.00
38	236	1.450	230	1.341	108.13
39	...	...	132	.770	0.00
40	...	...	108	.630	0.00
41	...	...	236	1.376	0.00
42	...	...	260	1.516	0.00
43	...	...	468	2.730	0.00
44	...	...	194	1.132	0.00
45	...	...	64	.373	0.00
46	...	...	138	.805	0.00
47	...	...	13	.076	0.00
48	...	...	20	.117	0.00
49	...	...	631	3.680	0.00
50	...	...	136	.793	0.00
51	...	...	9	.052	0.00
52	...	...	62	.362	0.00
53	190	1.167	398	2.321	50.28
54	2,323	14.273	13	.076	18780.26
55	187	1.149	104	.607	189.29
56	...	...	98	.572	0.00
57	94	.578	78	.455	127.03
58	771	4.737	290	1.691	280.13
59	167	1.026	197	1.149	89.30
60	677	4.159	701	4.089	101.71
61	3,747	23.022	462	2.695	854.25
62	...	...	20	.117	0.00
63	...	...	226	1.318	0.00
64	...	...	68	.397	0.00
65	...	...	77	.449	0.00
66	...	...	414	2.415	0.00
67	...	...	379	2.211	0.00
68	...	...	416	2.426	0.00
69	...	...	239	1.394	0.00
70	...	...	6	.035	0.00
71	...	...	324	1.890	0.00

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
72	...	...	122	.712	0.00
73	...	...	100	.583	0.00
74	...	...	27	.157	0.00
75	...	...	78	.455	0.00
	Iron and Steel				
Total	88,136	100.000	73,781	100.000	...
1	...	...	450	.607	0.00
2	...	...	411	.557	0.00
3	108	.123	999	1.354	9.08
4	92	.104	470	.637	16.33
5	1,136	1.289	588	.797	161.73
6	272	.309	1,127	1.527	20.24
7	3,545	3.795	1,187	1.609	235.86
8	2,477	2.810	547	.741	379.22
9	...	...	76	.103	0.00
10	...	...	192	.260	0.00
11	81	.092	307	.416	22.11
12	...	...	62	.084	0.00
13	332	.377	92	.125	301.60
14	...	...	394	.534	0.00
15	90	.102	1,123	1.522	6.70
16	92	.104	866	1.174	8.86
17	...	...	351	.476	0.00
18	...	...	185	.251	0.00
19	1,886	2.140	1,624	2.201	97.23
20	1,261	1.431	475	.644	222.20
21	1,122	1.273	936	1.269	100.32
22	1,648	1.870	2,106	2.854	65.52
23	2,701	3.065	1,476	2.001	153.17
24	1,115	1.265	3,415	4.629	27.33
25	7,574	8.594	2,309	3.130	274.57
26	958	1.087	605	.820	132.56
27	752	.853	823	1.115	76.50
28	4,115	4.669	1,479	2.005	232.87
29	2,103	2.386	1,058	1.434	166.39
30	2,354	2.671	2,450	3.321	80.43
31	2,014	2.285	1,799	2.438	93.72
32	1,085	1.231	22	.029	4,244.85
33	573	.650	51	.069	942.02
34	593	.673	206	.279	241.22
35	691	.784	479	.649	120.80

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
36	...	...	166	.225	0.00
37	85	.096	226	.306	31.37
38	...	...	1,638	2.220	0.00
39	...	...	337	.457	0.00
40	...	...	630	.854	0.00
41	...	...	473	.641	0.00
42	148	.168	1,372	1.860	9.03
43	...	...	2,603	3.528	0.00
44	396	.449	978	1.326	33.86
45	...	...	532	.721	0.00
46	14,200	16.111	8,087	10.961	146.98
47	522	.592	299	.405	146.17
48	...	...	794	1.076	0.00
49	...	...	1,607	2.178	0.00
50	...	...	190	.258	0.00
51	5,726	6.497	1,334	1.808	359.35
52	5,087	5.772	2,213	2.999	192.46
53	3,176	3.604	1,486	2.014	178.95
54	278	.315	167	.226	139.38
55	...	...	608	.824	0.00
56	...	...	440	.596	0.00
57	442	.502	509	.690	72.75
58	11,063	12.552	2,850	3.863	324.92
59	1,831	2.077	636	.862	240.95
60	179	.203	1,271	1.723	11.78
61	795	.902	1,706	2.312	39.01
62	...	...	118	.160	0.00
63	476	.540	1,065	1.443	37.42
64	...	...	439	.595	0.00
65	...	...	284	.384	0.00
66	1,200	1.362	1,479	2.005	67.93
67	194	.220	1,273	1.725	12.75
68	...	...	1,514	2.052	0.00
69	103	.117	1,574	2.133	5.49
70	733	.832	16	.022	3,781.82
71	210	.238	931	1.262	18.86
72	...	...	325	.440	0.00
73	722	.819	480	.651	125.81
74	...	...	90	.122	0.00
75	...	...	301	.408	0.00

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
			Retail Trade		
Total	141,112	100.000	204,693	100.000	...
1	...	...	5,086	2,485	0.00
2	123	.087	2,751	1.344	6.47
3	1,164	.825	11,183	5.463	15.10
4	1,498	1.062	3,351	1.637	64.87
5	...	...	3,187	1.557	0.00
6	3,046	2.159	6,307	3.081	70.07
7	...	...	5,776	2.822	0.00
8	24,340	17.249	4,124	2.015	856.03
9	...	...	311	.152	0.00
10	...	...	837	.409	0.00
11	79	.055	1,340	.655	8.40
12	700	.496	273	.133	372.93
13	...	...	786	.384	0.00
14	...	...	5,588	2.730	0.00
15	950	.673	4,378	2.139	31.46
16	337	.239	4,648	2.271	10.52
17	...	...	1,343	.656	0.00
18	...	...	523	.256	0.00
19	162	.115	3,734	1.824	6.30
20	...	...	1,410	.689	0.00
21	511	.362	2,934	1.433	25.26
22	3,171	2.247	7,180	3.508	64.05
23	434	.308	4,963	2.425	12.70
24	1,840	1.304	9,290	4.539	28.30
25	194	.137	9,023	4.408	3.11
26	2,580	1.828	3,955	1.932	94.62
27	169	.120	4,204	2.054	5.84
28	9,319	6.604	5,208	2.544	259.59
29	13,143	9.314	10,159	4.963	187.67
30	350	.248	4,178	2.041	12.15
31	...	...	2,843	1.389	0.00
32	55,870	39.593	386	.189	20,948.68
33	838	.594	307	.150	396.00
34	540	.383	842	.411	93.19
35	...	...	1,437	.702	0.00
36	...	...	847	.414	0.00
37	777	.551	677	.331	166.46
38	399	.283	3,281	1.603	17.65
39	...	...	2,487	1.215	0.00
40	...	...	3,028	1.479	0.00
41	...	...	4,116	2.011	0.00

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
42	75	.053	4,897	2.392	2.22
43	...	...	6,003	2.933	0.00
44	2,723	1.930	2,472	1.208	159.77
45	487	.345	518	.253	136.36
46	525	.372	2,245	1.097	33.91
47	...	...	106	.052	0.00
48	...	...	281	.137	0.00
49	541	.383	2,402	1.173	32.65
50	...	...	222	.108	0.00
51	...	...	277	.135	0.00
52	...	...	541	.264	0.00
53	...	...	1,206	.589	0.00
54	...	...	68	.033	0.00
55	...	...	234	.114	0.00
56	...	...	175	.085	0.00
57	...	...	411	.201	0.00
58	213	.151	2,296	1.122	13.46
59	891	.631	1,072	.524	120.42
60	5,417	3.839	2,734	1.336	287.35
61	1,734	1.229	3,675	1.795	68.47
62	...	...	121	.059	0.00
63	123	.087	1,666	.814	10.69
64	...	...	195	.095	0.00
65	...	...	438	.214	0.00
66	...	...	3,070	1.500	0.00
67	1,107	.784	3,579	1.748	44.85
68	1,878	1.331	5,961	2.912	45.71
69	2,675	1.896	3,891	1.901	99.74
70	...	...	33	.016	0.00
71	189	.140	3,316	1.620	8.64
72	...	...	592	.289	0.09
73	...	...	946	.462	0.00
74	...	...	223	.109	0.00
75	...	...	546	.267	0.00
Eating and Drinking Places					
Total	16,600	100.000	49,089	100.000	...
1	...	...	763	1.554	0.00
2	...	...	214	.436	0.00
3	...	...	3,633	7.401	0.00
4	...	...	633	1.289	0.00
5	...	...	621	1.265	0.00

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
6	645	3.886	2,804	5.712	68.03
7	92	.554	2,618	5.333	10.39
8	3,774	22.735	3,245	6.610	343.95
9	...	...	24	.049	0.00
10	...	...	82	.167	0.00
11	...	...	162	.330	0.00
12	...	...	28	.057	0.00
13	...	...	52	.106	0.00
14	199	1.199	420	.856	140.07
15	...	...	530	1.080	0.00
16	75	.452	588	1.198	37.73
17	...	...	171	.348	0.00
18	...	...	84	.171	0.00
19	...	...	609	1.241	0.00
20	...	...	220	.448	0.00
21	229	1.380	518	1.055	121.33
22	76	.458	1,306	2.660	17.22
23	...	...	974	1.984	0.00
24	...	...	2,995	6.101	0.00
25	...	...	1,270	2.587	0.00
26	179	1.078	763	1.554	69.37
27	418	2.518	1,347	2.744	91.76
28	695	4.187	2,789	5.682	73.69
29	...	...	798	1.626	0.00
30	...	...	667	1.359	0.00
31	...	...	941	1.917	0.00
32	8,761	52.777	440	.896	5,890.29
33	469	2.825	335	.682	414.22
34	...	...	293	.597	0.00
35	...	...	627	1.277	0.00
36	...	...	355	.723	0.00
37	...	...	191	.389	0.00
38	...	...	1,675	3.412	0.00
39	...	...	618	1.259	0.00
40	112	.675	1,018	2.074	32.55
41	...	...	730	1.487	0.00
42	80	.482	1,909	3.889	12.39
43	97	.584	605	1.232	47.40
44	...	...	337	.687	0.00
45	...	...	57	.116	0.00
46	100	.602	545	1.110	47.40
47	...	...	37	.075	0.00
48	...	...	74	.151	0.00
49	...	...	335	.682	0.00
50	...	...	69	.141	0.00

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
51	...	...	50	.102	0.00
52	...	...	146	.297	0.00
53	...	...	251	.511	0.00
54	...	...	13	.026	0.00
55	...	...	109	.222	0.00
56	...	...	45	.092	0.00
57	...	...	61	.124	0.00
58	126	.759	520	1.059	71.67
59	...	...	184	.375	0.00
60	...	...	629	1.281	0.00
61	112	.675	944	1.923	35.10
62	...	...	20	.041	0.00
63	...	...	242	.493	0.00
64	158	.952	91	.185	514.59
65	...	...	59	.120	0.00
66	...	...	462	.941	0.00
67	...	...	552	1.124	0.00
68	111	.669	1,250	2.546	26.28
69	...	...	613	1.249	0.00
70	...	...	9	.018	0.00
71	...	...	464	.945	0.00
72	92	.554	50	.102	543.14
73	...	...	104	.212	0.00
74	...	...	29	.059	0.00
75	...	...	73	.149	0.00
Laundry and Dyeing and Cleaning					
Total	15,207	100.000	47,179	100.000	...
1	120	.789	969	2.054	38.41
2	...	...	469	.994	0.00
3	749	4.925	2,451	5.195	94.80
4	202	1.328	789	1.672	79.43
5	448	2.946	731	1.549	190.19
6	276	1.815	1,987	4.212	43.09
7	279	1.835	1,478	3.133	58.57
8	1,293	8.503	1,087	2.304	369.05
9	...	...	51	.108	0.00
10	...	...	149	.316	0.00
11	...	...	249	.528	0.00
12	...	...	55	.117	0.00
13	...	...	119	.252	0.00
14	226	1.486	868	1.840	80.76

TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
15	...	...	805	1.706	0.00
16	266	1.749	981	2.079	84.13
17	...	...	253	.536	0.00
18	...	...	96	.203	0.00
19	...	...	796	1.687	0.00
20	...	...	235	.498	0.00
21	...	...	604	1.280	0.00
22	741	4.873	1,503	3.186	152.95
23	348	2.288	1,154	2.446	93.54
24	400	2.630	2,352	4.985	52.76
25	302	1.986	1,406	2.980	66.64
26	227	1.493	585	1.240	120.40
27	574	3.775	1,016	2.154	175.25
28	1,653	10.870	1,546	3.315	327.90
29	...	...	1,523	3.228	0.00
30	...	...	703	1.490	0.00
31	347	2.282	664	1.407	162.19
32	342	2.249	80	.170	1,322.94
33	1,223	8.042	94	.199	4,041.21
34	251	1.651	209	.443	372.69
35	791	5.202	1,126	2.387	217.93
36	...	...	206	.437	0.00
37	90	.592	126	.267	221.72
38	459	3.018	3,237	6.861	43.99
39	...	...	448	.950	0.00
40	192	1.263	1,697	3.597	35.11
41	79	.519	689	1.460	35.55
42	271	1.782	1,220	2.586	68.91
43	256	1.683	936	1.984	84.83
44	...	...	414	.878	0.00
45	...	...	95	.201	0.00
46	...	...	710	1.505	0.00
47	...	...	32	.068	0.00
48	...	...	68	.144	0.00
49	639	4.202	658	1.395	301.22
50	122	.802	91	.193	415.54
51	...	...	68	.144	0.00
52	...	...	143	.303	0.00
53	87	.572	370	.784	72.96
54	...	...	8	.017	0.00
55	...	...	149	.316	0.00
56	...	...	52	.110	0.00
57	...	...	85	.180	0.00
58	...	...	541	1.147	0.00
59	...	...	168	.356	0.00

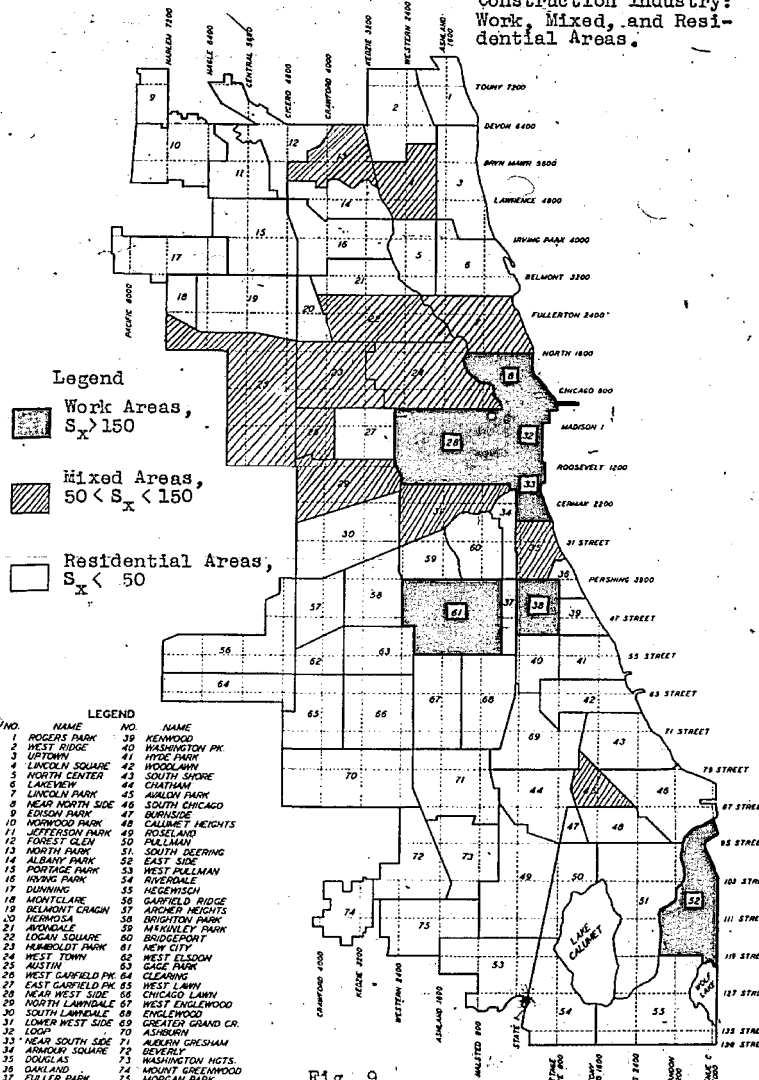
TABLE 12--Continued

Community Areas	Employment By Place of Work		Workers by Place of Residence		Index of Separation
	Number	Per Cent	Number	Per Cent	
60	426	2.801	519	1.100	254.64
61	357	2.348	726	1.539	152.57
62	...	...	28	.059	0.00
63	...	...	287	.608	0.00
64	...	...	28	.059	0.00
65	...	...	88	.187	0.00
66	...	...	524	1.111	0.00
67	402	2.644	667	1.414	186.99
68	172	1.131	1,093	2.317	48.81
69	516	3.393	819	1.736	195.45
70	...	...	4	.008	0.00
71	81	.533	566	1.200	44.42
72	...	...	79	.167	0.00
73	...	...	168	.356	0.00
74	...	...	39	.083	0.00
75	...	...	132	.280	0.00

COMMUNITY AREAS OF CHICAGO

AS ADOPTED BY CENSUS BUREAU, 1940.

Construction Industry: Work, Mixed, and Residential Areas.



LEGEND

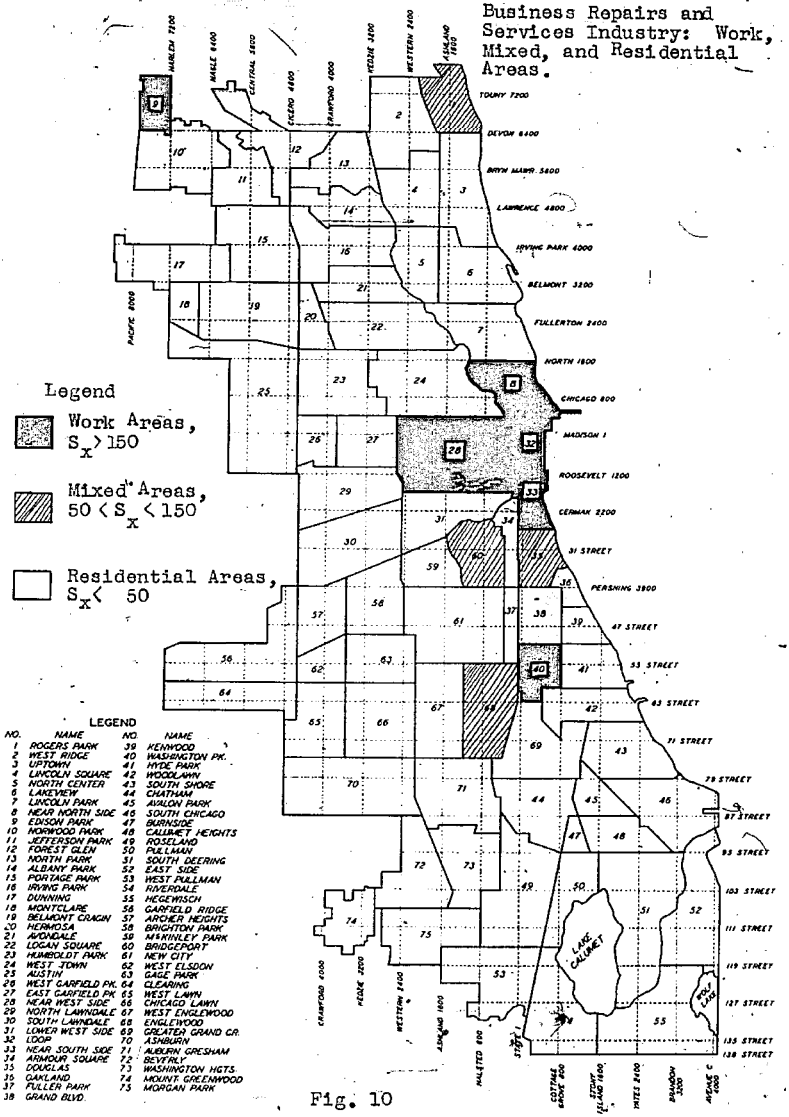
NO.	NAME	NO.	NAME
1	ROGERS PARK	39	KENWOOD
2	WEST RIDGE	40	WASHINGTON PK.
3	UPTOWN	41	HYDE PARK
4	LINCOLN SQUARE	42	WOODLAWN
5	NORTH CENTER	43	SOUTH SHORE
6	LAKEVIEW	44	CHATHAM
7	LINCOLN PARK	45	AVALON PARK
8	NEAR NORTH SIDE	46	SOUTH CHICAGO
9	EDISON PARK	47	BURNSIDE
10	NORWOOD PARK	48	CALUMET HEIGHTS
11	JEFFERSON PARK	49	ROSELAND
12	FOREST GLEN	50	PULLMAN
13	NORTH PARK	51	SOUTH DEERING
14	ALBANY PARK	52	EAST SIDE
15	PORTAGE PARK	53	WEST PULLMAN
16	IRVING PARK	54	RIVERDALE
17	DUNNING	55	HEGEWISCH
18	MONTCLARE	56	GARFIELD RIDGE
19	BELMONT CRAGIN	57	ARCHER HEIGHTS
20	HERMOSA	58	BRIGHTON PARK
21	AVONDALE	59	MCKINLEY PARK
22	LOGAN SQUARE	60	BRIDGEPORT
23	HUMBOLDT PARK	61	NEW CITY
24	WEST TOWN	62	WEST ELSDON
25	AUSTIN	63	GAGE PARK
26	WEST GARFIELD PK.	64	CLEARING
27	EAST GARFIELD PK.	65	WEST LAWN
28	NEAR WEST SIDE	66	CHICAGO LAWN
29	NORTH LAWNDALE	67	WEST ENGLEWOOD
30	SOUTH LAWNDALE	68	ENGLEWOOD
31	LOWER WEST SIDE	69	GREATER GRAND CR.
32	LOOP	70	ASHBURN
33	NEAR SOUTH SIDE	71	AUBURN GRESHAM
34	ARMOUR SQUARE	72	BEVERLY
35	DOUGLAS	73	WASHINGTON HGTS.
36	OAKLAND	74	MOUNT GREENWOOD
37	FULLER PARK	75	MORGAN PARK
38	GRAND BLVD.		

Fig. 9.

COMMUNITY AREAS OF CHICAGO

AS ADOPTED BY CENSUS BUREAU: 1940.

Business Repairs and Services Industry: Work, Mixed, and Residential Areas.



LEGEND

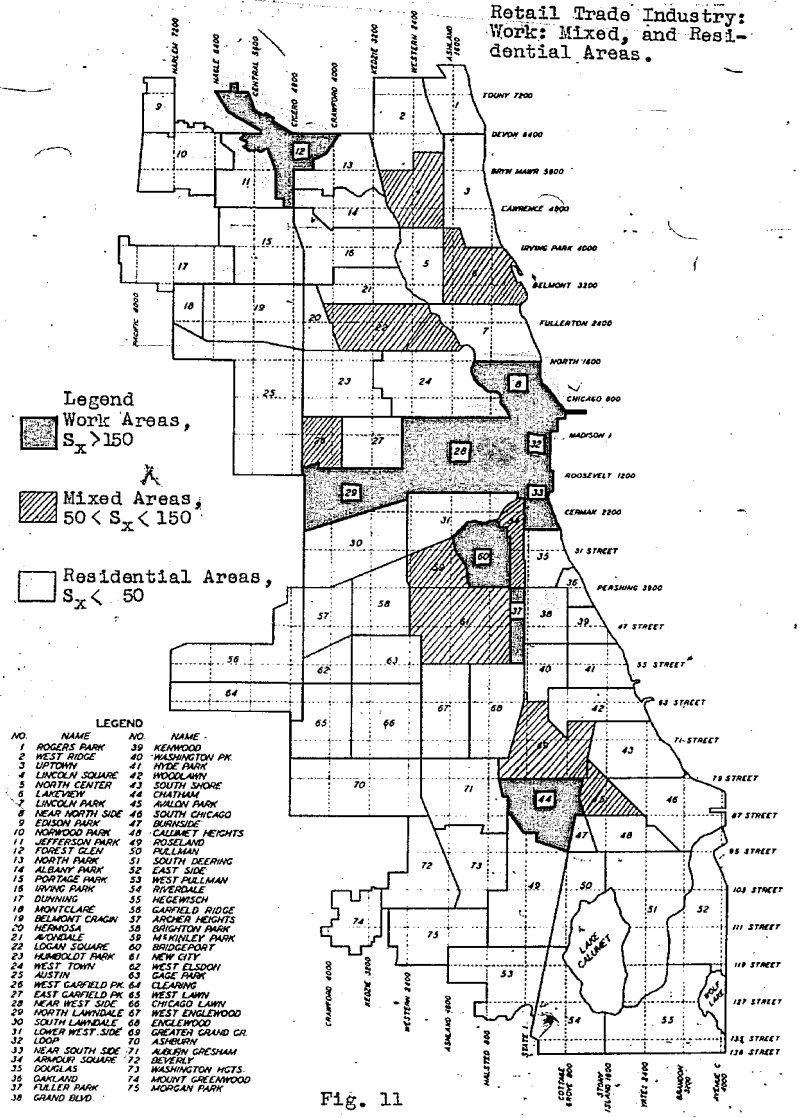
NO.	NAME	NO.	NAME
1	ROGERS PARK	39	KENWOOD
2	WEST RIDGE	40	WASHINGTON PK.
3	UPTOWN	41	HYDE PARK
4	LINCOLN SQUARE	42	WOODLAWN
5	NORTH CENTER	43	SOUTH SHORE
6	LAKEVIEW	44	CHATHAM
7	LINCOLN PARK	45	AVALON PARK
8	NEAR NORTH SIDE	46	SOUTH CHICAGO
9	EDISON PARK	47	BURNSIDE
10	NORWOOD PARK	48	CALUMET HEIGHTS
11	JEFFERSON PARK	49	ROSELAND
12	FOREST GLEN	50	PULLMAN
13	NORTH PARK	51	SOUTH DEERING
14	ALBANY PARK	52	EAST SIDE
15	PORTAGE PARK	53	WEST PULLMAN
16	IRVING PARK	54	RIVERDALE
17	DUNNING	55	HEGEWISCH
18	MONTCLARE	56	GARFIELD RIDGE
19	BELMONT CRAGIN	57	ARCHER HEIGHTS
20	HERMOSA	58	BRIGHTON PARK
21	AVONDALE	59	MCKINLEY PARK
22	LOGAN SQUARE	60	BRIDGEPORT
23	HUMBOLDT PARK	61	NEW CITY
24	WEST TOWN	62	WEST ELSDON
25	AUSTIN	63	GAGE PARK
26	WEST GARFIELD PK.	64	CLEARING
27	EAST GARFIELD PK.	65	WEST LAWN
28	NEAR WEST SIDE	66	CHICAGO LAWN
29	NORTH LAWNDALE	67	WEST ENGLEWOOD
30	SOUTH LAWNDALE	68	ENGLEWOOD
31	LOWER WEST SIDE	69	GREATER GRAND CR.
32	LOOP	70	ASHBURN
33	NEAR SOUTH SIDE	71	AUBURN GRESHAM
34	ARMOUR SQUARE	72	BEVERLY
35	DOUGLAS	73	WASHINGTON HGTS.
36	OAKLAND	74	MOUNT GREENWOOD
37	FULLER PARK	75	MORGAN PARK
38	GRAND BLVD.		

Fig. 10

COMMUNITY AREAS OF CHICAGO

AS ADOPTED BY CENSUS BUREAU, 1940.

Retail Trade Industry: Work: Mixed, and Residential Areas.



LEGEND

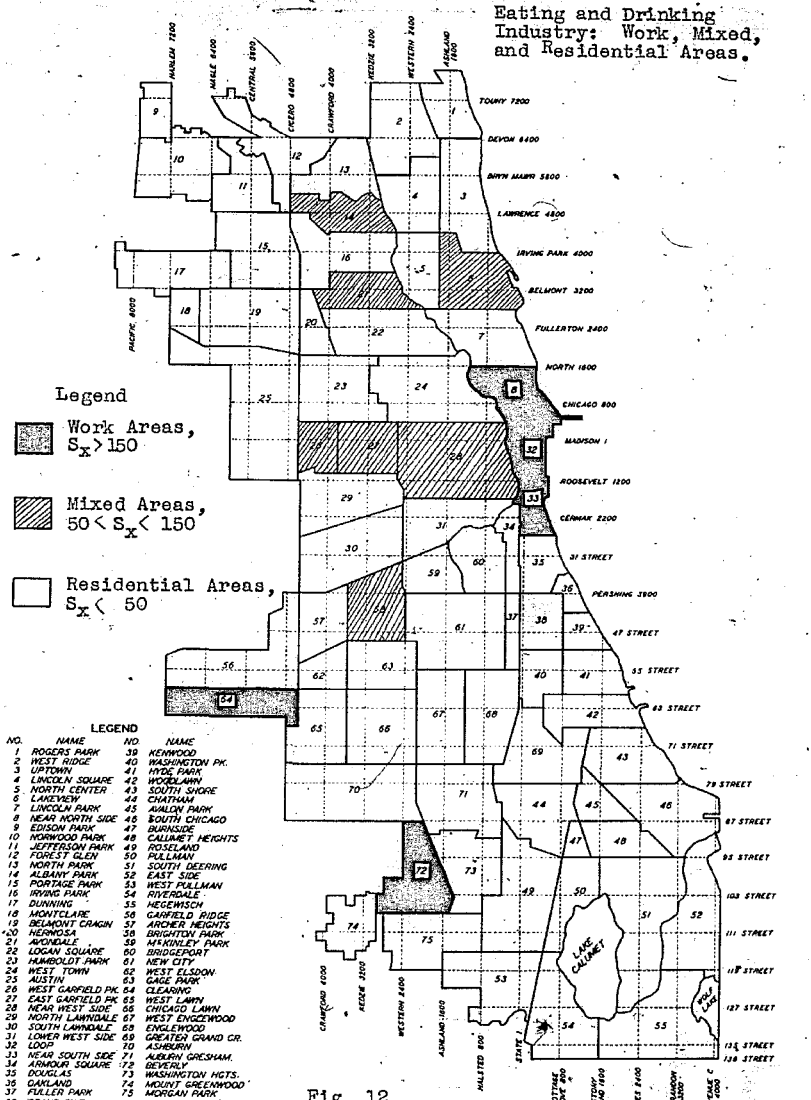
NO.	NAME	NO.	NAME
1	ROGERS PARK	39	KENWOOD
2	WEST RIDGE	40	WASHINGTON PK.
3	UPTOWN	41	HYDE PARK
4	LINCOLN SQUARE	42	WOODLAWN
5	NORTH CENTER	43	SOUTH SHORE
6	LAKEVIEW	44	CHATHAM
7	LINCOLN PARK	45	AVALON PARK
8	NEAR NORTH SIDE	46	SOUTH CHICAGO
9	EDISON PARK	47	BURNSIDE
10	NORWOOD PARK	48	CALUMET HEIGHTS
11	JEFFERSON PARK	49	ROSELAND
12	FOREST GLEN	50	PULLMAN
13	NORTH PARK	51	SOUTH DEERING
14	ALBANY PARK	52	EAST SIDE
15	PORTAGE PARK	53	WEST PULLMAN
16	IRVING PARK	54	RIVERDALE
17	DUNNING	55	HEGEWISCH
18	MONTCLARE	56	GARFIELD RIDGE
19	BELMONT CRAGIN	57	ARCHER HEIGHTS
20	HERMOSA	58	BRIGHTON PARK
21	AVONDALE	59	MCKINLEY PARK
22	LOGAN SQUARE	60	BRIDGEPORT
23	HUMBOLDT PARK	61	NEW CITY
24	WEST TOWN	62	WEST ELSDON
25	AUSTIN	63	GAGE PARK
26	WEST GARFIELD PK	64	CLEARING
27	EAST GARFIELD PK	65	WEST LAWN
28	NEAR WEST SIDE	66	CHICAGO LAWN
29	NORTH LAWNDALE	67	WEST ENGLEWOOD
30	SOUTH LAWNDALE	68	ENGLEWOOD
31	LOWER WEST SIDE	69	GREATER GRAND CR.
32	LOOP	70	ASHBURN
33	NEAR SOUTH SIDE	71	AUBURN GRESHAM
34	ARMOUR SQUARE	72	BEVERLY
35	DOUGLAS	73	WASHINGTON HGTS.
36	OAKLAND	74	MOUNT GREENWOOD
37	FULLER PARK	75	MORGAN PARK
38	GRAND BLVD.		

Fig. 11

COMMUNITY AREAS OF CHICAGO

AS ADOPTED BY CENSUS BUREAU, 1940.

Eating and Drinking Industry: Work, Mixed, and Residential Areas.



LEGEND

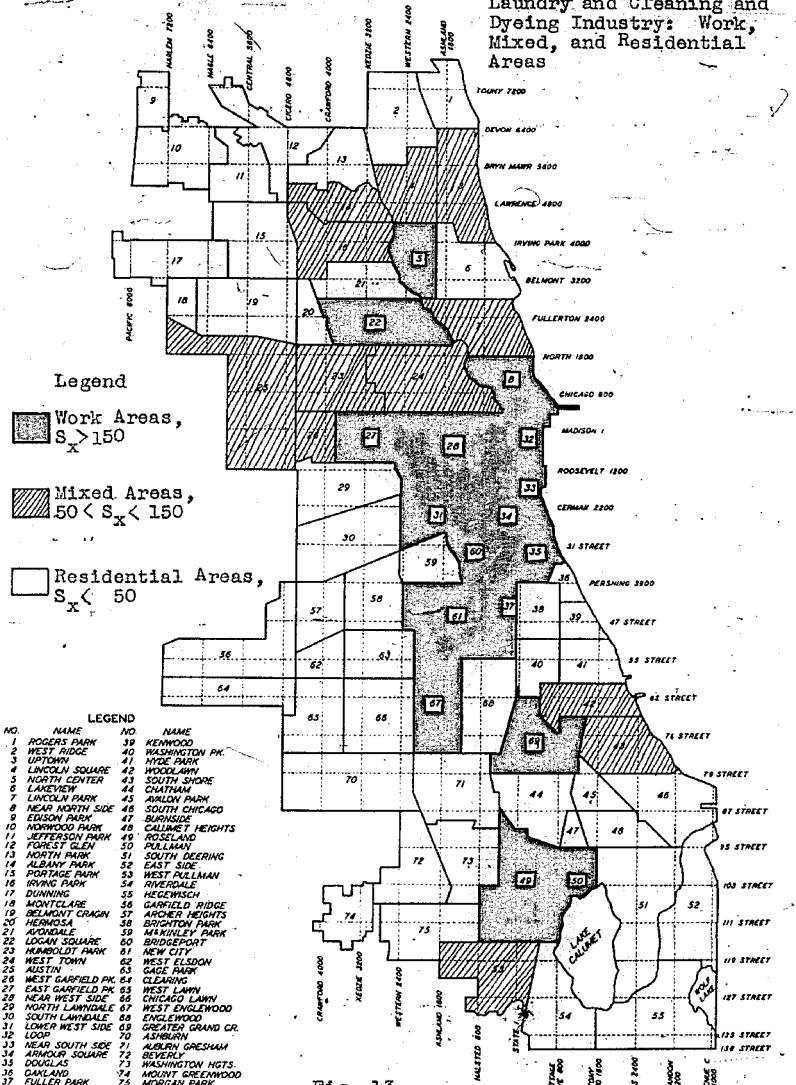
NO.	NAME	NO.	NAME
1	ROGERS PARK	39	KENWOOD
2	WEST RIDGE	40	WASHINGTON PK.
3	UPTOWN	41	HYDE PARK
4	LINCOLN SQUARE	42	WOODLAWN
5	NORTH CENTER	43	SOUTH SHORE
6	LAKEVIEW	44	CHATHAM
7	LINCOLN PARK	45	AVALON PARK
8	NEAR NORTH SIDE	46	SOUTH CHICAGO
9	EDISON PARK	47	BURNSIDE
10	NORWOOD PARK	48	CALUMET HEIGHTS
11	JEFFERSON PARK	49	ROSELAND
12	FOREST GLEN	50	PULLMAN
13	NORTH PARK	51	SOUTH DEERING
14	ALBANY PARK	52	EAST SIDE
15	PORTAGE PARK	53	WEST PULLMAN
16	IRVING PARK	54	RIVERDALE
17	DUNNING	55	HEGEWISCH
18	MONTCLARE	56	GARFIELD RIDGE
19	BELMONT CRAGIN	57	ARCHER HEIGHTS
20	HERMOSA	58	BRIGHTON PARK
21	AVONDALE	59	MCKINLEY PARK
22	LOGAN SQUARE	60	BRIDGEPORT
23	HUMBOLDT PARK	61	NEW CITY
24	WEST TOWN	62	WEST ELSDON
25	AUSTIN	63	GAGE PARK
26	WEST GARFIELD PK.	64	CLEARING
27	EAST GARFIELD PK.	65	WEST LAWN
28	NEAR WEST SIDE	66	CHICAGO LAWN
29	NORTH LAWNDALE	67	WEST ENGLEWOOD
30	SOUTH LAWNDALE	68	ENGLEWOOD
31	LOWER WEST SIDE	69	GREATER GRAND CR.
32	LOOP	70	ASHBURN
33	NEAR SOUTH SIDE	71	AUBURN GRESHAM
34	ARMOUR SQUARE	72	BEVERLY
35	DOUGLAS	73	WASHINGTON HGTS.
36	OAKLAND	74	MOUNT GREENWOOD
37	FULLER PARK	75	MORGAN PARK
38	GRAND BLVD.		

Fig. 12.

COMMUNITY AREAS OF CHICAGO

AS ADOPTED BY CENSUS BUREAU. 1940.

Laundry and Cleaning and Dyeing Industry: Work, Mixed, and Residential Areas



LEGEND

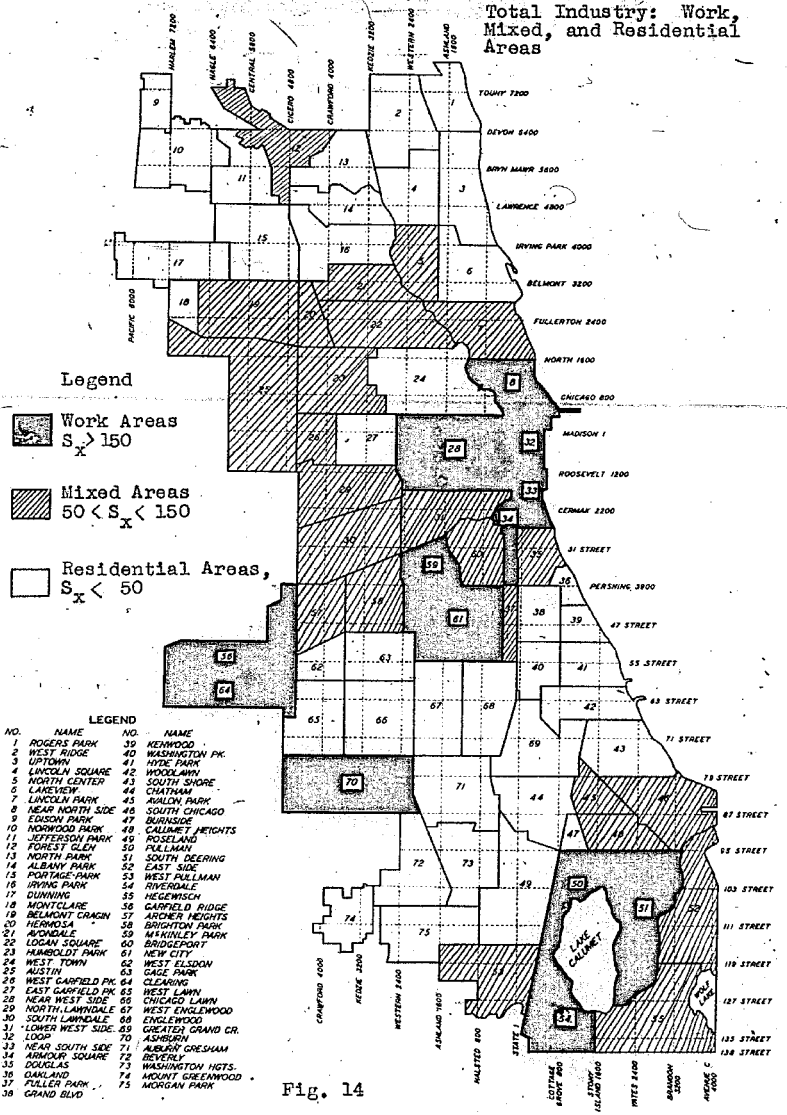
NO.	NAME	NO	NAME
1	ROGERS PARK	39	KENWOOD
2	WEST RIDGE	40	WASHINGTON PK.
3	UPTOWN	41	HYDE PARK
4	LINCOLN SQUARE	42	WOODLAWN
5	NORTH CENTER	43	SOUTH SHORE
6	LAKEVIEW	44	CHATHAM
7	LINCOLN PARK	45	AVALON PARK
8	NEAR NORTH SIDE	46	SOUTH CHICAGO
9	EDISON PARK	47	BURNSIDE
10	NORWOOD PARK	48	CALUMET HEIGHTS
11	JEFFERSON PARK	49	ROSELAND
12	FOREST GLEN	50	PULLMAN
13	NORTH PARK	51	SOUTH DEERING
14	ALBANY PARK	52	EAST SIDE
15	PORTAGE PARK	53	WEST PULLMAN
16	IRVING PARK	54	RIVERDALE
17	DUNNING	55	HEGEWISCH
18	MONTCLARE	56	GARFIELD RIDGE
19	BELMONT CRAGIN	57	ARCHER HEIGHTS
20	HERMOSA	58	BRIGHTON PARK
21	AVONDALE	59	MCKINLEY PARK
22	LOGAN SQUARE	60	BRIDGEPORT
23	HUMBOLDT PARK	61	NEW CITY
24	WEST TOWN	62	WEST ELSDON
25	AUSTIN	63	GAGE PARK
26	WEST GARFIELD PK.	64	CLEARING
27	EAST GARFIELD PK.	65	WEST LAWN
28	NEAR WEST SIDE	66	CHICAGO LAWN
29	NORTH LAWNDALE	67	WEST ENGLEWOOD
30	SOUTH LAWNDALE	68	ENGLEWOOD
31	LOWER WEST SIDE	69	GREATER GRAND CR.
32	LOOP	70	ASHBURN
33	NEAR SOUTH SIDE	71	AUBURN GRESHAM
34	ARMOUR SQUARE	72	BEVERLY
35	DOUGLAS	73	WASHINGTON HGTS.
36	OAKLAND	74	MOUNT GREENWOOD
37	FULLER PARK	75	MORGAN PARK
38	GRAND BLVD.		

Fig. 13.

COMMUNITY AREAS OF CHICAGO

AS ADOPTED BY CENSUS BUREAU, 1940.

Total Industry: Work, Mixed, and Residential Areas



LEGEND

NO.	NAME	NO.	NAME
1	ROGERS PARK	39	KENWOOD
2	WEST RIDGE	40	WASHINGTON PK.
3	UPTOWN	41	HYDE PARK
4	LINCOLN SQUARE	42	WOODLAWN
5	NORTH CENTER	43	SOUTH SHORE
6	LAKEVIEW	44	CHATHAM
7	LINCOLN PARK	45	AVALON PARK
8	NEAR NORTH SIDE	46	SOUTH CHICAGO
9	EDISON PARK	47	BURNSIDE
10	NORWOOD PARK	48	CALUMET HEIGHTS
11	JEFFERSON PARK	49	ROSELAND
12	FOREST GLEN	50	PULLMAN
13	NORTH PARK	51	SOUTH DEERING
14	ALBANY PARK	52	EAST SIDE
15	PORTAGE PARK	53	WEST PULLMAN
16	IRVING PARK	54	RIVERDALE
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20	HERMOSA	58	BRIGHTON PARK
21	AVONDALE	59	MCKINLEY PARK
22	LOGAN SQUARE	60	BRIDGEPORT
23	HUMBOLDT PARK	61	NEW CITY
24	WEST TOWN	62	WEST ELSDON
25	AUSTIN	63	GAGE PARK
26	WEST GARFIELD PK.	64	CLEARING
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30	SOUTH LAWNDALE	68	ENGLEWOOD
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32	LOOP	70	ASHBURN
33	NEAR SOUTH SIDE	71	AUBURN GRESHAM
34	ARMOUR SQUARE	72	BEVERLY
35	DOUGLAS	73	WASHINGTON HGTS.
36	OAKLAND	74	MOUNT GREENWOOD
37	FULLER PARK	75	MORGAN PARK
38	GRAND BLVD		

Fig. 14

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