STRUCTURAL APPROACHES
TO COMMUNITY ANALYSIS

Martha J. McDonald

For several years librarians have experimented with community analysis techniques, revising and adapting them for use within the public library setting. Recent articles by Evans,[1] Goldhor,[2] Zweizig,[3] and others, as well as the community analysis institutes conducted by Roger Greer, Martha Hale, and their associates from the University of Southern California, have helped to define the role that this analysis may play as a public library planning tool. Further integrating community analysis into a long-range planning model, *A Planning Process for Public Libraries*[4] began its primary planning cycle with the gathering of community data.

Despite progress along these lines, librarians have a tendency to categorize groups and geographical areas in a way that is static, slighting the complex development of the community as a whole. The prediction of evolutionary shifts and trends, based on past and present developments, is a tedious job often neglected by investigators who are eager to complete the analysis and move on to other things. Yet, any changes made in services, facilities, and collections takes time to implement, and long range planning requires the anticipation of future community developments.

Martha J. McDonald is currently a doctoral candidate at the Indiana University School of Library and Information Science, and recently began working as Director of Southeastern Indiana Area Library Services Authority in Columbus.

This lack of responsiveness to environmental change is most noticeable within the urban setting. During the past two decades writers such as Shaughnessy,[5] Martin,[6] and Blasingame[7] have concluded that the urban public library tends to stand still amidst rampant social change, urban shifts, and an increasingly complex environment. Blasingame offered strong criticism of this in his dissertation, *The Public Library as an Urban Phenomenon.*[8] His research was based on the assumption that the American public library was originally a product of the urban/industrial society developing during the last half of the 19th century. He also hypothesized that current policies of city libraries were still geared toward the needs of an earlier time when the central business district of the city served as the multi-purpose core and drew immigrants in large groups. His conclusions supported these assertions.

Students of urban sociology are aware of the rapid decentralization of American cities since the turn of the century, yet there is little evidence to show that public libraries have responded to these environmental changes. Their community analyses tend to lack a dynamic "bird's eye" view of the city and its surrounding region. This structural approach is of value not only to libraries in larger metropolitan areas, but also to those in smaller towns and rural districts. However, given the complexities of the larger urban community, it is understandable that far more attention must be paid to this public than would be required in less populous areas.

CLASSIC MODELS OF URBAN STRUCTURE

Since 1925 several models have appeared in connection with the evolutionary development of the city. Four of these will be discussed within the context of this article. The Concentric Zone Theory (1925),[9] the Sector Theory (1939),[10] and the Multiple Nuclei Theory (1945),[11] which all deal with the internal structure of the city. The models have been generalized for comparative purposes by Harris and Ullman (see Table I). The Urban Field Theory (1965)[12] views urban areas in relationship with one another.

At least three general trends may be discerned from these theories:

1. Gradual migration from the central business district to the fringes of the city.

2. A shift from the multi-purpose core providing total service to the more specialized central business district.

3. A shift from urban-industrial center to urban field, as urban fringes increasingly overlap with one another.

The Concentric Zone and Sector models both reflect a pattern of movement from the central business district to the outer fringes of the city. In the first model, however, the use of land is dependent on the distance from the core, while in the axial organization of the latter model, areas arise in relationship to such factors as transportation routes, with patterns varying for each city.

Not appearing until 1945, the Multiple Nuclei approach to urban structure projects a more involved pattern of community development. The various nuclei are clustered according to function, and the central business district is not necessarily at the geographical center of the city, as in the other models. While the heaviest traffic flow might still be found within this central area, most services are derived from other nuclei. The larger the urban area and population, the more specialized the clusters will be.

It is likely that a city will display a combination of each of these models, since complicating urban factors will tend to alter the pure conceptual arrangements. For example, segments of cities may rise until their growth is stunted by a natural boundary or until a major transportation route is altered. Newer studies view the life cycle of cities as a series of changes in economic functions. Structural changes occur as cities adjust to serving new functions.[13]

In the above models the central section of the city is declining while the outer edges continue to expand and develop. Friedmann and Miller refer to this spread as "the expanding scale of urban life," emphasizing a pattern of metropolitan areas and inter-metropolitan periphery.[14] This theory holds that the bulk of the population will soon be centered in approximately 70 urban fields across the country, affecting all but the most sparsely populated areas. The overlapping peripheries, or "urban fringe," contribute to regional urbanization, until the fields themselves gradually blend with one another.

In a more recent study Arthur Solomon lends support to the Urban Field concept.[15] In a chapter entitled "The Emerging Metropolis" he provides U.S. Census Tract figures on employment, education, and population, reinforcing Friedmann's and Miller's analysis of shifts. Studying forty large Standard Metropolitan Statistical Areas, he noted the suburban ring share of employment and population for selected years 1948, 1954, 1958, 1963, and 1972. Between 1948 and 1972 the suburban share of the population rose steadily from 36% to 56.9%. Likewise, there were steady increases in the suburban share of manufacturing for the same period (33.1% to 51.1%), as well as of wholesale employment (8.2% in 1948 to 43.2% in 1972), retail employment (24.7% to 52.9%), and services employment (15.2% to 37.1%).[16]

Solomon further elaborates:

The economies of most troubled cities are going nowhere while their people are going elsewhere. The people leaving these cities tend to be those who have higher incomes, more education, and are younger than those who remain behind.[17]

Solomon and others indicate that these shifts are leading to serious economic problems for cities. In answer to this, the country may in time move beyond the local level to that of the field, or regional concept of urban life.

Before applying the Urban Field Theory to the state of Indiana and to the public library setting, it is important to note that the structural approach to the community is only one dimension of a multi-faceted area of study. As crucial as it is to gain an overview of the community as a "place," this aspect should not be studied in isolation. Dennis Poplin writes that most definitions of community include the components of 1) territoriality, 2) social ineraction or social inter-relations, and 3) common ties or activities (although this third area is often debated by urban sociologists).[18] This list of elements is based on a 1955 study by Hillery[19] and a 1976 update by Sutton and Munson.[20] So, while this article focuses on the need for a dynamic approach to urban structure, it is assumed that the researcher will take into account interrelationships with other relevant variables.

THE URBAN FIELD WITHIN INDIANA

To what extent have urban fields developed within the state of Indiana? Given the high number of small towns, villages, and rural areas, it might be easy to underestimate the level to which this phenomenon has risen. A closer look at census data reveals an increase in the size of Indiana's metropolitan areas, with urban spread enveloping several parts of the state.

The first evidence surfaces as Indiana census maps are reviewed and compared. The U.S. Bureau of the Census labels major areas of urbanization as Standard Metropolitan Statistical Areas (SMSA's). Although the criteria for determining these areas change every few years, they serve as means of distinguishing metropolitan from nonmetropolitan areas. Boundaries are determined according to population, employment, and transportation patterns, with each area centering around the activities of one or two cities. According to the 1962 *County and City Data Book*[21] eight SMSA's then existed within the state of Indiana. During the next fifteen years the boundaries of six of these areas expanded, and five new areas were added, so that by 1977 the total number of SMSA's had reached thirteen. Since the SMSA requirements have not remained constant over the years, precise, detailed comparisons are not possible. However, these maps do help in visualizing the growing urbanized areas that are beginning to overlap with one another within the state, as SMSA's continue to encompass more and more territory.

Further evidence supporting the concept may be derived from tracing county migratory patterns. Since the 1980 census figures are still incomplete at the time of this writing, comparisons have been made for the period between 1960 and 1975, with figures appearing in the 1977 *County and City Data Book*.[22] Census tables were surveyed to discern population shifts among the counties. According to the theory those counties with larger cities would be experiencing out-migration, as people move from the center to the fringes of the metropolitan areas. At the same time, those counties without major urbanized

areas would be on the receiving end of these shifts. Counties rather than SMSA's were used as units of comparison since their boundaries have remained relatively fixed over time.

To determine the direction of population shifts "net migration" figures are used. It is necessary to distinguish this measure from "natural increase," the other major component of population change. While natural increase measures the difference between the number of births and the number of deaths within an area, net migration represents the difference between the number of persons moving into an area and the number of persons moving away from an area during a given time period (positive number means in-migration, negative means out-migration). It is therefore possible for an area to have a high level of out-migration and still be gaining in total population, if the natural increase is high (number of births heavily outweighing number of deaths).

Census figures include net migration data for two time periods during the past two decades: 1960-70 and 1970-75. Net migration patterns for the most urbanized counties were surveyed first. The six cities with total populations of over 100,000 in 1975 were selected (Hammond has since dropped to 93,440 according to 1980 figures), and census data as collected for each of their counties. (See Table II). Each of these counties experienced out-migration for both time periods, with the exception of Allen County, with in-migration between 1960 and 1970, and out-migration from 1970 to 1975. This indicates that the shift to the urban fringe has exceeded the county boundaries in all of these cases (including Allen for the second period).

A general migration pattern may also be discerned for the less-urbanized counties. Of the twenty-one counties receiving in-migration for both time periods, twenty had no cities with 25,000 or more in population. (The one exception was the case of Monroe County, including the city of Bloomington. The in-migration figures for this county may be greatly due to a change in census methods during the 1960's, allowing for students to be counted as residents for the first time. Given Bloomington's university enrollment, this would have affected the in-migration statistics.)

The patterns of in-migration to the less urbanized counties of Indiana may be viewed in another way. Of the 54 counties where all cities were less than 25,000 in population, 20 (37%) experienced in-migration for both time periods, and 22 (42%) did for one of the two periods. This results in a total of 79% of the 54 counties within this category.

Based on the above figures it is clear that urban spread is a reality within Indiana. Wise librarians will take this into account, whether planning at the local, regional, or state level. No community exists within a vacuum, and while a sound community analysis requires an overview of the internal structure of a city or town, the researcher must also discern how it fits within the context of the region and state. This is true whether the person is running a one room

library next to a country gas station or working amidst skyscrapers in a major metropolitan area.

APPLICATIONS TO THE PUBLIC LIBRARY SETTING

The classic models depict the community as a conglomeration of constantly changing interrelated parts, in turn relating to a broader environment beyond the arbitrarily placed local boundaries. While few if any cities conform entirely to the internal structure models, each will possess some of their elements. Likewise, whether a public library is located within an urban field or somewhere beyond the fringes, the "field" approach to community analysis will provide a broader base for administrative decision-making.

The Concentric Zone, Sector, and Multiple Nuclei theories provide the librarian with keys to analyzing past trends within his/her own service area. Once evolutionary trends have been discerned predictions of future shifts and developments may be made.

Librarians should be careful not to underestimate the value of a map as part of the summary report on the community. This does not have to be a static picture of the service area, but rather a dynamic representation of ongoing shifts and changes within the area. This can be documented through the use of overlays or by shading areas such as rising, stable, and declining residential and business areas. The resulting product will be the community's own model of internal structure, incorporating some of the elements of classic models. This, then, should be updated on a regular basis.

Librarians in states such as Indiana have already begun coordinating community analyses at the state and regional level. Sources along the lines of INDIRS (Indiana Information Retrieval System), data centers, and regional planning commissions provide a wealth of information to anyone interested in gathering data on a particular area. Yet the Urban Field Theory provides even more incentive for filtering local analyses into the regional level. Analyses beginning in the local setting could easily be coordinated by each regional cooperative, in turn filtering through to state networks. As urban life continues to expand and population shifts increase, community analysis will be most effective if viewed in conjunction with studies from neighboring locations.

Although the boundaries of regional cooperatives might not coincide with patterns of population concentration, administrators of these organizations appear to be in the best position to develop regional overviews. According to this plan, analyses would be conducted by public librarians at the local level and next sent to the cooperative for coordination with studies from other communities within the region.

The library world has expanded far beyond the realm of the single library and its collection. While maintaining its own autonomy, each library now has the opportunity to provide service from sources beyond its local setting. Simi-

larly, the urban community has expanded past the arbitrary boundaries of the library's service area. States may now be described as having urban and rural fields. Indiana's concept of a library community will need to be reviewed in light of change.
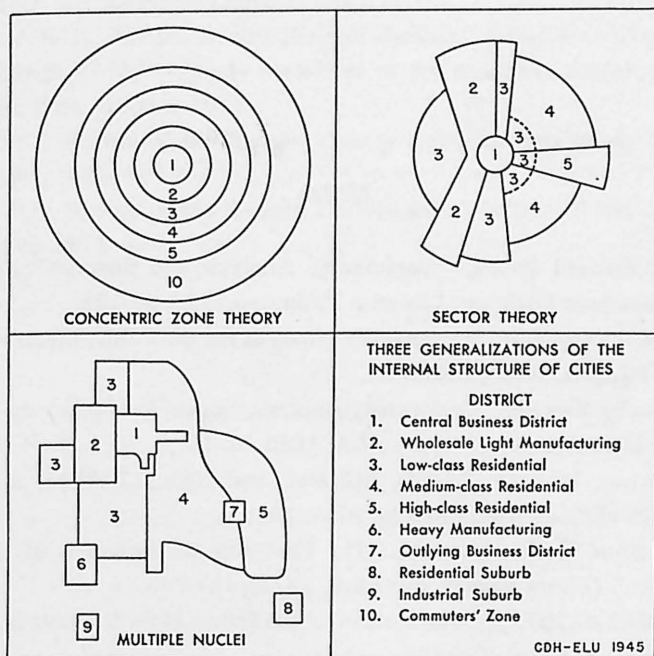

CONCENTRIC ZONE THEORY

SECTOR THEORY

MULTIPLE NUCLEI

THREE GENERALIZATIONS OF THE
INTERNAL STRUCTURE OF CITIES

DISTRICT
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
10. Commuters' Zone

CDH-ELU 1945

Table I —Generalizations of internal structure of cities. The concentric-zone theory is a generalization for all cities. The arrangement of the sectors in the sector theory varies from city to city. The diagram for multiple nuclei represents one possible pattern among innumerable variations.

Reprinted with permission from Chauncy D. Harris and Edward L. Ullman, "The Nature of Cities," *Annals of the American Academy of Political and Social Science*, 242 (November, 1945), 13.

Table II

City	Total Population of City in 1975	County	Net Migration (% of County, 1960-70	Change) 1970-75
Evansville	133,566	Vanderburgh	-6.6%	-5.4%
Fort Wayne	185,299	Allen	5.4	-1.7
Gary	167,546	Lake	-8.3	-5.3
Hammond	104,892	Lake	-8.3	-5.3
Indianapolis	782,139	Marion	- .1	-5.1
South Bend	117,478	St. Joseph	-7.4	-4.7

Notes

[1] G. Edward Evans, "Community Analysis and Surveys," *Developing Library Collections* Littleton: Libraries Unlimited,1979. 97-121.

[2] Herbert Goldhor, "Community Analysis for the Public Library," *Illinois Libraries*, 62 (April, 1980), 296-302.

[3] Douglas Zweizig, "Community Analysis," *Local Public Library Administration*, ed. Ellen Altman. Chicago: ALA, 1980, 38-46.

[4] Vernon Palmour, Marcia Bellassai, and Nancy DeWath, *A Planning Process for Public Libraries.* Chicago: ALA, 1980.

[5] Thomas W. Shaughnessy, "The Emerging Environment of the Urban Main Library," *Library Trends*, 20 (April, 1972), 757-768.

[6] Lowell A. Martin, "The Future of the Urban Main Library: II," *Library Trends* 20, (April, 1972), 774-787.

[7] Ralph Upshaw Blasingame, Jr., "The Public Library as an Urban Phenomenon," diss. Columbia Univesity, 1973.

[8] Blasingame.

[9] Ernest W. Burgess, "The Growth of the City," *The City.* Robert E. Park, Ernest W. Burgess, and R.D. McKenzie, ed. Chicago: University of Chicago Press, 1925, 47-62.

[10] Homer Hoyt, *The Structure and Growth of Residential Neighborhoods in American Cities.* Washington: Federal Housing Administration, 1939.

[11] Chauncy D. Harris and Edward Ullman, "The Nature of Cities," *The Annals of the American Academy of Political and Social Science*, 242 (November, 1945), 7-17.

12 John Friedmann and John Miller, "The Urban Field," *Journal of the American Institute of Planners*, 31 (November, 1965), 312-320.

13 R.D. Norton, *City Life-Cycles and American Urban Policy*. New York: Academic Press, 1979.

14 Friedmann and Miller, 312.

15 Arthur P. Solomon, *The Prospective City*. London: MIT, 1980.

16 Solomon, 7.

17 Solomon, 13.

18 Dennis E. Poplin, *Communities: A Survey of Theories and Methods of Research*. 2nd ed. New York: Macmillan, 1979, 8.

19 George A. Hillery, Jr., "Definitions of Community: Areas of Agreement," *Rural Sociology*, 20 (June, 1955), 111-123.

20 Willis A. Sutton, Jr. and Thomas Munson, "Definitions of Community: 1954 Through 1973," a paper presented to the American Sociological Association, New York, August, 1976.

21 U.S. Bureau of the Census, *County and City Data Book, 1962*. Washington: GPO, 1963, 633.

22 U.S. Bureau of the Census, *County and City Data Book, 1977*. Washington: GPO, 1978, 138, 150.