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ECOLOGICAL ANALYSES IN SOCIAL STUDIES

by

Patrick J. Boyle, S.J.

A Thesis Submitted to the Faculty of the Graduate School
of Loyola University in Partial Fulfillment of
the Requirements for the Degree of
Master of Arts

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LIFE

Patrick J. Boyle, S.J. was born in Chicago, Illinois, March 13, 1932. In June 1945 he was graduated from St. Peter Canisius Elementary School in the same city. He then attended Campion Jesuit High School in Prairie du Chien, Wisconsin and was graduated four years later. In September 1949 he enrolled for his freshman year at Loyola University, Chicago. Having completed one year at the University, he entered the Society of Jesus at the Novitiate of the Sacred Heart, Milford, Ohio on August 8, 1950. He remained at Milford four years and then proceeded to West Baden College, West Baden Springs, Indiana to pursue the study of Philosophy.

In June 1955 he received the degree of Bachelor of Arts in Latin from Loyola University. In August of that year he was enrolled in the same university as a candidate for the degree of Master of Arts in Sociology.

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CHAPTER I

INTRODUCTION

In formulating a definition of the term "ecology" as it is used in the field of sociology, numerous sources must be consulted. In these sources everything from the most general and unscientific notions to the most precise and scientific definitions will be found. It will be well to begin this thesis by sifting out all these unscientific facets and thus formulating a good, working definition of ecology.

The Encyclopaedia Britannica defines ecology as "the study of the relation of organism or groups of organisms to their environment."¹ The term ecology, which is derived from the Greek work, oikos--a house or a place to live, is borrowed from the studies of plant and animal life. It is used in these studies to designate the grouping of interdependent plant and animal life into communities in their natural environment.²

¹ Hugh Robert Mill, "Ecology," Encyclopaedia Britannica (Chicago, 1947), X, 152.

² Paul H. Landis, Introductory Sociology (New York, 1958), p. 99.

In 1921 the term ecology, or more properly human ecology, made its appearance. The sociologists E. W. Burgess and R. E. Park were the first to employ this significant term in their work, An Introduction to the Science of Sociology. With their use of the term "human ecology", the final division of scientific ecology was made. The field of scientific ecology was finally divided into its three phases: plant, animal, and human. ³

Amos H. Hawley, in his book Human Ecology, readily admits that the definition of human ecology is not as precise as it could be. He states that sociologists assumed the responsibility for defining and delimiting the field, but they became lost in their concern for the special and often minute problems of ecological research. Nevertheless he is firmly convinced that human ecology (even though it is inadequately defined) has gained a firm foothold among the social sciences. He admits, however, that its position is in jeopardy unless there is an immediate clarification of definition. ⁴ To aid in such a clarification Professor Hawley defines human ecology as "the study of the form and the development of the community in human population." ⁵

³ Amos H. Hawley, Human Ecology (New York, 1950), pp. 8,10.

⁴ Ibid. 3.

⁵ Ibid. 68.

Continuing in an effort to arrive at a suitable definition of ecology, let us now turn to the elaborated definition cited by James A. Quinn in his article, "The Nature of Human Ecology--Reexamination and Redefinition". It is Professor Quinn's contention that human ecology investigates the sub-social aspects of communal structure and the processes by which this sub-social structure arises and changes. He would then define ecology as:

A specialized field of sociological analysis which investigates (1) those impersonal sub-social aspects of communal structure--both spatial and functional--which arise and change as a result of interaction between men through a medium of limited supplies of the environment and, (2) the nature and forms of the processes by which this sub-social structure arises and changes. ⁶

With such a definition in mind, Professor Quinn then enumerates the numerous problems which ecology will treat. In the science of ecology he includes these very fundamental problems: (1) the typical location of functional areas within a city, insofar as these depend upon ecological processes; (2) the location of villages, towns, and cities in relation to their hinterland areas except as these depend directly upon factors or physical environment; (3) the number of stores

⁶ James A. Quinn, "The Nature of Human Ecology--Reexamination and Redefinition," *Social Forces*, XVIII (December, 1939), 167.

and services within ecological areas, as related both to the consuming population and to one another in functional chains; (4) the typical invasions and successions of populations and functions that result from ecological interaction.⁷

It is clear from Professor Quinn's definition of ecology and from his enumeration of the basic ecological problems that ecology is indeed a specialized social science with a definite and limited set of data and methods.

Another aspect of the science of ecology is brought to light by an analysis of R. E. Park's definition of ecology. Professor Park, a pioneer in the study of human ecology, was firmly convinced that human ecology should concern itself with those processes by which biotic balance, i.e. the life functions, and the social equilibrium are maintained. He also expressed the opinion that ecology should investigate the processes by which social change is brought about. His definition is scientific and nearly comprehensive: "Human ecology is, fundamentally, an attempt to investigate the processes by which the biotic balance and the social equilibrium (1) are maintained once they are achieved and (2) the processes by which, when the biotic balance and the social equilibrium are disturbed, the transition is made from one relatively stable

⁷ James A. Quinn, "Human and Interactional Ecology," American Sociological Review, V (October, 1940), 721.

order to another." ⁸

Walter Firey, another eminent ecologist, emphasized the geographical character of ecology in his definition of this science. He states that, generally speaking, ecology explains the territorial or geographical arrangements that social activities assume; therefore, the task of ecology is to discover, investigate, and analyze the regular patterns which constantly appear in man's adaptations to space. ⁹

From these general definitions by men who have done excellent work in the field of scientific human ecology, one can now draw a number of common notions which will form the basis for the definition of ecology which we have been seeking. First, it should be noted that each of these definitions deals with a social-physical relationship. Each of these definitions looks to the processes which deal with social change; each in some way includes the relation of population to geographical territory. Summarizing these common characteristics one may say that human ecology is a sociological science which investigates and analyzes the social-physical relationship between human population and a given geographical territory; it may be added that ecology will analyze this relationship as it is

⁸ R. E. Park, "Human Ecology," American Journal of Sociology, XLII (July, 1936), 15.

⁹ Walter Firey, Land Use in Central Boston, (Cambridge, 1947), p. 3.

manifested in the adaptation of society to territory and in the processes which lead to ecological change.

It is evident from the foregoing that the essential characteristic of the science of ecology is the social-physical relationship. Therefore, when a sociologist analyzes the structure of an urban community, he must consider this dual aspect. Either he will tend to subordinate the physical to the social in explaining the various divisions in a city; or he will tend to de-emphasize the social and emphasize the physical. The closer a sociologist can correlate these two aspects in his theory of urban structure, the more valid will be his theory.

Thus far a suitable definition of human ecology has been found. It now remains for us to adequately divide the various phases of the study of ecology and to limit the subject of this enquiry to an investigation of just one of these divisions.

According to James A. Quinn in his book, Human Ecology, the study of human ecology can be divided into three broad categories: the structure of areas, the types of processes involved in areal change, and the interpretation of spatial distribution. In this division one sees the various aspects under which ecologists study the social-physical relationship which is at the very heart of ecology.

The first category deals with an examination of the

nature of the various types of social areas and territories: urban and rural communities, metropolitan regions, and so on. It also evaluates the various theories which attempt to explain the structure of these areas. In the second division of human ecology the different processes which bring about changes in areal structures are analyzed. These processes include aggregation and expansion, concentration, centralization, and segregation, invasion and succession, and finally migration and mobility. In other words, it scrutinizes those processes involved in the basic social-physical relationship of ecology. The third phase of human ecology interprets and correlates the spatially distributed data; it studies the spatial distribution of problem phenomena. For example, it correlates the rates of juvenile delinquency, divorce cases and crime within specified areas of a community.¹⁰

It is obvious that the complete study of human ecology is too vast a subject for a work of the scope contemplated here. One's investigation must be limited to a study of a particular phase of human ecology. In this thesis the present writer will not be directly concerned with the various ecological processes which bring about areal change in a community. Nor will he concern himself with an interpretation of spatially distributed data. He will refer to these processes and interpretation of

¹⁰ James A. Quinn, Human Ecology, (New York, 1950), pp.11-13.

data only if his research involves such reference.

In this thesis the author intends to analyze the literature in the ecological field within the scope of social studies. He wishes to review, summate, and evaluate the contributions to community analysis within the ecological framework. He is in other words, concerned with the various analyses of urban areas as stated by leading ecologists and the opinions which other researchers have concerning them. He also intends to evaluate these analyses and opinions.

This limitation of the problem will naturally limit the sources which can be used in this investigation. The writer has, therefore, limited himself to analyzing those community structures which appear in those books or articles which deal with sociology, namely social studies. If, therefore, a city planner issued a monograph in which he set forth his theory of community structure, it would not be considered valid matter for this thesis since the monograph is not classified as a work in social studies and is not intended as a universal theory of city development.

Again this limitation of the problem naturally lends itself to a very logical division of this present work. However, this division will require some explanation. The approach to human ecology is very general. It is applied first to the distribution of the world population especially in those

parts in which the Industrial Revolution had its greatest influence. The roles of the great cities in organizing world markets, developing new divisions of labor between nations, and placing men in specialized occupations is worthy of special consideration.

The approach to ecology then narrows and becomes more particular. A detailed analysis of the ecological processes in relation to the development and structural differences of urban communities follows. This analysis considers the expansion of the city from its central business district outward. ¹¹

Thus far only the starting point in ecological analyses has been mentioned. Spatial distribution is only the raw data of ecological research. Human ecology proceeds further than merely determining the different location of groups and the places where they perform various functions. It does much more than this. It is concerned with the interactive relationship between individuals and groups and the way these relationships influence, or are influenced by, particular patterns and processes. It is again noteworthy how the social-physical relationship is manifested in ecological research.

Ecology progresses even further than this. Since

¹¹ Carl A. Dawson and Warner E. Gettys, An Introduction to Sociology, (New York, 1948), p. 138.

preferences and prejudices associated with various differences serve to bring people socially or spatially together or keep them apart, the science of human ecology also concerns itself with the social amenities which tend to unite various groups and individuals and with the social errors which tend to separate these same groups and individuals. It is, therefore, concerned with the social organization insofar as it influences, or is influenced by, the spatial distribution of people or institutions. Last, but not least, it is concerned with social change insofar as it brings about ecological change. ¹²

From this one can see the numerous facets and divisions of ecology which could be discussed in this thesis. The topic, however, has been limited to the various theories and interpretations of the urban area and community. In Chapter II of this thesis, therefore, the present writer intends to give a synopsis of these theories, as they have been proposed by leading social ecologists. Chapter III will be devoted to the opinions which other ecological researchers and sociologists have concerning the ecological theories which were synopsized in Chapter II. Chapter IV will consist of a synthesis of the ecological theories and the opinions expressed in Chapter III. In Chapter V the various values and weaknesses

¹² Noel P. Gist and L. A. Halbert, Urban Society, 4th ed. (New York, 1958), pp. 75-76.

of the ecological theories will be considered as well as our own evaluation of basic ecological doctrine.

CHAPTER II

THEORIES OF URBAN GROWTH AND DEVELOPMENT

It would be not only unfair but also erroneous to say that the development of human ecology was the work of one man. There is no doubt that the writings of both Darwin and Malthus gave ecological research and study a new emphasis and impetus. Friedrich Ratzel and other early anthropogeographers also undoubtedly contributed to the development of ecology. The great work of Von Thünen, Der isolierte Staat, provided a theoretical framework for the understanding of successive concentric zones of land use in any given region.¹

Modern ecologists owe a great debt of thanks to their numerous predecessors. They are indebted to the developments in demography during the nineteenth century and the accurate descriptions of human settlements, furnished by geographers, together with the beginnings of social surveys of specific communities, especially in England. All these developments,

¹ J. H. Von Thünen, Der isolierte Staat, in Beziehung auf Landwirtschaft und Nationalökonomie, (Hamburg und Rostock, 1863).

studies, analyses, and descriptions have set the stage for the formation of principles and the perfection of methods out of which the ecological studies of the last generation have grown. The earlier works of Henry Mayhew and Charles Booth, both British sociologists and ecologists, were also instrumental in the formation of modern ecology. Mayhew in his work, London Labour and the London Poor, drew a series of maps which depict the spatial distribution of social phenomena in England. Booth, in his Survey of the Life and Labor of the People of London, furnished a notable example of the importance of areal study of the great metropolis of London.² All of these early works had a profound influence on the most recent researches of human ecology.

Even with all these notable advances, it was not until the twentieth century that the study of human ecology came into its own. It was not until the beginning of the present century that a true ecological method was used. In 1915 C. J. Galpin in his work, The Social Anatomy of an Agricultural Community, was the first to employ the ecological method.³ Although this was an extremely crude attempt and did not contribute much toward the basic formation of ecological methodo-

² Louis Wirth, "Human Ecology," in Readings in Sociology, ed. Alfred Mc Clung Lee (New York, 1951), p. 140.

³ C. J. Galpin, "The Social Anatomy of an Agricultural Community," Agricultural Experiment Station of the University of Wisconsin, Research Bulletin 34 (May 1915).

logy, nevertheless Galpin's work exercised a great and moving influence on subsequent community studies. ⁴

The foremost pioneers in the study of human ecology as we know it today were Robert Park and Ernest Burgess. In his book, Man and Society, Samuel Koenig attributes the development of modern-day ecology to Park and Burgess and their disciple R. D. McKenzie. Koenig says that these three men formulated the basic principles of ecology; they also launched ecology as a field of true sociological research; they left to their many students the task of demonstrating the fruitfulness of the ecological approach and methodology to the study of human communities. ⁵

In 1915 one of these pioneers, Robert Park, published a paper on "The City: Suggestions for the Investigation of Human Behavior in City Environment." It was in this paper that what subsequently became recognized as the ecological study of the human community was systematically formulated. It was with this paper that modern study of human ecology was born. ⁶

This was, however, only the first step, for it was not until 1923 that an actual ecological analysis of a human

⁴ Samuel Koenig, Man and Society, (New York, 1957), p. 190.

⁵ Ibid.

⁶ Louis Wirth, "Human Ecology," in Readings in Sociology, p. 140.

community was proposed. In December of that year Ernest W. Burgess read a paper, "The Growth of the City: An Introduction to a Research Project." before the annual meeting of the American Sociological Society. This paper stated a new theory with regard to urban development. For the first time the Burgess ecological hypothesis was stated publicly. In this hypothesis Burgess stated that an urban community typically exhibits five concentric circular zones whose center lies in the retail business district.

This chart represents an ideal construction of the tendencies of any town or city to expand radically from its central business district--on the map "The Loop" (I). Encircling the downtown area there is normally an area in transition which is being invaded by business and light manufacturing (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 to 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 commuters' zone--suburban areas, or satellite cities--within a thirty to sixty minute ride of the central business district. ⁷

⁷ Robert E. Park, Ernest W. Burgess, and Roderick D. Mc Kenzie, The City (Chicago, 1925), p. 50.

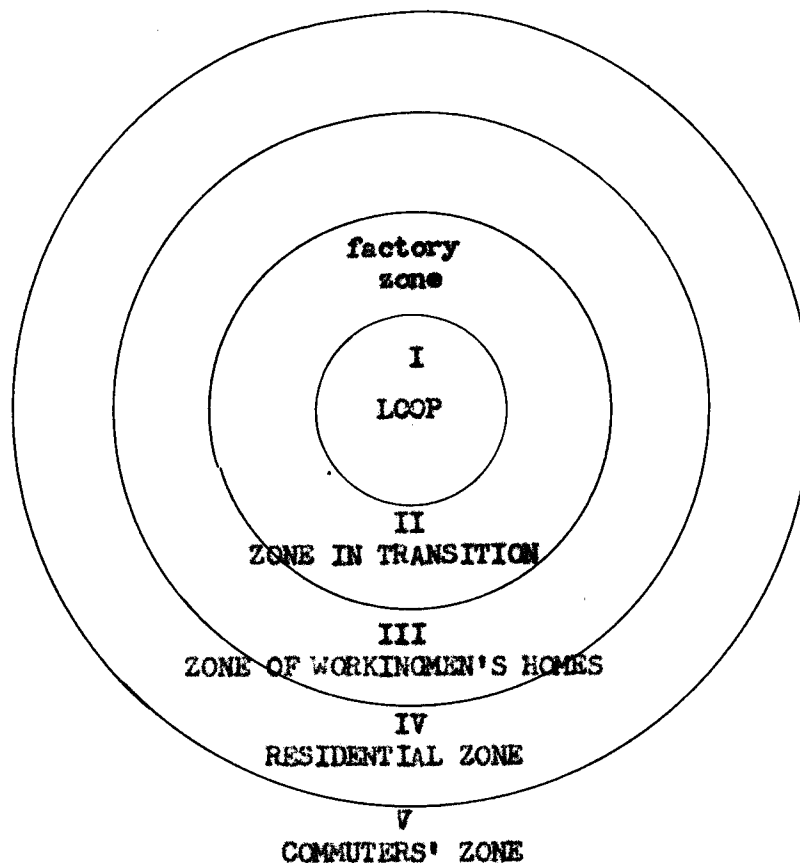


Figure 1 Concentric Zone Theory ⁸

The Burgess hypothesis of urban growth and development can then be interpreted in the following manner. An urban zone or area is but one of a series of concentric bands which encircle the dominant center of the city. Each of these zones consists of a natural area or of a mosaic of such natural areas. ⁹ Each zone has its own characteristic and distinctive

⁸ Ibid., 51.

⁹ A zone is called a "natural area" by Burgess because "it comes into existence without design, and performs a function, which function, as in the case of the slum, may be contrary to anybody's desire," Robert E. Park, "The City as a Social Laboratory," in Chicago: An Experiment in Social Science Research, ed. T. V. Smith and L. D. White (Chicago, 1929), 9.

complex of population, buildings, and social action. Each of these zones can be divided and sub-divided into many smaller areas and social groupings which also have their own unique characteristics. The following chart illustrates these groupings and zones as they appear in the city of Chicago. Included in these numerous sub-divisions we find the underworld, the roomers, the immigrant colonies such as Little Sicily, Deutschland, and others, and the black belt. There is

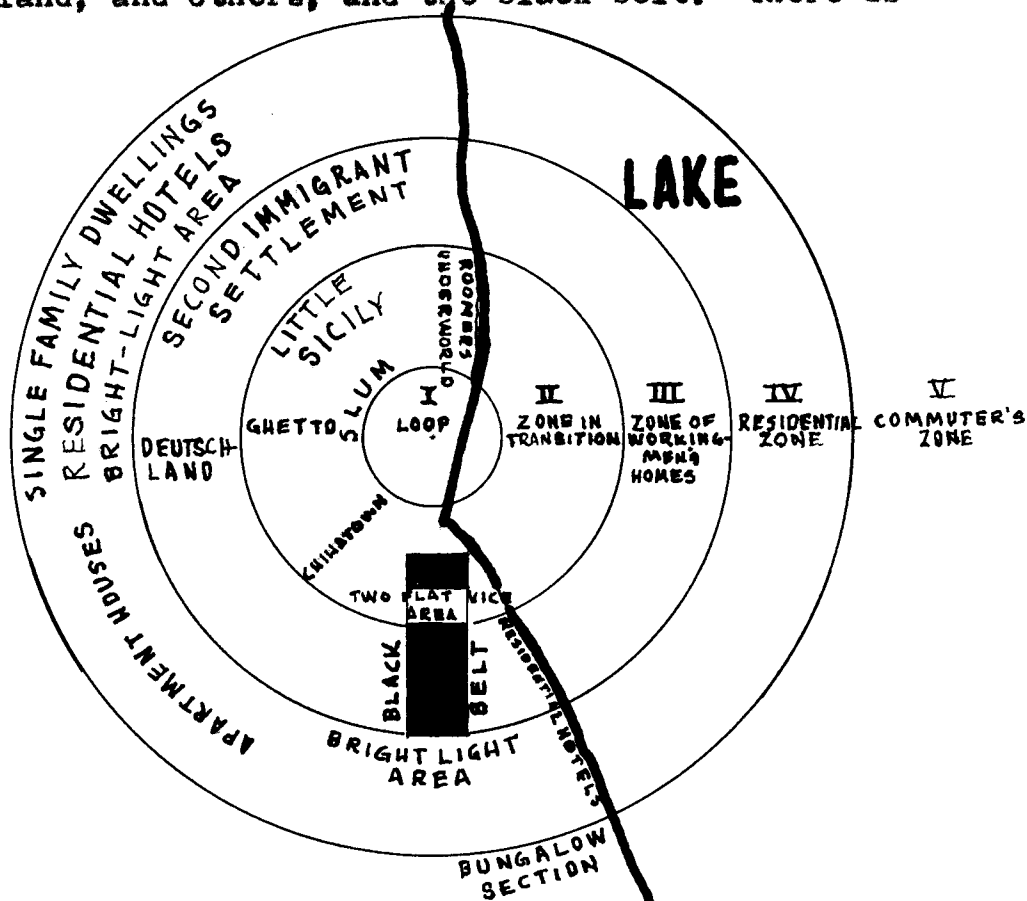


Figure 2 Concentric Zone Theory ¹⁰

¹⁰ Park, Burgess and Mc Kenzie, 50.

a constant interplay between these various zones. The various zones constantly press and encroach upon one another. Invasion of one zone by the people of another zone is continually occurring. It was the contention of Burgess that the developing business and light manufacturing sections of a city tended to push out from the center of the city and invade and encroach upon the residential districts; at the same time, families are always responding to the appeal of more attractive residential districts, further and further removed from the center of the city.¹¹ In this hypothesis of Burgess we notice once again the essential element of ecology--the basic relationship between human beings and geographical territory.

After a number of years and new research on the problem, Burgess restated his zonal hypothesis. In 1929 he published an article entitled, "Urban Areas". In this article he states his hypothesis again by saying that, in the absence of counter-acting factors, the assumption is advanced that the modern American city takes the form of five concentric urban zones.¹²

In Zone I one finds the heart or focal point of the city; this zone is called the "Central Business District". It is in this zone that we find the center of the commercial, social,

¹¹ E. W. Burgess, "Residential Segregation in American Cities," The Annals of the American Academy of Political and Social Sciences, CXL (November, 1928), 1-2.

¹² R. E. Park, "The City as A Social Laboratory," p. 114.

and civic life of the modern American city.¹³ According to Burgess the heart of this district is the downtown retail district with its department stores, shops, office buildings, clubs, banks, hotels, and its headquarters of economic, social, civic, and political life. The Wholesale Business District with its markets, warehouses, and storage buildings encircles this area.¹⁴ In the Burgess hypothesis this zone is thronged with people both during the day and at night. Even though it is constantly crowded with people, it has few truly permanent inhabitants. Burgess, in speaking of this district says:

By day its skyscrapers and canyon-like streets are thronged with shoppers, clerks, and office workers. During the evening, crowds of pleasure seekers swarm into theatres, restaurants and cafes and out again into the blaze of the white way of the streets with their towering edifices brilliantly adorned with displays of multi-colored signs of salutation and invitation. Aside from transients in hotels, homeless men as hoboes and "home guards" (casual resident workers), and dwellers in Chinatown, the central business district has few inhabitants.¹⁵

The second of Burgess' five urban zones is called the Zone in Transition. This is another concentric zone which completely surrounds the central business district. The

13 Ibid.

14 Ibid.

15 E. W. Burgess, "Residential Segregation in American Cities," p. 2.

transitional character of this zone is due to a number of factors, notably the residential deterioration in this area. This residential deterioration is brought about by the encroachment of business and industry from Zone I. This second zone has a factory district for its inner belt and an outer ring of deteriorating neighborhoods of immigrants, or rooming house districts, of gambling houses, of vice, and of breeding places of crime. In this zone one finds the greatest concentration of poverty, bad housing, juvenile delinquency, family disintegration, physical and mental disease. Families and individuals remain in this environment only until they reach a state of relative prosperity.¹⁶ Even so, however, this area is not one of complete deterioration and despair, for there is an element of regeneration about it. "The area of deterioration, while essentially one of decay, of stationary or declining population, is also one of regeneration, as witness the mission, the settlement, the artists' colony, radical centers--all obsessed with the vision of a new and better world."¹⁷ Even in this chaotic second zone a number of redeeming factors can be found!!

As one approaches Zone III one gets increasingly closer to the residential section of the city. This third zone is

¹⁶ E. W. Burgess, "Urban Areas," pp. 114-116.

¹⁷ Park, Burgess, and Mc Kenzie, The City, p. 56.

the area of the Independent Workingman's Homes. In this zone one finds that the inhabitants are second immigrant families and individuals. These particular inhabitants desire to live near, but not too near, their places of employment. It is the contention of Burgess that, while the father of the family in this zone works in the factory, the son and daughter are employed in the Loop and frequent dance halls and motion picture theatres of the bright-light area. It is noteworthy that the children of families in Zone III plan to set up their own homes in Zone IV after their marriage.¹⁸ In general the inhabitants of Zone III are characterized as predominantly factory and shop workers who are skilled in their trade and extremely thrifty by nature.¹⁹

Zone IV brings us to the pseudo-residential district. It is called by Burgess and others the Zone of Better Residences. Here dwell the great middle classes of native-born Americans--the small business men, professional people, clerks, and salesmen. Burgess says that, in Chicago, apartment house and residential hotel areas are replacing the communities of single homes. Within these hotel areas local business centers are gaining such a great deal of prominence that they have been called "satellite loops." A bank, one or more United

¹⁸ Burgess, "Urban Areas," p. 116.

¹⁹ Park, Burgess and Mc Kenzie, The City, p. 56.

Cigar Stores, a drug store, a high-class restaurant, an automobile display, and a motion picture theatre are usually found in these "satellite loops". With a few additions, notably a dancing palace, a cabaret, and a smart hotel, these satellite loops quickly become the typical "bright-light areas" which attract city wide attendance. In this fourth zone the population is predominately female; men are definitely outnumbered by women. In this zone one finds that independence in voting is practiced and encouraged; there is wide reading of both newspapers and books, and often women are elected to important public offices.²⁰ Education is at a higher level in this zone. All the residents have at least a high school education and conform to the ideals of rural American society. Commenting on this zone Burgess says, "The residents have had high school if not college education. Their intellectual status is manifested by the type of books and magazines in the home, by the prevalence of women's clubs and by independence in voting. This is the home of the great middle class with ideals still akin to those of rural American society."²¹

The Commuters' Zone or true residential district is the fifth and last zone suggested by Burgess. It is made up of a ring of small cities, towns, and residential hamlets which

²⁰ Burgess, "Urban Areas," p. 116-117.

²¹ Burgess, "Residential Segregation," pp. 2-3.

encircle the areas of better residence. This zone could be characteristic as somewhat matriarchal, i.e. the mother and the wife becomes the center of family life because the majority of men residing there spend the day, working in the Loop, and return home only in the evening. A later follower of Burgess, E. R. Mowrer, states that the Commuters' zone is definitely the domain of the matricentric family.²² A further note or characteristic of this zone is the segregated nature of the various communities. These numerous segregated communities manifest a variety of interests and aims. They include in their range every type of community from incorporated villages run in the interest of crime and vice to those with true wealth, culture, and public spirit.²³ There is a further combination of elements in this zone which has been found in no other zone. In the Commuters' zone is a combination of village atmosphere with a downtown atmosphere. Burgess tells us that this commuters' zone comprises the suburban districts of the city which combine the atmosphere of village residence with access by rapid transit or by automobile to the downtown metropolitan center for work, shopping, and entertainment.²⁴

This, then, would be the general outline of the zonal

²² E. R. Mowrer, Family Disorganization, (Chicago, 1927), p. 113.

²³ Burgess, "Urban Areas," p. 117.

²⁴ Burgess, "Residential Segregation," p. 4.

theory of urban development as put forward by Professor Burgess. After propounding this theory Burgess had no doubt in his mind about the universal validity and application of his concentric zone theory. Taking Chicago as an example, Burgess outlined his theory and stated apodictically that this zonal hypothesis was applicable to other metropolitan cities in the United States. He willingly admits that the pattern of growth or expansion which he proposed was an ideal picture and that in reality neither Chicago nor any other city followed it exactly. Despite this fact, however, he held tenaciously to the conclusion that his concentric zone hypothesis of urban development was universally valid. ²⁵

To explain the variations from the ideal pattern which he outlined in his theory, Professor Burgess described three general causes. He presented and emphasized geographical elevation as the chief factor that complicates the urban zonal pattern.

In cities of hills and valleys like Montreal or Seattle, which have been examined for comparative purposes, it is interesting to note that elevation introduces another dimension into the zonal pattern. In a plains city the favored residential sections are farthest out; in a hills city, farthest up. The zonal pattern still holds in Montreal and Seattle, but with the poor in the valleys, the well-to-do on the hillsides, and the wealthy on the hilltops. ²⁶

²⁵ Park, Burgess, and Mc Kenzie, pp. 51-52.

²⁶ Burgess, "Urban Areas," p. 119.

Geographically speaking, elevation is an almost negligible factor in Chicago. Therefore the zonal pattern outlined by Burgess is only slightly deranged and distorted. It is interesting to note, however, that even slight elevations like the "Ridge" in Beverly Hills are seized by the well-to-do as more favorable for residence.

The second cause of zonal distortion or deviation from the ideal pattern established by Burgess is the proximity of a body of water. This is the factor which alters the general theoretical pattern for Chicago, as well as for Toronto and Cleveland. In all these cases a lake causes the scheme of concentric circles to be modified to form semicircles. Besides the lake or other bodies of water, various other natural barriers like rivers and artificial barriers like elevated railroads have greatly influenced community structure and development. An example will perhaps clarify this point. The Chicago River, a typical natural barrier has divided the city of Chicago into three distinct sections: the North Side, the West Side, and the South Side. Each of these sections has developed to a considerable extent independently of the others. Each of these sections has formed almost a city within a city or a community within a community. It is not surprising, then, that each of these sections of Chicago has a specialized function in the community; each section is the habitat of more or

less divergent racial and cultural groups. There is a marked degree of sectional consciousness in these sections as is evidenced by the existence of the South Park Board, the West Park Board, and the Lincoln Park Board, and by the customary territorial recognition of these sections in political action.²⁷

Again using the city of Chicago as an example, one can point out the divisive nature of certain artificial barriers. In Chicago the elevation of railroad lines has formed isolated and independent communities which tend to halt the process of radial progress and advance. This complicated system of railroad lines has produced much the same effect as the Chicago River. These railroad lines, an artificial barrier, have created a number of more or less isolated and self-sufficient communities. These walled-in local communities tend to resist the changes involved in the pressure of radial extension outward from the center of the city because of the derived social and economic solidarity which the railroads have created.²⁸

These natural and artificial barriers, according to Burgess, have prevented to a degree the free movement of business, industry, and population in accordance with the principle of radial extension from central business district to the

²⁷ Burgess, "Urban Areas," p. 200.

²⁸ Ibid., 120-121.

peripheries of the city. ²⁹

The final distortion factor of the zonal pattern suggested by Burgess is the existence of a network of streets and transportation routes. This factor plays a large role in distorting the zonal pattern in Chicago and a number of other important cities. In his analysis of Chicago, Burgess points out that there is a predominantly checkerboard street plan in the city. Such a street plan tends to lay out city transportation routes on or near the main arterial streets. Radial expansion in a series of concentric zones is thus hindered.

A natural tendency under the checkerboard plan has been to lay out the local system of street railroads and rapid transportation on or near the main arterial streets running north and south, east and west. The result has been to accelerate the force of radial expansion on arterial streets running at right angles to the Central Business District, but to retard and even impede the tendency to radial expansion on the oblique angles which ran across rather than with the checkerboard street formation.³⁰

With this the present writer concludes the Burgess theory of urban development. He has enumerated all the main points of this hypothesis along with Burgess' own statements that this theory is absolutely valid and universal in its application.

In 1939 another theory of urban structure and development appeared on the scene. In that year Homer Hoyt proposed

²⁹ Ibid., 119-120.

³⁰ Burgess, "Urban Areas," p. 121.

his sector theory of community development.

Hoyt had no intention of supplanting the concentric zone theory of Burgess with this new theory. The sector theory actually originated in an attempt to overcome the demonstrable inadequacies of the Burgess theory.³¹ According to Hoyt and numerous other ecologists, the concentric zone theory was in need of modification and alteration. Speaking of the Burgess hypothesis, Hoyt said, "Thus, the concentric circle theory of land use, while convenient as a starting hypothesis for a pattern of land uses, is subject to modification."³² Much the same thought is expressed in another work written by Hoyt and Welmer. Both of these men are of the opinion that the sector theory was not designed to supplant the general explanation contained in the radial and concentric circle theories, but rather to indicate probable land uses by a study of past developments.³³ Whether or not Hoyt actually believed this will be discussed in a later chapter. What concerns us now is some commentary and analysis of Hoyt's sector theory.

³¹ Walter Firey, Land Use in Central Boston (Cambridge, 1947), p. 8.

³² Homer Hoyt, The Structure and Growth of Residential Neighborhoods in American Cities (Washington, 1939), p. 23.

³³ Arthur M. Welmer and Homer Hoyt, Principles of Urban Real Estate (New York, 1939), p. 61.

The sector theory and the concentric zone theory are similar to the extent that both consider the city as a circle. At the center of this circle lies the central business district. The main difference between these theories lies in the analysis which each gives to explain urban development outward from the central business district. According to Hoyt the residential neighborhoods extend outward from this center in the form of sectors, and not in the form of circles as Burgess would have it. The preferred neighborhoods, those with the highest rent, compose one or more sectors. Districts which are intermediate in rent, position, and so on, occupy another sector, or frequently tend to be located in the high rent sector. Low rent residential areas occupy a third sector. Thus we find that the highest rent areas of a city tend to be located in one or more sectors of the city. There is a gradation of rentals downward from these high rental areas in all directions. Intermediate or middle-class rental areas are grouped around the high rent sectors on one or more sides. It often happens that the intermediate sectors are located in the same sector as the high rental areas. The other sectors of the city are composed of low rent areas which extend from the center to the periphery of the city.³⁴ Each type of residential area, therefore, is embraced in one or more sectors.

³⁴ Hoyt, p. 76.

Hoyt's explanation for this idealized pattern is not complex. He merely concludes that this idealized pattern consists in the fact that the natural trend of high rent areas is outward.

High rent or high grade residential neighborhoods must almost necessarily move outward toward the periphery of the city. The wealthy seldom reverse their steps and move backward into obsolete houses which they are giving up. On each side of them is usually an intermediate rental area, so they cannot move sideways. As they represent the highest income group, there are no houses above them abandoned by another group. They must build new houses on vacant land. Usually this vacant land lies available just ahead of the line of march of the area, because, anticipating the trend of fashionable growth, land promoters have either restricted it to high grade use or speculators have placed a value on the land that is too high for the low rent or the intermediate rental group. Hence the natural trend of the high rent area is outward, toward the periphery of the city in the very sector in which the high rent area started. ³⁵

From this it is certainly obvious that Hoyt was not overly concerned about commercial and industrial land uses of urban structure. However, we should not be deceived into thinking that he ignored these uses; even these uses found a place in his revision of the Burgess hypothesis.

From experience Hoyt was forced to admit along with Burgess that the wholesale and light manufacturing areas adjoin the central business district. Hoyt, however, modified the

³⁵ Ibid., 116.

Burgess theory on the shape that the light manufacturing and wholesale areas take. Hoyt clearly states that this area does not encircle the business district, but rather forms a separate sector. "This zone does adjoin the central business district, but it usually does not entirely encircle it. . . In Chicago at one time prior to 1900, the wholesale district did almost entirely enclose the central business district. Now, however, the wholesale area in Chicago lies mainly to the west of the Loop." ³⁶

Hoyt attributes a further modification of Burgess' theory to historical circumstances. At one time the heavy manufacturing area almost surrounded the central business district. The main reason for this was transportation. In the nineteenth and early twentieth centuries, industries had to be situated near water or rail transportation and near the labor supply. Now all this has changed. The present pattern of industrial land use is so different from the original concentric zone pattern that there is a serious doubt as to whether there is any general tendency for a concentric zone of heavy industry to surround the central business district. It is Hoyt's contention that heavy industry now tends to follow railroad lines along river valleys or lake or ocean fronts in long bands of growth. He gives a number of interesting examples to prove

³⁶ Ibid., 20.

this point. "The pattern of heavy industry today, instead of being concentrated near the central business district tends to follow river valleys as in Youngstown, Ohio, and Pittsburgh; and river fronts, as along the Niagara River at Buffalo and the Detroit River at Detroit; or lake fronts and river tributaries to lakes, as in South Chicago, the Calumet region, Indiana Harbor, and Gary in the Chicago region; or bays or deep tidal waters as the Hudson, the East River in New York, and the Delaware River at Philadelphia; or outer belt lines as in Chicago, Detroit, and others.³⁷ This change is due to a historical and environmental cause. Hoyt attributes it to the better transportation facilities, the low tax rates, and the low building costs found on the periphery of cities.³⁸

In spite of the number of differences which Hoyt points out between the concentric zone hypothesis and the sector theory, still these differences were not Hoyt's chief concern. He was more interested in an analysis of the different types of residential areas. Both Hoyt and Burgess agree that the residential areas are situated outside the central business district, but Hoyt disagrees with Burgess as to the symmetry of this pattern. This very basic point forms the main difference between the theories of Hoyt and Burgess.

³⁷ Ibid., 23.

³⁸ Ibid., 20.

Hoyt, like Burgess, was interested in discovering a basic recurrent pattern which would aid him in analyzing residential areas. His first step, therefore, in analyzing residential neighborhoods consisted in determining such a pattern of residential neighborhoods. In other words, he wondered if there was any pattern by which the poor homes are segregated from the rich. Are houses of similar types and rental range located close together, or is there an indiscriminate mixing? After having considered such patterns as the pattern of owner occupancy, the pattern of the condition of the structure, the pattern of dwelling units having no private bath, and others, Hoyt found that a single factor, rent, is representative of the series of other housing factors. He concluded from this, therefore, that rent would be a reliable factor in determining the structure of residential neighborhoods. He concludes, "Since the average rent of dwelling units in a block reflects the characteristics of the block which can or cannot be measured, patterns of rent may be fully relied upon to serve as a guide to the structure of residential neighborhoods and areas." ³⁹

Hoyt's researches pointed to a somewhat unique pattern of rent areas for most urban areas. None of the cities which he analyzed had high-rent areas of the same size, shape, or

³⁹ Ibid. 72.

in the same location with respect to the center. They all varied in some manner. Topography, the rapidity of urban growth, the location of industries and of transportation facilities, all produced different rental area patterns.⁴⁰

Hoyt did, however, find a general pattern of rent area that applied to all cities. This pattern is not in the form of rectangular figures with sharply defined segments. Nor is it in the form of successive concentric circles with the lowest rent area near the center of the city and the highest on the periphery.⁴¹

During his research Hoyt conducted an independent investigation of some nineteen rental area maps. The purpose of this investigation was to show in a brief report the main trends and tendencies of rental areas in American cities. From this investigation Hoyt concluded that certain facts concerning city structure are revealed by a careful analysis of rental areas. Among his conclusions on city structure we find the following: (1) universally the highest rental area is located on one or more sectors on the side of the city; (2) the important high rental areas take on a wedge-shaped form which extends in certain sectors along radial lines from the center of the city to the periphery; (3) intermediate

⁴⁰ Ibid., 73.

⁴¹ Ibid.

rental areas, or areas falling just below the highest rental areas, tend to surround the highest rental areas or to adjoin such areas on one side; (4) in some special instances intermediate rental areas are found on the periphery of other sectors of the city besides the ones in which the highest rental areas are located; (5) in almost every city there exist low rental areas which extend from the center to the edge of the settlement on one side or in certain sectors of the city.⁴² These conclusions form the basic tenets of Hoyt on the subject of residential neighborhoods.

From this investigation Hoyt concludes that rental areas in American cities conform to a pattern of sectors rather than concentric circles as was suggested earlier by Burgess. On this point Hoyt leaves no doubt as to his disagreement with the earlier Burgess hypothesis. "From the evidence presented, therefore, it may be soundly concluded that rent areas in American cities tend to conform to a pattern of sectors rather than of concentric circles."⁴³

From this basic difference Hoyt argues to a number of other conclusions which differ from the basic position presented by Burgess. Hoyt believed that, once a sector developed as a high or low rent residential area, it remained so for

⁴² Ibid., 75-76.

⁴³ Ibid., 76.

long distances and did not, as Burgess thought, change into a higher rent area. On this basis, then, Hoyt held that once a sector of a city developed as a low rent residential area, it tended to retain that character for long distances even after that sector is extended through the process of the city's growth. A further ramification of the same conclusion concerns high rental areas. If a high rent area becomes established in another sector of the city, it will then tend to grow or expand within that sector; thereafter new high grade areas will tend to establish themselves in the sector's outward extension. ⁴⁴ Even in the face of these conclusions Hoyt remained a realist. He did not completely rule out an upward gradation of rents. On the contrary, he faced the facts of his own researches. He simply confined the gradation of rental areas to one or more sectors and did not apply it to the whole city as Burgess had done.

The rental area maps fail to reveal a series of concentric circles of rent areas with a gradation of rents upward from the center to the periphery in all sections of the city. The upward gradation is confined to certain sectors in which high rent or intermediate rental areas are located, but there are always sectors in which there is no such upward gradation of rents. ⁴⁵

After discovering and analyzing this sector pattern in

⁴⁴ Ibid., 114.

⁴⁵ Ibid., 76.

city structure, Hoyt presented an article which appeared in the Insured Mortgage Portfolio. In this article Hoyt listed several broad, basic principles which guide the growth of urban residential neighborhoods, particularly those affecting the higher-grade neighborhoods. These general principles of Hoyt can be summarized under any number of general heads. He states in general that the growth of such areas tends to proceed along established lines of travel; he adds further that this growth usually follows the fastest existing transportation lines. Another of his general conclusions is the fact that this growth is toward higher ground and also toward the homes of community leaders. His final conclusions concerning this growth direct it toward open country, and in the same general direction as the growing trend of movement of the chief retail and office buildings.⁴⁶

In a later book Hoyt gave a number of observable tendencies which help to stabilize his theory. In Principles of Urban Real Estate, Hoyt and his collaborator Weimer enumerate the tendencies which provide the major bases for the sector theory. The authors state that these points are adapted from an unpublished manuscript by Homer Hoyt. There are but four basic points in this theory.

⁴⁶ Homer Hoyt, "City Growth and Mortgage Risk," Insured Mortgage Portfolio, I (December, 1936), 9.

First, the various groups in the social order tend to be segregated into definite areas according to their income and social positions. Of course, exceptions to this rule exist but as a general statement of general tendency, this principle is valid.

Second, the highest income groups tend to live in the houses of highest value or commanding the highest rents. These desirable dwelling units of this type are likely to possess all the attributes of good housing and are located in the newest and most modern structures in areas where the percentage of owner-occupancy is high and the vacancy rate low.

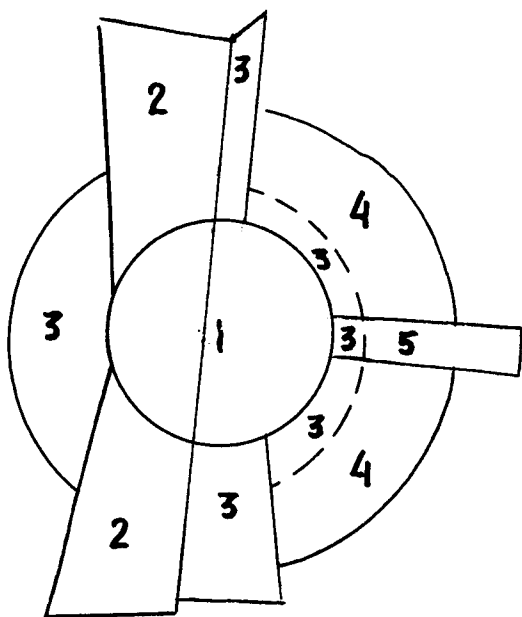
Third, the lowest income groups tend to live in houses of lowest value or those offered for lowest rents. The dwelling units of this type are likely to possess most of the attributes of bad housing. The structures are ordinarily in poor condition, heating and plumbing facilities are likely to be of an inadequate nature, and the percentage of owner-occupancy low. Low rent areas are located around the business and industrial center of the city and usually extend outward on one side or sector of the city from the center to the periphery. Generally speaking, they occupy the ground which is left after the high grade residential uses and industrial and commercial uses have preempted the land better adapted to their purposes.

Fourth, the growth of American cities has taken place mainly on the periphery by the extension of new transportation lines, instead of by the rebuilding of old areas, although some reclamation of older areas has occurred. ⁴⁷

These conclusions cover the main conclusions of Hoyt's sector theory. They also show the main lines of divergence between the concentric zone theory of Burgess and the sector hypothesis of Hoyt. A diagram of Hoyt's sector theory might

⁴⁷ Welmer and Hoyt, 61-62.

be drawn as follows:



1. central business district
2. wholesale, light manufacturing
3. low-class residential
4. medium-class residential
5. high-class residential

Figure 3 The Hoyt Sector Theory ⁴⁸

The final theory of urban structure was proposed by C. D. Harris and E. L. Ullman in 1945. In that year Harris and Ullman proposed their multiple nuclei theory in an article published in the Annals of the American Academy of Political and Social Science. ⁴⁹

The multiple nuclei theory is differentiated from the theories of both Hoyt and Burgess by a single distinguishing mark. The multiple nuclei theory holds that the land use pattern in many cities is not built around a single center,

⁴⁸ C. D. Harris and E. L. Ullman, "The Nature of Cities," Annals of the American Academy of Political and Social Sciences, 242 (November, 1945), 13.

⁴⁹ Ibid., 7-17.

as Burgess and Hoyt set forth in their theories, but rather is built around several discrete nuclei. ⁵⁰

The multiple nuclei in various cities are open to different interpretations and explanations. In some cities these nuclei have existed from the very beginning of the city's development. Metropolitan London is an example of this type of nucleus. "The City" and Westminster originated as separate points separated by open country. The former was the center of finance and commerce, the latter was the center of political life. In numerous other cities the nuclei developed as the growth of the city stimulated migration and specialization. Chicago is a definite example of this. Heavy industry was, at first, localized along the Chicago River in the heart of the city. As the city developed and expanded, it migrated to the Calumet District where it acted as a nucleus for extensive new urban development. ⁵¹

According to this multiple nuclei theory of Harris and Ullman there can be various initial centers. The initial nucleus of a city may be the retail district in a central-place city, the port of rail facilities in a manufacturing city, or a beach in a specialized-function city. The rise of separate nuclei and differentiated districts reflects a combination of

⁵⁰ Ibid., 7-8.

⁵¹ Ibid., 14.

four factors. First certain activities in cities must have specialized facilities. For example, a port district must have sufficient area, clear of obstructions, for the taking off and landing of aircraft; manufacturing districts must have large areas of land and easy access to transportation facilities. Second, similar activities group together because they profit from cohesion. Modern-day shopping centers are examples of this. Third, some unlike activities are detrimental to each other, such as factory districts and residential areas. Fourth, some activities in the city are unable to afford the high rents of the high land prices of the most desirable sights. ⁵²

As is evident the number of nuclei in any given city is variable. The number of nuclei which result from historical development and the need of specialized functions varies greatly from city to city. One generalization can be made, however: the larger the city, the more numerous and specialized are the nuclei. The following general nuclei or districts have developed in the majority of large American cities.

The central business district is the focal-point of intracity transportation facilities. This section forms the transportation hub of the city. Generally, because of the

⁵² Ibid., 14, 15.

asymmetrical growth of large cities, it is not now located in the areal center of the city, but near an edge, as in the case of Chicago and the lake front. It is the point of convenient access from all parts of the city and the point of highest land values. The retail district is attached to the sidewalk. The shops, which are characteristic of this district, must be easily accessible to potential customers. Of course, the financial and government buildings are near, but not in the center of the retail district. In most cities a further district has been added; there is now a separate "automobile" row which is located on the edge of the central business district. These later districts are added as specialized functions or districts develop.

The wholesale and light manufacturing district is located in a section of the city which suits the specialized function which it carries on. It is located conveniently within the city, but near the focus of extra city transportation facilities. Because of the need of rapid transportation facilities, the wholesale houses are concentrated along railroad lines, usually adjacent to, but not surrounding, the central business district. The transportation facilities and the proximity to the central business district attract many and varied types of light manufacturing to this district.

The heavy industrial district is located near the present

or former edge of the city. The noise of boiler works, the odor of stockyards, the waste disposal problems of factories, the fire hazards of petroleum refineries, city transportation difficulties--all these favor the growth of heavy industry away from the main center of town and the central business district. The edge of the modern city provide the necessary facilities for heavy manufacturing for such industries require large tracts of land, which frequently available on fringe areas of the city. These industries also require easy access onto large transportation facilities. Such access can also be found near the edge of the modern city. Because of the development of belt lines and switching yards, these sites on the fringe areas of the city in many cases have better transportation service than those nearer the center of the city.

According to the multiple nuclei hypothesis the residential district may be located in any area of the city. The high-class districts are likely to be on well-drained, high land and far removed from the city nuisances of noise, smoke, and railroad lines. The low-class districts are likely to arise near factories and railroad districts which are located in the city.⁵³ Because these varied types of districts can occur in many different parts of the city, the various residential districts are not limited or restricted to any

⁵³ Ibid., 15-16.

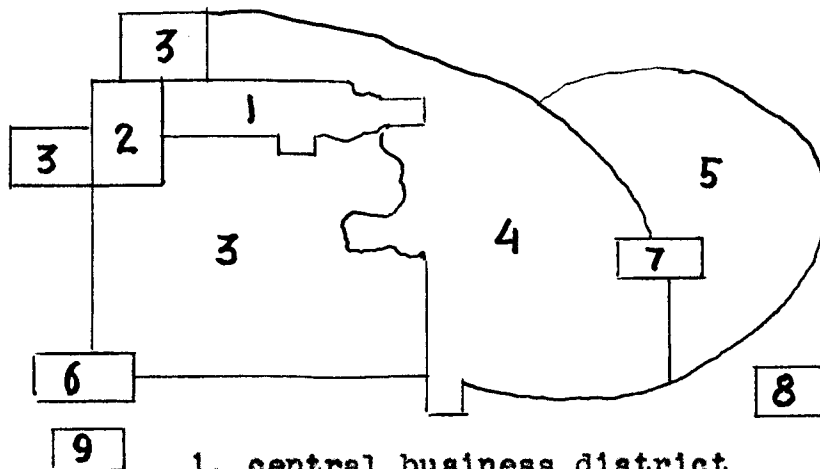
definite section of the city.

As was pointed out earlier, the multiple nuclei theory allows for the appearance of other nuclei to provide for specialized functions within the city itself. Thus there are other minor nuclei which may be the centers of various districts. Such nuclei might include cultural centers, parks, outlying business districts, and small industrial centers. Even a university may form the nucleus for a quasi-independent community. There are a number of examples which bear this out: the University of Chicago, the University of California, and Harvard University. Again, high-class residential areas, such as Rock Creek Park in Washington and Hyde Park in London, may form around parks and recreation areas and other areas of specialized functions. ⁵⁴

In summary, then, one can say that the multiple nuclei theory of Harris and Ullman recognizes the shortcomings of both Burgess and Hoyt. By a realistic analysis and study of urban development and planning Harris and Ullman attempt to overcome the drawbacks and shortcomings of these earlier theories. They have recognized the difficulties involved in giving a city a too regular plan of development. They have also had an insight into the impact which transportation, geography, and specialized functions have upon urban growth.

With this in mind they have introduced their multiple nuclei hypothesis which considers the various factors which the earlier theories of city growth left unexplained. Thus the theory of Harris and Ullman explains the asymmetrical growth of cities, the important part that transportation facilities play in urban growth, the impact of specialized functions on the city. In a word the theory of Harris and Ullman seems to remove the major difficulties which the earlier theories of Burgess and Hoyt left unsolved. Despite all this, however, the Harris-Ullman hypothesis still leaves many problems unsolved such as universal application and vertical land use. Thus even this latest theory seems inadequate and incapable of solving the vexing problems of urban development.

The chart which follows illustrates Harris' and Ullman's conception of the multiple nuclei theory.



1. central business district
2. wholesale, light manufacturing
3. low-class residential
4. medium-class residential
5. high-class residential
6. heavy manufacturing
7. outlying business district
8. residential suburb
9. industrial suburb

Figure 4 Multiple Nuclei Theory ⁵⁵

As was stated in Chapter I, human ecology consists of a relationship, namely a physico-social relationship. Therefore, when an ecologist analyzes the structure of a city, he may proceed upon one of two ways. Either he will set up his various divisions of the city (whether circular zone or sector) according to a physical index such as rent, types of homes, number of factories; or he will set up the divisions according

⁵⁵ Ibid., 13.

to a social index. As a result of his choice of indexes, either the physical or the social element of this relationship will be emphasized in his theory.

E. W. Burgess in his concentric zone theory places the social aspect of this relationship in the ascendancy. He emphasizes the impact which people make on their environment. Zone I, however, is the exception. Since it is the area of the so-called homeless men, it must be described in terms of the physical factors which predominate in this zone. "The heart of this district is the downtown retail district with its department stores, its smart shops, its office buildings, its clubs, its banks, its hotels, its theatres, its museums, and its headquarters of economic, social, civic, and political life."⁵⁶ It is interesting to note that in his description of the remaining four zones Burgess limits himself mainly to the social factors in these zones. He calls Zone II, the Zone of Transition. It has a factory district for its inner belt and an outer ring of retrogressing neighborhoods. The outer ring is composed mainly of first-settlement immigrant colonies, rooming house districts, homeless men areas, resorts of gambling, bootlegging, sexual vice and various and sundry breeding places of crime.⁵⁷ In Zone III we find the neighborhoods of second immigrant settlements, while Zone IV is

⁵⁶ Burgess, "Urban Areas," 114.

⁵⁷ Ibid., 114-116.

inhabited by the great middle-class of native born Americans, small businessmen, professional people, clerks, and salesmen. Zone V is without question the domain of the matricentric family. ⁵⁸

The sector theory of Hoyt, unlike the concentric zone theory, emphasizes the physical factor of the physio-social relationship. It remains true that Hoyt himself speaks of high and low-class residential neighborhoods. However, this of itself is not sufficient evidence to say that he takes the social factor over the physical. The fact which must be investigated is the index or criterion which he uses to evaluate a neighborhood as high or low-class residential. If, for example, he judged a neighborhood to be high-class because of the number of socialites living there or if he judged a neighborhood to be low-class because of the number of crimes committed there, one could say that Hoyt emphasized the social factor over the physical factor.

However, as was pointed out earlier in this chapter, Hoyt used rent, a physical factor, as his index of residential neighborhoods. Therefore, according to Hoyt, the physical factor of this relationship is predominant. ⁵⁹

Harris and Ullman in the multiple nuclear theory likewise

⁵⁸ Ibid., 116-117.

⁵⁹ Hoyt, p. 72.

emphasize the physical factor over the social. They state that the initial nucleus of the city may be the retail district, rail facilities, or other transportation depots. All of these are clearly physical characteristics. ⁶⁰

Once again the author of this work wishes to state that an emphasis on the physical factor in the physico-social relationship or vice versa does not necessarily exclude the other factor. He readily admits an interdependence between the factors of the relationship.

⁶⁰ Harris and Ullman, Annals of the American Academy of Political and Social Studies, 242. 14.

CHAPTER III

OPINIONS OF OTHER ECOLOGISTS

In the last chapter three major theories of urban structure were discussed. It is evident that each of these theories has both strong points and weak points. In this present chapter the present writer intends to cite these various points as other ecologists have viewed and criticized them.

Burgess' zonal theory will be the first theory treated. Our plan here is to let some other noted ecologists subject Burgess' concentric zone theory to the test of their own research and knowledge.

Milla A. Alihan in her book, Social Ecology, criticized the concentric zone hypothesis on two major counts. She states (1) that zones do not exist as natural areas because those criteria which presumably characterize zones do not always exhibit similar spatial distributions, and (2) that the five zones, as explained by Burgess, should be treated as purely arbitrary since the gradual increase and decrease in social phenomenon, as it proceeds from the center of the city, makes

the conception of sharply delimited zones invalid.¹

Alihan draws from another source other than her personal knowledge to support her first criticism. She cites Mowrer's areas in her own support. Although Mowrer, she says, mapped out his family types upon the lines of the Burgess theory, nevertheless the two zonal patterns do not coincide.

Although Mowrer's "family type" zones are charted upon the original zonal pattern laid down by Burgess, it is seen from analysis that the two zonal patterns do not coincide. In fact, Mowrer's zones cut across and overlap Burgess' zonal arrangement. For instance, in his first, or "non-family" zone are included the Chicago areas in Chinatown, Greektown, and Hobohemia, which according to Burgess are in the second or transitional zone. On the other hand, other areas within this transitional zone, such as Little Sicily and the Ghetto fall into Mowrer's third zone--that of the "paternal family". Furthermore, although Mowrer's description of the "equalitarian family" area corresponds to Burgess' definition of the fourth or "better residential" zone, Mowrer apparently bisects this fourth zone, identifying the outer half of it with his fifth, or "maternal family," area of the commuter. Finally, although Mowrer gives five types of family areas only four of them fall into a distinctly zonal pattern. The second, or "emancipated family" type is interspersed within the zones of the "maternal family" and the "equalitarian family".²

From this discrepancy Alihan concludes that either the two zonal arrangements are not meant to be compared or that a

¹ Milla A. Alihan, *Social Ecology* (New York, 1938), 221-229.

² Ibid., 221.

general zonal pattern for all social factors is a non-entity. She states in effect that the discrepancy between the spatial disposition of family types and that of the numerous factors in terms of which Burgess territorially delimits the zones leads to one of two possible conclusions: either the two zonal arrangements are not of the same universe; or one general zonal pattern does not hold good for all factors and therefore more than one zonal arrangement is possible. Alihan then carries these objections to their logical conclusion and therefore shows what she feels is a serious weakness in the concentric zone theory of Burgess. She says, "In the latter case, zones should be treated, not as entities, but as arbitrary abstractions in terms of any one factor. This, however, would contradict Burgess' definitive delimitation of the zones. Needless to say, it would vitiate seriously the ecological concept of the "natural area" as a territorially delimited unit." ³

In her second criticism of Burgess, Alihan states that the five zones, as explained by Burgess, should be treated as purely arbitrary since the gradual increase and decrease is a social phenomenon, as it proceeds from the center of the city, makes the conception of sharply delimited zones invalid. In support of her second criticism Alihan claims that gradients

³ Ibid., 222.

are continuous and, therefore, zonal boundaries are purely arbitrary. In other words, it would be as logical to have twenty zones as it is to have five. Her general conclusion on this point is that the five zones, as presented by Burgess, cease to be sharply demarcated from each other, as they appear to be when described in terms of qualitative factors, such as economic and educational standards or types of profession, and so forth. ⁴

The standard zonal boundaries do not serve as demarcations in respect of the ecological or social phenomena they circumscribe, but are arbitrary divisions. They can be treated only as convenient methodological devices for the classification of data under smaller divisions that the total area included in a particular city study. The zone can have significance only if it marks a distinction of gradients or between gradients. Otherwise, if the gradients are as continuous as the name implies, the zonal lines can be drawn indifferently at any given radius from the center. ⁵

Another noted ecologist, James A. Quinn, obviously agrees with Alihan when she states that a general zonal pattern for all social factors is definitely invalid. In his book, Human Ecology, Quinn makes a number of significant statements which show his basic agreement with Alihan. "Alihan's point seems correct, namely, that various criteria show different distributions of phenomena within the urban area and, consequently,

⁴ Ibid.

⁵ Ibid., 224.

that no single system of composite zones suffices for all purposes." ⁶ Quinn is also in agreement about the ideological character of Burgess' zones. Because of this he seriously doubts the universal extension of the Burgess hypothesis.

Various systems of single factor or composite zones appear possible, each of which possibly may aid in the interpretation of a limited number of phenomena. If, therefore, a zonal system is to be accepted, it must be conceived as a device of limited value in the interpretation of the city. It will not be a composite, universal frame of reference for the interpretation of all urban phenomena but will be limited to such single factors or combination of them as correspond in the distribution to the zonal pattern. ⁷

Quinn, however, does not support Alihan as regards her second criticism of the zonal theory, namely, a gradient distribution makes the existence of a clear-cut zone impossible. To prove his point, he takes a very common example from the field of physics. "The contention by Alihan that a gradient distribution makes impossible the existence of clear-cut zones does not seem valid. In the field of physics, for example, gradual change in the length of light rays throughout the spectrum may be taken as an illustration of a gradient. Nevertheless, distinct zones of red, yellow, and blue appear in the spectrum even though no sharp line of demarcation can be drawn.

⁶ James A. Quinn, Human Ecology (New York, 1950), 135.

⁷ Ibid.

It seems possible, therefore, for distinct zones to appear even where gradients unquestionably exist." ⁸

The concentric zone theory of Burgess is rejected by another independent researcher in ecology. Maurice R. Davie in an article, "The Pattern of Urban Growth," finds numerous loopholes in the Burgess hypothesis. Davie based his rejection of the zonal theory on a number of individual studies performed by other noted sociologists and ecologists. He compiled his evidence for his rejection from Shaw's study of Delinquency Areas in Chicago, the Base Map of Chicago, Bartholomew's survey of urban land utilization in sixteen self-contained cities, and Green's analysis of census tract data of Cleveland. He firmly believed that the facts of urban structure which scholars reported contradicted Burgess' zonal theory. He was also convinced by his own experiment, namely, the application of the concentric zone theory to the city of New Haven. The results of this experiment proved conclusively to Davie that the Burgess hypothesis was invalid.

In his spatial analysis of New Haven, Davie set out to disprove the Burgess hypothesis. To accomplish this end, he drew on a "natural" areas map a series of concentric circles, one-half mile apart, radiating from the center of the

⁸ Ibid., 136.

city.⁹ On inspecting this map he found that no outstanding spatial correspondence between the natural areas and the concentric zones. In fact, he found that each circular area contained a diversity of people, social problems, and facilities.¹⁰ He concludes by saying, "Any attempt to characterize them as primarily a zone in transition, or a zone of workingmen's homes, and a residential zone must appear completely arbitrary."¹¹

In preparing his criticism of Burgess, Davie utilized the studies presented by Bartholomew and Green. From further analysis of these studies he learned that neither study upheld the concentric zone theory of Burgess.

The hypothesis of the concentric zone pattern, therefore, clearly does not apply to New Haven. Nor does it appear to apply to the sixteen self-contained cities in which Bartholomew made detailed field surveys of land utilization. Nor does it apply to Greater Cleveland, where Green by analyzing social data by census tracts mapped the "cultural areas" of Cleveland and the four largest adjacent cities. Low economic areas, characterized by smaller incomes, fewer radios and telephones, fewer home owners, fewer

⁹ Davie's natural areas map consisted of two separate maps: a land utilization map which marked out the main functional areas of the city, and a residential area map which was determined from population and social problem data. Maurice R. Davie, "The Pattern of Urban Growth," Studies in the Science of Society, ed. George P. Murdock (New Haven, 1937), 142-145.

¹⁰ Ibid., 142-157.

¹¹ Ibid., 159.

one family dwellings, more two and multi-family dwellings, more murders, houses of prostitution, juvenile delinquents, dependent families, unemployed, illiterates, and higher birth and infant mortality rates in population--low economic areas, while in general near the center of the city, are by no means confined there but are found in every zone. They are generally adjacent to industrial and railroad property.¹²

In a further investigation of the validity of Burgess' theory, Davie also studied Shaw's Delinquency Areas in order to disprove Burgess. From his investigation he found that irregularities occur in the gradient pattern of juvenile delinquency. He did not question the accuracy of the general findings that delinquency rates, considered by zones, tend to decrease from the center of the city outward. He states, however, that Shaw obscures the salient facts regarding the distribution of delinquency and distorts the data by considering the rates by zone. In other words, Shaw drew concentric circles at intervals of two miles and computed the juvenile delinquency rates for each zone. Davie contends that there is nothing in the area rates themselves which would suggest a combination into concentric zones. The real criterion of the areas in which high rates of juvenile delinquency are found is proximity to industry and commerce. Davie believes that Shaw began his work as if he wanted to demonstrate the correctness of Burgess' hypothesis.¹³

¹² Ibid.

¹³ Ibid., 138.

In conclusion Davie considered the concentric zone theory invalid because the central business districts of the various cities which he had observed tended actually to be either irregular in size or of a decided rectangular pattern or shape.¹⁴

Davie's main criticism of the concentric zone theory was based on the fact that Burgess overlooked some of the data necessary to give an adequate interpretation of urban development. He pointed out the fact that Burgess failed to account for the factor of industrial and railroad utilization. "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. Examinations of scores of base maps of different cities fail to disclose any instance of industrial concentration within a concentric zone. Chicago itself is a case in point."¹⁵

Again there is a basic agreement between Davie and James A. Quinn. Both criticize Burgess on the heavy industry factor. Quinn states that Burgess accounted only for business, residence, and light industry. The omission of heavy industry from the concentric zone theory necessitates some modifications in that theory.

¹⁴ Ibid., 161.

¹⁵ Ibid., 159.

In commenting on Davie's criticism of Burgess, Quinn makes a number of pertinent statements:

One valid criticism raised by Davie against the Burgess zonal theory was the neglect of heavy industry. Burgess drew his zones to account only for business, residence, and light industry. His followers, who were faced with the necessity for explaining irregularities in and near areas of heavy industry, tended to regard the latter merely as a distorting factor. Because, however, the Burgess hypothesis presumably characterizes the typical structure of the commercial-industry city, Davie appears justified in insisting that heavy industry be regarded as a normal part of the urban structure. This fact necessitates some modification of the Burgess system and theory of zones. ¹⁶

As regards Davie's criticism of the shape of the central business district, Quinn says that he identifies time-cost distance with linear distance. In other words, a rectangular or irregular spatial pattern, measured in terms of linear distance, does not necessarily deny the existence of circular time-cost zones. If, for example, Quinn goes on, a checker-board street system prevails, and if transportation is equally easy along every street, but is at the same time confined to streets, a rectangular spatial pattern may actually conform to a circular time-cost pattern. Quinn proceeds to illustrate this conformity by means of figures A and B. In figure A all the points marked with a circle are two blocks away, along existing streets, from point X, and all the points marked with a square are four blocks from it. If one draws a line connecting

¹⁶ Ibid., 134.

all of the circles, a rectangle is formed, and the same is true of a line connecting all of the squares. These rectangular areas, Quinn says, correspond to certain of the spatial patterns observed by Davie. Now let us assume that one minute is required to traverse one block. All the points marked with a circle are two minutes from the center of the city, and all the points marked with a square are four minutes from it. The theoretical time-distance chart, drawn with radii of two and four minutes respectively, appears in figure B. This chart conforms to the Burgess theory of circular zones.

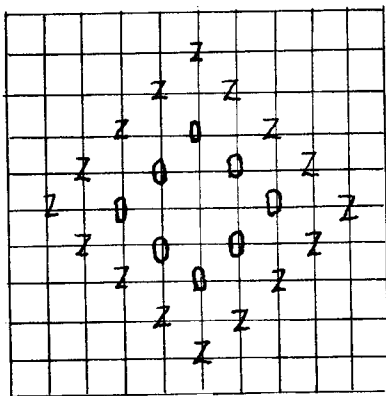


Chart A

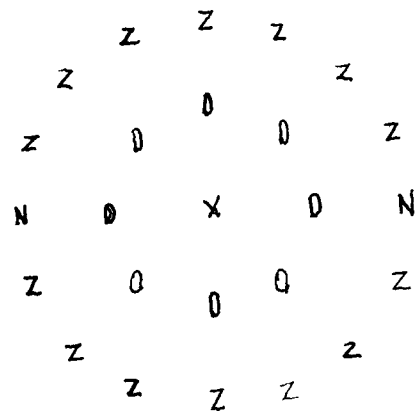


Chart B

From Quinn's analysis and examples it seems quite apparent, therefore, that a rectangular spatial structure may conform with a circular ecological (time-cost) structure.¹⁷ Quinn's conclusion, then, is that Davie's criticism when considered

¹⁷ James A. Quinn, "The Burgess Zonal Hypothesis and Its Criticisms," American Sociological Review, V (April, 1940), 212-213.

under this aspect of time-cost distance does not contradict the basic concentric zone theory of Burgess.

Quinn summarizes his position and that of Davie toward the concentric zone theory by stating once again that the theory needs modification. He is convinced that the present validity of the theory is uncertain until further research has been done.

From the preceding discussion it appears evident that the hypothesis of concentric zones as formulated by Burgess needs to be seriously modified if, indeed, it can be defended at all. Further research will be required either to prove the validity and the value of any such concentric zonal hypothesis. This will necessitate extensive and difficult studies and even then the results may not be conclusive. Until these inductive studies have been made, however, the status of the concentric zonal hypothesis must remain uncertain. ¹⁸

Another important critic of the concentric zone theory of urban development is Homer Hoyt. Hoyt, however, is a bit indecisive in his criticism of this theory. In one place he has decided praise for the Burgess hypothesis. He states frankly that the concentric circle theory of land uses offers an ideal pattern that helps to bring order out of chaos and is not to be unduly criticized because the pattern is never exactly realized in any actual city. ¹⁹ Almost immediately, however, Hoyt withdraws his praise and expresses a completely opposite opinion.

¹⁸ Quinn, Human Ecology, 135-136.

¹⁹ Hoyt, 17.

After considering the objections of Ernest Fisher to the zonal theory, Hoyt offers this comment, "The limitations and qualifications thus brought out seem to render the theory doubtful even as a statement of an ideal pattern of land uses."²⁰ Somewhat later on Hoyt clarifies his opinion of the Burgess hypothesis. He leaves no doubt as to his feelings concerning this theory. He states quite boldly, "Since observation for these nineteen cities also apply to all of the cities for which block data maps are available and which have been closely studied, it is clearly apparent that the concentric circle theory of city structure is defective."²¹ There was no need for Hoyt to say more. In his mind the zonal theory was invalid.

The reasons for Hoyt's opposition soon appear. He disagrees with Burgess on a number of points. First, he believed that the retail shopping and not the financial center, is the central point in most moder-day cities. In smaller cities, however, the financial, office building, and retail shopping may be located within a radius of a block so that these areas may not be distinctly separated. Second, as was mentioned earlier in Chapter II, Hoyt was of the studied opinion that the wholesale and light manufacturing zone adjoined the central business district, but did not totally encircle it. Third, he did not think that present heavy-industry areas surrounded

²⁰ Ibid.

²¹ Ibid., 76.

the central business district. He is very explicit on this point, "Moreover, the amount and extent of land used for industrial purposes varies so much as between different cities that no general industrial pattern can be established." ²² In the fourth place Hoyt states that the concentric zone theory breaks down because factories do not form a concentric circle around the central business district. Consequently workingmen's homes, which have a tendency to be located near factories, will not encircle the central core of the city. Lastly, Hoyt denies that one progresses from dilapidated dwellings at the center of the city to an encircling belt of mansions on all points of the periphery. ²³

Another expert on the problem of urban development suggests modification of the concentric zone theory on numerous points. Ernest M. Fisher in his book, Advanced Principles of Real Estate Practice, indicates the points which he thinks need modification in the Burgess theory. In the first place, the zones overlap one another. He says that the retail district, and not the financial or business district, represents the central point of the city or the area of highest rent and that the industrial, wholesale, and light manufacturing areas do not surround the central business district. The one follows

²² Ibid., 23.

²³ Ibid., 17-23.

transportation lines, the latter two are next to the central area but do not surround it. According to Fisher, Burgess' theory offers no clear-cut line of demarcation between zones, nor does it account for the rise of sub-centers, which tend to start a pattern similar to that existing near the center of the city. Finally, Fisher says that topographical factors may completely destroy the pattern set up by Burgess. On all these points it is clear that Fisher is following the basic criticisms which were presented by Hoyt and the other important critics of Burgess. We can, then, summarize Fisher's criticisms in his own words:

The following observation should be made regarding the variations from this pattern which are commonly found in any community. First, the zones should not be thought of as rigidly determined nor as of uniform width. They interpenetrate each other. Especially is this true of retail uses. They follow population and are to be found in all zones except where restrictions either public or private prevent them. The tendency of heavy manufacturing to spread out along transportation lines is another example of such lack of uniformity. In fact, all the uses tend to hover near transportation lines and are extended further in the vicinity of such routes than in districts not served by them . . . Not uncommonly a type of use will be found only on one side which it is presumed to surround. The wholesale district, for example, seldom entirely surrounds the retail, but lies adjacent to it only on one side. The line of demarcation between two adjacent zones is, furthermore, not definitely drawn. One fades into the other and the exact point at which one ends, and the other begins cannot be considered as definitely fixed. . .

The second variation, from the pattern that is particularly noticeable is the tendency seen

in cities of considerable size for sub-centers to spring up and start another pattern similar to that whose center is the center of the city. These sub-centers begin with the familiar neighborhood stores and grow with the population until the different uses find it desirable to locate near them.

Finally, unfavorable topography may entirely break up the pattern. A city located on a lake, like Chicago, or on a peninsula, like New York, or on a river, like Detroit, finds this physical barrier too great to break through it. The pattern, therefore, becomes distorted. Hills, also, may be equally powerful in breaking up the concentric circle pattern. ²⁴

Another researcher in human ecology criticizes Burgess on an entirely different and heretofore unmentioned point. P. K. Hatt singles out Burgess' misuse of natural areas. He says that one should recognize that areal units of any kind are essentially a short cut substitute for case by case study. He urges that caution be had in their use. "No obeisance," he says, "need be made to the natural areas of a city, but only those natural areas logically determined by the data and the problem need be constructed, used and defended." ²⁵

The limited usefulness of the concentric zone theory is again pointed out by Amos H. Hawley. He says in general that the concentric zone theory of Burgess created the impression of a monocentered community, while the great demand today is

²⁴ Ernest M. Fisher, Advanced Principles of Real Estate Practice, (New York, 1937), 126-127.

²⁵ P. K. Hatt, "The Concept of Natural Area," American Sociological Review, XI (August, 1946), 427.

for a multicentered pattern. "The concentric zonal conception, while having limited usefulness for purpose of comparison, is apt to create the erroneous impression that the community is necessarily monocentered. In only relatively simple communities, however, does this appear to be true. Modern dependent community organization presents instead a multicentered spatial pattern."²⁶ Hawley, then, is another ecologist who leaves no doubt as to his opinion of the Burgess hypothesis.

The ideological character of the concentric zones is re-emphasized by Paul H. Landis in his book, Introductory Sociology. In this book he points out that subsequent research shows the concentric pattern to be at best only an illustrative schematic and methodological pattern. Nevertheless, he readily admits that the theory has a certain usefulness and that it has led to a series of significant researches.²⁷

R. D. Mc Kenzie was one of the few ecologists to accept the general postulates of the Burgess theory. Even he, however, limited the usefulness of the theory. It was his opinion that the concentric circle theory was useful only for purposes of comparison. He also admits that growth in the outlying parts of the city may follow radial lines. His estimate of the

²⁶ Paul H. Landis, Introductory Sociology (New York, 1957), 202.

²⁷ Amos H. Hawley, Human Ecology (New York, 1957), 258.

theory, therefore, follows that of the other critics of Burgess. He says, "The arbitrary concentric circle theory is useful only for the purposes of comparison. It does not show the details of expansion, as growth is usually very uneven in different parts of the territory falling within a zone. This is particularly true in the outlying sections of the city where expansion is likely to follow radial lines." ²⁸

Another sociologist who is in substantial agreement with the Burgess theory is Raymond V. Bowers. In this study of the spatial distribution of Rochester, New York, he states that the city growth is similar to the concentric zone theory. "The topographical, cultural, and competitive factors underlying Rochester's growth would thus appear to approximate rather closely the conditions necessary for concentric development according to ecological theory." ²⁹ Bowers then goes on to say that, in spite of the limited number of indices and the intrusion of methodological distortions, such as the differing sizes and irregular shapes of census tracts, nevertheless there is considerable empirical support for Burgess' hypothesis. ³⁰ From Bowers' statements it is easy to see that he proceeds in

²⁸ R. D. Mc Kenzie, The Metropolitan Community (New York, 1933), 135.

²⁹ Raymond V. Bowers, "Ecological Patterning of Rochester, New York," American Sociological Review, IV (April, 1939), 188.

³⁰ Ibid.

much the same manner as does Burgess. He moves rapidly from the particular case of Rochester to the universal conclusion that the concentric zone pattern is applicable to any and all cities.

Samuel Koenig in his work, Man and Society, states that Burgess was the first to give a systematic formulation to the structure of urban communities and also the first to call attention to the city as a dynamic rather than a static structure. He says that the theory's basic ideas of radial expansion, of zonal divisions and of natural areas have been substantiated by a number of important studies. After this, Koenig goes on to say that Burgess' claim that certain economic characteristics (as delinquency, poverty, immigration colonies) tend to decrease while others (as home ownership) tend to increase as one moves from the center outward toward the periphery of the city is essentially correct in all salient points. ³¹

Despite all the former criticisms of the Burgess theory, there were still many who sought to elaborate and apply the basic propositions of the theory. In 1947 John W. Teeter, using various economic and social data, found that the city of Madison, Wisconsin fell into a combination of concentric circles and wedges which closely follow the pattern suggested by

³¹ Samuel Koenig, Man and Society (New York, 1957) 196-197.

Burgess. ³²

Clifford R. Shaw and Henry D. McKay, as was mentioned earlier in this chapter, relied heavily upon the zonal theory. In writing about this theory, the authors state that the zone pattern appears in the major industrial cities and that it provides a framework in which the social characteristics of a city may be studied. However, we notice once again that Shaw and McKay stress the ideological aspects of the Burgess hypothesis. They say in effect that the same general pattern of areas tends to appear in any major industrial center, even though such a "center" may be on the outskirts of a large city. Their studied opinion was that this ideal or schematic construction furnished a frame of reference from which the location and characteristics of given city areas may be studied at any moment, as well as the changes that take place as time goes on. ³³

Another important study by Frederic M. Thrasher tended to apply the theory of Burgess. Thrasher in his study of gangs in Chicago identifies the location of gangs with the Zone of Transition which appears in Burgess' theory. Thrasher himself does not fail to see the significance of this important fact.

³² John W. Teeter, "The Ecology of Residential Areas in the Madison Community," PhD thesis, University of Wisconsin, 1947, 97.

³³ Clifford R. Shaw and Henry D. McKay, Juvenile Delinquency and Urban Areas (Chicago, 1942), 19.

"The fact that the gangs of Chicago are to be found for the most part in this 'Zone of Transition', which is the region of greatest disorder in the city, is in itself significant, for they not only find an environment favorable to their development, but their life and activities are colored by the disorganization they encounter there." ³⁴

Ernest R. Mowrer in his study of families in Chicago divides the areas into five types which are in keeping with the characteristics of Burgess' five zones. "Areas of the city may be classified with reference to the type of family life found in each community. Chicago, from this point of view, may be divided into five types of areas: (1) non-family areas, (2) emancipated family areas, (3) paternal family areas, (4) equalitarian family areas, and (5) maternal family areas." ³⁵ From this it is not difficult to see that Mowrer is at least in basic agreement with the concentric zone theory as it is proposed by Burgess.

A more recent critic has come forward who questions the universal application of both the zonal theory of Burgess and the sector hypothesis of Hoyt. Harlan W. Gilmore states in his book, Transportation and the Growth of Cities, that the controversy which exists between the concentric zone theory and the

³⁴ Frederic M. Thrasher, The Gang, 2nd ed. (Chicago, 1936), 448.

³⁵ Ernest R. Mowrer, Family Disorganization, 2nd ed. (Chicago, 1939), 110.

sector theory is largely wasted effort. He believes that both theories, insofar as they claim to be universal, are wrong. The observable variation in modern urban development has led him to the conclusion that neither theory is adequate for all big cities, but, in certain types of cities, the Burgess hypothesis may be more realistic, while in a different type of city the Hoyt theory will better fit the facts which that city presents. ³⁶

Gilmore goes on to say that as a more scientific urban ecology is developed both theories may be found useful. For example, he says that people tended to live in a more or less symmetrical zone around the central business district in that period when walking was the chief means of transportation. However, in the rapid transit era, people tend to settle along the main traffic thoroughfares and routes of public transportation. ³⁷

The same application can be made as regards commercial and manufacturing cities. In the former most low income families live in second-hand houses originally built by the upper classes, and the older houses are likely to be nearer the central business district than the newer houses (Burgess).

³⁶ Harlan W. Gilmore, Transportation and the Growth of Cities (Glencoe, 1953), 145.

³⁷ Ibid.

Whereas in the latter cities there may not be enough second-hand houses to care for the laboring classes, and there may be a sector of homes built especially for the laborers. ³⁸

The only ecologist who questions the validity of both the concentric zone and sector theories is Walter Firey. In his book, Land Uses in Central Boston, he applies both theories to land use in Boston. His purpose is to confront the idealized descriptive schemes with data selected in terms of the main principles of these schemes. He states that the valid theory should conform to the spatial distribution of Boston. "If the Burgess or Hoyt theories are valid, we may expect to find territorial arrangements which conform to a concentric or sector pattern, or perhaps both. Any significant departure in actual land use from such idealized patterns will call into question the explanatory adequacy of the Burgess and Hoyt theories." ³⁹

In his application of the Burgess and Hoyt theories, Firey uses both present day Boston and Boston of the nineteenth century as his examples. He contended that there is nothing wrong in selecting a given moment of history and observing how, at that time, social systems of a given character were distributed. Consequently he chose to observe the spatial distribution

³⁸ Ibid.

³⁹ Walter Firey, Land Use in Central Boston, (Cambridge, 1947), 41.

of upper class families in 1865. He states, "If the Burgess-Hoyt Theories are to claim any validity, they must have a reasonable descriptive accuracy for any given period of land use in history." ⁴⁰ His point is certainly well taken.

In investigating the distribution of Boston's upper class families of 1865, Firey found neither theory verified. "An epitome of upper class residential distribution as of 1865 shows two distinct concentrations: one at Beacon Hill, the other at the South End. Neither lies contiguous to the other. One lies West, the other to the South, of the business district. One is close to the business district, the other is relatively remote. In short, there is discernable neither a sector pattern nor a concentric zone pattern." ⁴¹

At this point Firey turned his attention to the present territorial arrangement of social systems in Boston. He says that since a study of early Bostonian social systems has failed to show any clear sector or concentric patterns, perhaps this modern day analysis might give to the Burgess-Hoyt theories at least a contemporary validity. In modern Boston he is hoping to find some verification of either the Burgess or Hoyt hypothesis. He begins his research also by considering the spatial

⁴⁰ Ibid., 51.

⁴¹ Ibid., 62.

distribution of upper class families.⁴²

As regards the concentric zone theory, Firey found that the rental classes showed a random distribution.

The innermost zone includes the highest rental class in the whole metropolitan area (Beacon Hill, Back Bay, and lower Fenway) and it also includes the lowest rental class (Charlestown, part of East Boston, the North End, the West End, the South End, and South Boston). Similarly the outermost zone ranges from such low rental towns as Lynall, Woburn, and Quincy, to high rental towns like Welsley and Hilton. Not a single concentric zone reveals any homogeneity in its rental classes. In terms of such evidence the Burgess hypothesis must be considered inadequate for the generalized description of upper class locational patterns in Boston.⁴³

Firey states that the Sector theory, when applied to Boston's upper class, is also inconsistent. Within the supposed upper class sectory, Firey says, one can find non-upper class residential uses; and outside of that sector are to be found many upper class areas. He concludes, on logical grounds, that the sector theory cannot be seriously entertained as a systematic ecological theory.⁴⁴

Using the working class as the subject for a further analysis, Firey found again that neither theory was exact. He states that in those areas, where, according to the theories,

⁴² Ibid., 74.

⁴³ Ibid., 77.

⁴⁴ Ibid., 79.

working class occupancy should be dense, a very small percentage of working people are found. From this he concludes that the theories lack validity in regards to the distribution of working class families. "Furthermore, even within the concentric working class band which can be discerned surrounding the Hub, there are districts with very small percentages of laboring people. Indeed Beacon Hill and the Back Bay, both of which lie wholly within the area that "should" be devoted to working class occupancy, have next to the lowest percentages of working class people in the entire metropolitan area. In the light of these findings it is reasonable to conclude that neither of the idealized descriptive schemes satisfactorily explains the distribution of working class families." ⁴⁵

Much the same conclusion follows, Firey says, from the study of the territorial distribution of industries. According to Burgess, industries will be found concentrated in a band lying just outside the wholesale and transitional areas. In the case of Boston, therefore, this should put most of the industries in an area embracing eastern Cambridge, eastern Somerville, Charlestown, East Boston, the North End, the South End, and the Back Bay. Such, however, is not the picture. By actual count there are in these districts from 49 to 57 industries, depending on how one delineates the concentric zones.

⁴⁵ Ibid., 83.

These represent less than one-half of the 123 industrial plants depicted on the map. The majority of the industries, therefore, have locations which cannot be explained by the Concentric Zone theory. ⁴⁶

Thus Firey concludes that Hoyt's strictures and criticisms of the zonal theory are well taken. Hoyt indicated, as was stated earlier, that manufacturing areas, rather than concentrating in a circular belt around the center of the city, tend to cluster along shorelines, river valleys, and belt line railroads. Firey definitely agrees with this.

An examination of figure 3 shows that nearly all the industrial concentrations are on main railway lines or near railway intersection points: in Waltham, Watertown, Hyde Park, East Cambridge, Jamaica Plain, Roxbury Crossing, South Boston, Quincy, Everett, and Lynn. Really the only industries not so located are those in the Hub itself, and most of these are adjacent to dock facilities. Consequently the pattern of industrial location is in large measure a function of railroad and docking facilities. Whatever configuration it assumes is thus dependent upon the layout of transportation routes and is likely to be quite variable and "fortuitous" so far as the idealized descriptive schemes are concerned. ⁴⁷

Firey concludes his investigation by stating that idealized descriptive schemes, like Burgess' and Hoyt's do not conform to present or past land use in Boston. "Whatever the line of

⁴⁶ Ibid., 85.

⁴⁷ Ibid., 85.

evidence one follows, the outcome is always the same. Neither past nor present land uses in Boston conform to the idealized descriptive schemes. There are, to be sure, some rough cartographic patterns to be found now and then in land uses, which are just tangible enough to make the concentric-sector theories plausible." ⁴⁸ He goes on to say that he sees no value in such theorizing unless real estate men may gain from it in some way. However, he thinks that it would be unwise for an investor to take the patterns literally. "Perhaps there is even some pragmatic value for real estate men and others in visualizing urban land uses as extending ever outward in sectors, or expanding ringlike in successive concentric bands. But it would be an unwise investor or speculator who took such patterns at all literally." ⁴⁹

In summarizing his position toward the Burgess-Hoyt theories, Firey says, "The arrangement which land uses assume are much too variable to be embraced in simple descriptive generalizations." ⁵⁰ This, then, is Firey's general conclusion with regard to the Burgess-Hoyt hypothesis, after extensive study on land use in the city of Boston.

Ernest M. Fisher and Robert M. Fisher in their work, Urban

⁴⁸ Ibid., 86.

⁴⁹ Ibid.

⁵⁰ Ibid.

Real Estate, criticize all three of the urban structure theories. The authors are of the opinion that the various areas which the concentric zone theory, the sector theory, and the multiple nucleus theory classify land use only on street level, and ignore the fact that uses may rise vertically also. They state quite definitely that "these broad classifications are unsatisfactory. The descriptions ordinarily apply to the predominant land use at any given location--represented generally by the use of space at the street level. In doing so they fail to account for any above-ground or below-ground uses of space which are so common in metropolitan areas. The rise of multistoried buildings permit different land uses to be piled above each other on various floors at the same location. As a result, uses may be arranged vertically as well as horizontally." ⁵¹ As can be seen from careful analysis this is a challenging criticism of the various theories and one which cannot be easily answered by either the concentric zone theory or the sector theory or the multiple nucleus theory. The criticism makes it clear that the various theories were constructed before the data offered by the city of today was taken into account.

These same authors, Ernest Fisher and Robert Fisher, also criticize the various theories for their use of the term 'land use'. They claim that the term is not clearly used.

⁵¹ Ernest Fisher and Robert M. Fisher, Urban Real Estate (New York, 1954), 313.

Moreover, the concentric zone, sector, and multiple-nuclei descriptions often fail to use the term "land use" clearly. Sometimes "land use" refers exclusively to the types of structure occupying various locations. The structures may be classified only by the purposes for which they were originally designed, and no reference may be made to areas covered by streets or parks. In other instances, the term "land use" may pertain to the predominant kind of activity found within the different structures (usually at street level) without reference to a major activity which is so characteristic of our cities-- traffic or the horizontal movement of persons and goods. ⁵²

Thus one can see that the criticism offered by these authors is of a very basic character and must be adequately answered before any of the theories of ecology can be accepted without qualification. As of the present, no adequate answer has been offered for these objections.

Of all the authors only James A. Quinn has set down an eight point program for testing the validity of an ecological theory. He begins by limiting it to the Zonal theory, but

⁵² Ibid., 313-314.

concludes by extending it to all ecological theories. ⁵³

⁵³ "An adequate research program for testing the Burgess zonal hypothesis in any given city involves at least the following items: (1) Thorough knowledge of existing topography and of those historical modifications of topography that have affected the growth of the city. (2) Adequate series of isochronal maps drawn in terms of changes in street and transportation systems of the city; these maps should show the time-cost zones of the city at various periods of its historical growth. (3) The development and precision of adequate sets of ecological criteria for characterizing zones. (4) Adequate knowledge of the composition and distribution of local population. (5) Adequate knowledge of existing buildings--functional types, repairs, capacity. (6) Detailed knowledge of existing spatial distribution of all significant personal and social data. (7) Knowledge of important cultural items; 1. which influence standards of living of different classes of the population, 2. which lead to concentrations of persons of distinctive cultural types, and 3. which give areas their traditional reputations thereby lessening mobility and increasing historical inertia. (8) The formulation of alternative hypotheses--possibly including non-circular zonal patterns, patterns which involve either more or less than five zones, or various non-zonal patterns of ecological structure. Only when these items have been taken into account can an adequate test of the Burgess zonal hypothesis or any other ecological hypothesis of urban structure be made." -- James A. Quinn, "The Burgess Zonal Hypothesis and Its Critics," American Sociological Review V (April, 1940), 218.

CHAPTER IV

SYNTHESIS AND ANALYSIS OF ECOLOGICAL THEORIES

In this chapter the present writer wishes to investigate again the various theories of spatial distribution. This time, however, they will be treated from a slightly different point of view. Instead of analyzing and criticizing these theories he wishes to synthesize as much as possible the findings which he has thus far come upon. In other words he wishes to point out the various points of similarities and dissimilarities in the different theories. He will then go further with his synthesis by applying the same technique to the numerous criticisms of the ecological theories in the hope of organizing them under a few general classifications.

Each of the three ecological theories which were considered in this paper treated the city, either implicitly or explicitly, as its ecological unit. Consequently this is the first point of agreement among the theories. From this fact that the city is the basic unit in the theories of Burgess, Hoyt and Harris, there follows that there are certain regions common to

every city. The logical conclusion from this is that there are certain very basic similarities and common points in the different ecological theories. R. E. Park in his article, "The Urban Community as a Spatial Pattern and a Moral Order" states that every city has distinctive areas within it, marked with social and cultural peculiarities. There are regions in the city, for example, in which there are almost no children--the residential hotel area. On the other hand, he says that the slums and the middle class residential suburbs are regions where the number of children is relatively very high. There are regions in the city in which unmarried men and women live; and there are regions inhabited strictly by married people. There are high divorce areas in a city and low divorce areas. There are areas infested by juvenile gangs and the athletic and political clubs into which the members of these gangs or the gangs themselves frequently graduate. In the city there are regions in which the suicide rate is excessive and regions in which juvenile delinquency flourishes. And there are other regions in which there is almost no juvenile delinquency at all. ¹

R. M. MacIver and Charles H. Page agree with Mr. Park on the various regions common to every city and conclude that the

¹ R. E. Park, "The Urban Community as a Spatial Pattern and a Moral Order," The Urban Community. Edited by E. W. Burgess (Chicago, 1926), 11-12.

city is a complete pattern of specialized areas within the more general ecological structure of the urban community.² This structure, they say, may vary: nevertheless, there is a certain basic consistency. "The structure varies from city to city, in accordance with differences of size and site and historical development and dominant functions, but in almost every case there is clearly evident division of space into zones of business activity, of low rentals and residential congestion, of transitory abode, of "middle class" residences, of expensive dwellings, of industrial concentration and so forth."³

Maurice Davie believes also that there are areas common to every city. After studying the zoning maps (which were colored as to the major types of land utilization) of twenty cities of varying sizes and types in the United States and Canada, he found that each city had a central business district, commercial land, industry areas, low grade housing, and second and first class residential housing.⁴

One does not, however, have to seek outside authority to realize that the theories treat similar factors. Each ecologi-

² R. M. MacIver and Charles H. Page, Society: An Introductory Analysis, (New York, 1949), 324.

³ Ibid.

⁴ Maurice Davie, "The Pattern of Urban Growth," Studies in the Science of Society. Edited by George P. Murdock (New Haven, 1937), 161.

cal doctrine in this thesis considered the city as made up of three main regions: the commercial, industrial and residential. The commercial region is, then, subdivided into the central business district, the industrial into light and heavy manufacturing, and the residential into high, middle and low class dwellings.

There are many implicit assumptions on which these theories are built and which are common to all the theories. They presume that the man is a social animal who is drawn together in an area out of necessity. They presume that residential areas are divided into upper class, middle class, and lower class. All the theories operate on the assumption that people of the lower class live with others of the same class, and do not reside in the same areas as the upper class. They further presume that man has a personality and is influenced by his environment. The theories assume a high degree of specialization within the city, e.g., that a person may work in a factory, shop in the central business district and live in a residential area some distance from both store and factory. It is this utilization of specialized building by different institutions that makes an areal pattern possible. The theories presume an efficient system of transportation--that people may have easy access to the business district, whether one or many.

Thus far the author of the thesis has shown how the three

theories agree in general. He has said nothing about their differences. Although the theories deal with the same basic matter and rely on similar implications and presumptions. Still they are completely different. The differences result from the manner in which they treat this basic matter. In other words, an ecologist states that the commercial, industrial, and residential areas surround the center of the city in a circular manner. Another claims that these areas form wedge shapes, radiating from the center of the city. The third ecologist holds out for a multi-centered city.

Let us now consider the differences of the individual theories. Both Burgess and Hoyt postulate the central business district as the heart and focal point of the city. They both agree that the wholesale and light manufacturing district adjoin the central business district. Hoyt, however, differs from Burgess as regards the analysis which he gives to explain urban development from the central business district outward. Burgess calls for concentric zone pattern: Hoyt insists on a sector pattern. As a result of this sector pattern, Hoyt contends that there is no gradual increase in rent in a sector which is contrary to Burgess' zonal theory. Hoyt also claimed that the wholesale and light manufacturing area adjoined the central business district, but did not encircle it.

Harris' theory is in complete contradiction with the zonal and sector theories, since it demands a many nuclei town. He

agrees with Hoyt that the wholesale and light manufacturing areas are adjacent to the central business districts and that heavy manufacturing and industry tend to follow transportation routes. He differs from Hoyt and agrees with Burgess by stating that the high class residential homes are far removed from the city's nuisances. Both the theories of Harris and Hoyt differ from Burgess' zone theory insofar as the former two theories emphasize the physical aspect of the physio-social relationship of human ecology, while the latter emphasizes the social aspect.

Let us now turn our attention to the different criticisms leveled against the ecological theories presented in this paper.

At first glance the criticisms against the various ecological doctrines seem many because of the number of sociologists who have expressed their opinions. If one, however, observes closely these different criticisms, he will note that they might be reduced to three broad classifications: criticisms against the universality of these theories; criticisms against the validity of these theories; criticisms against the terms used to describe and elucidate these theories.

As was seen in the last chapter, A. M. Fisher and R. M. Fisher were the only sociologists who leveled any criticism against the ecological theories in general. They criticize the "terms" used in the different theories and, more precisely, the term "land use". They state that the term is too restrictive when applied to the various uses of land on the vertical

level and too general when applied to the structure of the predominant activity within the structure. Such a criticism of the basic term of ecology might well destroy any hope for a universal pattern of spatial distribution.

Walter Firey levels his criticism against the Burgess and Hoyt theories. We may classify his criticism against the validity of the theories. As was explained before he put the various theories to a practical test. He believed that the validity of the doctrines could be proved by applying the theories to any given period of land use in history. Neither theory proved valid with regard to nineteenth or twentieth century Boston.

Other critics questioned the validity of the concentric zone theory alone. J. A. Quinn and Maurice Davie were unable to account for Burgess' omission of a heavy industry zone. In their opinion Burgess ignored the fact of heavy industry. Davie continues to question the validity of this theory. He criticizes Burgess for failing to account for industrial and railroad utilization. He contends that such land use may not be limited to any one zone. He also applied the zone theory to the city of New Haven, and found it lacking in many respects. Such investigations led these men to conclude to the invalidity of the Burgess theory.

Milla Alihan, J. A. Quinn, E. Fisher, A. Hawley, and

P. K. Hatt also question the calidity of the concentric zone theory. Alihan, Quinn and Fisher criticize the zones themselves. Alihan states that the concentric zone pattern is inexact when applied to criteria which characterize zones such as Mowrer's "family type zones". She also questioned the validity of zones when definite gradients exist. J. A. Quinn supports Alihan's first criticism, but disagrees with and, as has been seen, answers her second objection. E. Fisher agrees with Alihan and states that the Burgess theory offers no clear cut line of demarcation between zones. He also believes that Burgess does not account for a smaller zonal pattern existing within a larger zonal pattern as happens when sub-centers arise. Amos Hawley attacks the zonal pattern on one of its first principles, namely the assumption of a monocentric community. He believes that modern day community presents a multi-centered spatial pattern. P. K. Hatt questioned the methods of the concentric zone theory, stating that Burgess' explanation of a natural area is nothing other than a substitute for a case to case study. He advises caution in applying the data of the Burgess hypothesis. Although these criticisms are far-reaching nevertheless one can see that there is a certain degree of unity in them insofar as they all question, in some way or another, the validity of the concentric zone pattern.

The most general and often repeated criticism against the

concentric zone theory concerns its universality. J. A. Quinn, Maurice Davie, Homer Hoyt, H. Gilmore, and W. Firey attack this theory on its universality. Davie questioned this ideal pattern because it did not apply to New Haven and failed to include heavy industry. He concluded, as a result, that the zonal theory had little value. Quinn agreed on the same basis. He states that the theory needs modification. Homer Hoyt, though he started with the Burgess theory, questions the zonal theory after observing nineteen test cities. H. Gilmore believed that the zonal theory, as well as Hoyt's sector theory, are not universal. He did admit, however, that one theory may be more fit for a city than the other. Walter Firey states that universal theories, as Burgess and Hoyt, are impossible because the arrangement of land uses are too variable.

One should not conclude from this that all voices were raised against these theories. Men like Teeter, Shaw and McKay, Thrasher, Mowrer and others relied heavily on the zonal theory for pertinent data. Even in recent times the work of urban ecologists has provided an initial starting point for various studies. Eshref Shevky and Wendell Bell in their monograph, Social Area Analysis, praise these early pioneers. "The investigations summarized here had as their point of departure the detailed knowledge of the structure of urban areas derived from the studies of urban ecologists, and the contributions of those geographers and economists who have concerned

themselves with problems of urban structure and function. The techniques we have used have grown out of the experience of many of these studies in handling small area statistics." ⁵ They inspected detailed ecological maps of Columbus, Chicago, St. Louis, Minneapolis, St. Paul. They state that beyond that point, however, their chief concern with problems of social differentiation and stratification has led them to a different kind of analysis and their attention had been focused on the relationships of a different order than those considered by urban ecologists. ⁶

⁵ Eshref Shevky and Wendell Bell, Social Area Analysis (Sanford, 1955), 1.

⁶ Ibid.

CHAPTER V

CONCLUSION

Sciences are generally divided into two major categories: theoretical and practical. Although the findings which have been considered in this thesis are in the realm of theoretical sociology, still they do have some practical implications. Before closing, therefore, the present writer would like to consider some of the conclusions implied in ecological studies as well as the practicality of these studies. Finally this work will end with a general evaluation by the author of the various ecological theories.

The different ecological theories, whether one agrees with their basic delineations or not, show a significant relationship between particular areas of the city and the group life and individual behavior of the people living in these particular areas.

J. W. Bennett and M. Tumin in their book, Social Life: Structure and Function, point out this relationship. They agree that communities, particularly large urban communities,

portray certain definite distributional patterns which seem to be the result of a series of correlated factors of growth and change. They say that ecological areas, relating to income, occupation, residence status, and mental disorder, may coincide rather closely since they all represent different phases of the tendency for a city to grow outward away from blighted areas. These inner areas, they conclude, show low incomes, low prestige and poorly paid occupations, cheap hotels and slums, and high rates of certain kinds of emotional disturbances which are found in an insecure and difficult social environment. ¹

Paul H. Landis in a recent book cites other conclusions implied in the ecological studies. He states that these various studies support the sociologists' view that man's personality is in large part a product of the environment in which he was born. He concludes further that people who live in disorganized communities are threatened with disorganized lives. The general conclusion from all this is that society is now confronted with a tremendous responsibility. Society now is responsible for the behavior of these who have never had a chance to learn any behavior but that of a disorganized community. ²

¹ John W. Bennett and Melvin T. Tumin, Social Life: Structure and Function (New York, 1948), 414.

² Paul H. Landis, Introductory Sociology (New York, 1958), 213.

The practicality of ecological studies is beyond question. Its value toward city and areal planning, and its contribution to other sciences are very much in evidence. In the opinion of Milla Alihan, however, sociology has received the greatest profit and impetus from ecology.

Of great significance to the trend of sociology, however, are the methods and techniques instituted or adopted by this school and the focusing of attention upon localized and territorially delimited investigations.³

She goes on to say that ecologists have succeeded in opening fields and stimulating concentration on specific areas of study. Moreover, she states that these numerous investigations of various urban data have contributed illuminating sociological data and have put to a test the new techniques in truly localized research.⁴

Besides contributing new methods and techniques, Miss Alihan believes that these intensive investigations of small territorial units by ecologists have served to elucidate and illustrate the specific processes manifested in urban and other areas and has given insight into the various elements which go to make up our modern communities. She states also that the data of the ecological studies have made the sociologist somewhat less dependent upon other disciplines since these new

³ Milla Alihan, Social Ecology (New York, 1938), 250.

⁴ Ibid., 250, 251.

studies of various physical, technological and economic factors have thrown into relief certain conditions of the social organization for an analysis of which the sociologist has previously depended upon other disciplines. ⁵

Louis Wirth in an article, "Human Ecology" says that ecological studies have done much toward the advancement of scientific knowledge in certain fields. He believes that the studies showing significant differences in such phenomena as delinquency and mental disorders as they occur in different areas of the city are of the utmost importance in these fields. He goes on to say that the establishment of gradients for rates of personal and social disorganization passing from the center of the city out towards its periphery is a scientific achievement which carries us beyond the common sense knowledge we have previously had in these matters. ⁶

Mr. Wirth believes also that ecological studies furnish the indispensable framework of knowledge upon which social and psychic existence rests. He says that they often aid us in defining and localizing our problems and in uncovering interrelationships of which we might otherwise not be fully aware. ⁷

⁵ Ibid.

⁶ Louis Wirth, "Human Ecology," in Readings in Sociology, edited by Alfred M. Lee (New York, 1957), 148.

⁷ Ibid., 147.

Dr. Samuel Koenig in his book, Man and Society, states that ecological studies have thrown much light on city life and its problems. "The ecological studies of communities in which Park, Burgess, and Mc Kenzie were pioneers, had a far-reaching effect on the subsequent study of the city. The research reports and monographs that appeared under its stimulation made possible a much better understanding of city life and its problems." ⁸

Perhaps the greatest contribution of ecological studies to society lies in the field of physical planning. James A. Quinn in his book, Human Ecology, says that, if a city does develop a typical spatial structure, knowledge of this fact should be useful to both the public official as well as to the private citizen. If, for example, a factory or a store really belongs in one part of the city rather than in another, and if its success depends to a great degree upon its location, then knowledge of the city's structure should aid in determining the location of the new enterprise. The same is true of other institutions of a city. If a scholarly institution like a school or library can serve its people more efficiently in one place than another, then the individuals responsible for locating such scholarly institutions should know as much as possible about the ecological principles involved. The private citizen

⁸ Samuel Koenig, Man and Society: The Basic Teaching of Sociology (New York, 1957), 197.

can profit also from ecological studies. If a family wished to build or buy a home, it should understand both the factors that determine a satisfactory location and the trends of urban growth that bring about major changes in residential areas.⁹

In the field of actual physical planning the ecological trend has found great recognition. Such monographs as The Regional Survey of New York and Its Environs,¹⁰ the Natural resources Committee's Regional Factors in National Planning and Development¹¹ and its Our Cities: Their Role in the National Economy,¹² together with supplementary reports, and such technical planning manuals as Action for Cities: A Guide for Community Planning¹³ show the extent to which the ecological point of view, concepts, and methods have penetrated into the art and science of planning.¹⁴

Paul Landis states that the knowledge which ecological studies present has great social meaning for programs of slum

⁹ James A. Quinn, Human Ecology (New York, 1956), pp. 76-77.

¹⁰ The Regional Survey of New York and Its Environs (New York, 1927-1931).

¹¹ Regional Factors in National Planning and Development (Washington, 1935).

¹² Our Cities: Their Role in the National Economy (Washington, 1937).

¹³ Action for Cities: A Guide for Community Planning (Chicago, 1943).

¹⁴ Louis Wirth, "Human Ecology," 145.

clearance, in which such areas are destroyed and the process of transition from slum to business occupancy is hastened. ¹⁵

Since planning has developed to include the economic and social designing or re-designing of a community, human ecology and methodology has found an even more important part in it. Louis E. Wirth states that the ecologist has knowledge that is indispensable. "Such knowledge as the human ecologist has been able to obtain about the location of industry, the distribution, segregation, and succession of population, the areas of influence of social institutions, and the interrelationship between the physical, the technological, the economic, the political, and the cultural aspects of community life has proved itself indispensable." ¹⁶

What has been said about the value of human ecology in the planning and renovating of a city may also be applied to any areal planning. J. A. Quinn believes that human ecology provides important data for such planning. "The effective planning of areas--rural communities, cities, regions, or nations requires knowledge of process and principles underlying areal growth and organization. Human ecology, which deals with certain of these principles and processes constitutes an important part of the theoretical foundation on which effective areal

¹⁵ Paul Landis, Introductory Sociology, pp. 213, 214.

¹⁶ Louis Wirth, "Human Ecology," 145.

planning rests." ¹⁷

The validity of human ecology has been called into question many times by many people. Sociologists have long been criticizing the various ecological theories as regards their universal application, their methods, their delineations and their findings. J. W. Bennett and M. M. Tumin state that the weakness in the ecological approach consists in the fact that it does not investigate the dynamic factors which underlie the various distributions and areas. They say that ecological studies tell us where and how certain aspects of community life are distributed within the community, and how they correlate, but they do not provide much analysis of how these aspects develop and change. ¹⁸

Another weakness that is apparent in ecological doctrines is its lack of universality. In Chapter III of this thesis we considered the criticism leveled at the different ecological theories. The one criticism common to all, and which is obvious if one applies the various theories to various cities, is the failure of these theories to be universal in nature. Such a failure strongly weakens the validity of human ecology. N. P. Gist and L. A. Halbert, nevertheless, attribute validity to such theories which are individual in nature. They say that

¹⁷ J. A. Quinn, Human Ecology, 12.

¹⁸ J. W. Bennett and M. M. Tumin, Social Life, 414.

a theory of urban ecology may have validity without having universal application if it is designed to apply only to cities of a certain country or region or to cities of a particular type. They state that it may be valid provided that it is accurately descriptive of the spatial configuration that actually exists. ¹⁹

There still remains another main criticism, of which we failed to make mention in Chapter III. This criticism was purposely delayed until this part of the thesis because it attacks more the method of ecological studies, rather than any specific study, and therefore may be classified under the general weaknesses.

Park, ²⁰ Mc Kenzie, ²¹ Burgess, ²² and other ecologists

¹⁹ Noel P. Gist and L. A. Halbert, Urban Society (New York, 1956), 82.

²⁰ "In short, human society is, or appears to be organized on two levels, the biotic and the cultural." Robert Park, "Succession and Ecological Concept," American Sociological Review, I (April, 1936), 175.

²¹ "The unit of ecological study is the communal organism of individual persons, a geographical and cultural habitat, and an interrelated and interdependent biosocial unity." R. D. Mc Kenzie, "Demography, Human Geography and Human Ecology," Fields and Methods of Sociology, edited by L. L. Bernard (New York, 1934), 59.

²² "Community signifies individuals, families, groups, or institutions located upon an area and some or all of the relationships which grow out of this common location." R. Park and E. Burgess, Introduction to the Science of Sociology (Chicago, 1927), 163.

in their various works have stated that human relations within integrated areas may take place on two levels: the ecological and the social. Milla Alihan severely criticized this point of view. She insists that the ecological and the social are not separate parts of reality, but are only abstractable aspects of the total areal complex. She says that ecologists approach the concept of "community" on its asocial aspect; yet they often find themselves compelled to take account of the social factors which in reality are intrinsically related and bound up with the asocial community. Miss Alihan states that, if ecologists persisted in dealing with the ideal type, for the purpose of study, the ecological aspect could be treated apart from the social. However, the problem of validity and scientific utility of the ideal would then arise. Miss Alihan states that ecologists do not pursue this course consistently. What is to them an abstraction at one time, becomes a reality at another. ²³

J. A. Quinn agrees with Miss Alihan as regards the twofold aspect of the community. He disagrees with her, however, as regards the consideration of these aspects. He believes that it is profitable to analyze certain types of areas, such as metropolitan regions, chiefly in terms of an integrated spatial structure that arises out of impersonal ecological processes. Other areas, such as the Molokan community, can better be analyzed in terms of an integrated socio-cultural milieu. Quinn

²³ Milla Alihan, Social Ecology, 49.

concludes by saying that it is in most cases useful to treat certain integrated areas as predominantly ecological and others as predominantly social in character. ²⁴

Despite the apparent disagreement between ecological theories and despite the various criticisms proffered by sociologists, nevertheless one has to admit that the field of sociology and its allied sciences and branches has indeed profited much from the data of ecology. Dr. Nicholas Timasheff in his book, Sociological Theory, has assigned an important role to human ecology in understanding social structure in America. "Despite such refutations of ecological doctrine in its radical variety, the school has made important contributions to our understanding of the social structure--as well as the spatial pattern--of the modern American city, the processes of growth, and movement which feature urban (and, to some extent, rural) life, and the role of these phenomena in helping to bring about characteristic forms of conventional as well as deviant behavior." ²⁵

Before concluding this thesis, the author would like to make a few general observations concerning human ecology and, more precisely, the ecological doctrines.

²⁴ James A. Quinn, Human Ecology, 42.

²⁵ Nicholas S. Timasheff, Sociological Theory (New York, 1957), 215.

One might infer, after reading this work, that there is little agreement among the various theories as to the spatial distribution of a given area and the numerous criticisms of the doctrines by leading sociologists might lead one to suspect the very raison d'etre of human ecology. This might well be the case if it were not for the term human ecology.

From the beginning of time the most studied of God's creatures has been man and all that pertains to man. He is the most interesting of subjects since he is the most elusive and unpredictable. To understand this unpredictableness, man is studied at every turn. His physical health is studied in medicine. His mental health is studied in psychiatry. His general behavior is studied in psychology. The power of his reason and intellect is studied in philosophy. His customs, habits, and environment is studied in sociology. It follows, then, that any branch of studies which treats about man and his actions is profitable to investigate. Human ecology, therefore, ought to be investigated since it helps, in its own way, to unravel the mystery of man in seeking to understand the reciprocal relationship that exist between man and his environment.

The different ecological doctrines, presented in this paper, were questioned by some critics as to their validity of application. Apparently these critics are looking for an

ecological theory similar in nature to the universals which one speaks of in scholastic philosophy: that which is one, but may be applied to many. Obviously such a theory is lacking. In the estimation of this writer those who seek such an ideal or universal ecological doctrine according to spatial distribution will seek in vain. The spatial distribution of a city's population depends primarily on one factor: the geography of the terrain. This is unpredictable. Some cities will be built on a lake, others will be built in a desert. Some cities will border mountains, others will be built on land level in all directions. Consequently most cities will develop spatially in different manners.

The question that concerns the present writer is why this ecological doctrine of spatial distribution has to be universal. He sees no reason why we cannot have such a pattern of the city's population on a particular level. What is repugnant about Chicago having a particular pattern of spatial distribution, Detroit another, and New York another? Certainly each particular city would profit greatly from such knowledge.

As regards the various theories of Burgess, Hoyt, and Harris, the author believes that each, in some respects, are correct; each, in other respects, are inexact. Burgess' theory, for all practical purposes, is valid for Chicago, Hoyt's theory for Detroit and Harris' for London. However, to state that one theory applies to all cities is absurd.

In the author's opinion an ecological doctrine concerning spatial distribution must not be fixed and determined, but flexible if such is possible. It seems to this writer that a particular doctrine of spatial distribution for a city will change over a period of time for various reasons and that, therefore, the ecological pattern of spatial distribution will be constantly evolving. Let us suppose, for example, that the concentric zone theory does apply to Chicago. What will prevent a group of families in the future from moving from Winnetka into Zone II, the zone of transition, and transforming at least a portion of that zone into a fashionable area? The conveniences which such a move might offer are innumerable.

Besides this freedom of movement new inventions, establishments, and even new sociological trends can play havoc with a particular theory of spatial distribution. If we could ignore zoning laws, the building of a school, or an airport in a residential area, or a factory would definitely affect that area and result in a changing spatial distribution. Imagine what consequences a twentieth century industrial revolution would have on a set ecological pattern or doctrine.

New sociological trends, as the recent suburban movement and the new emphasis on housing integration between Whites and Negroes, also greatly influence and change already determined spatial distribution. Consequently a fixed theory of spatial

distribution will not have lasting validity.

In conclusion the author of this thesis wishes to state again that, in his opinion, human ecology is of great value. He believes that ecology, though not yet completely organized as a science, can and does make an important contribution to the study and understanding of man and his relationship to his environment. He hopes that in this thesis he has, some small way, helped to organize and explain the various ecological doctrines according to their spatial distribution.

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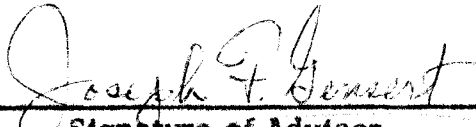
APPROVAL SHEET

The thesis submitted by Patrick J. Boyle, S.J. has been read and approved by three members of the Department of Sociology.

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the Degree of Master of Arts.

Date



Signature of Adviser