

# INTERPRETING THE CITY

## An Urban Geography

TRUMAN A. HARTSHORN



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# preface

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This book is divided into three parts for maximum flexibility to meet the needs of a variety of geography and urban studies courses taught in many different time frames. The book can be used in an urban studies course that might be the only geography course a student takes, or it may be used by urban geography majors who have already been exposed to the fundamentals of economic or social geography. It was designed to fit both quarter- and semester-length courses. The chapters are all substantial, but one or more can be omitted without sacrificing continuity. Supplemented by additional readings or exercises, the book could also be used in a two-course sequence.

Part One (Chapters Two to Six) is, by itself, a study of external relationships among cities. It treats cities as points. Part Two is a transition section. Chapters Seven and Eight deal with central place theory and manufacturing location, respectively. Chapters Nine and Ten focus on the urban physical environment and perception of the city. This section is very important to an appreciation of the material in Part Three (Chapters Eleven to Twenty), which deals with the internal structure of the city.

Students not previously exposed to urban geography will want to read the chapters in the order in which they appear. Students with prior geography experience may not need Chapter Seven ("Central Place Theory") or Chapter Eight ("Manufacturing Locations"), but instructors may want these students to study the behavioral applications of these topics, which appear near the end of the chapters.

The book represents a new departure for the

urban geography course, but one within the context of a traditional framework. The emphasis is on a balance among historical, behavioral, economic, and social themes. A special feature to assist students is that problem solving and applications are integrated into the fabric of each chapter. The book is as up to date as possible, incorporating 1980 census definitions and the latest thinking on energy and urban growth policy as it appeared at the close of the 1970s.

Throughout the developmental process Borden Dent, my colleague at Georgia State University and cartographer for the project, gave invaluable assistance. This interaction provided a critical review and questioning process, which is important in developing a book. We feel that the cartography and geography complement one another as a result. Frank Drago, also at Georgia State University, executed the map artwork flawlessly. Borden Dent also wrote Chapter Sixteen, "Metropolitan Retailing", which received excellent reviews.

I especially thank the three other individual chapter authors. Tom Bell, Department of Geography, University of Tennessee, was on time and on target with Chapter Seven, "Central Place Theory"; it integrates the old with the new in a rigorous and readable manner. Second, Richard Stephenson, Department of Geography, East Carolina University, made Chapter Nine, "The Urban Physical Environment," come alive. This field is still evolving rapidly, but he presents the essence of it here. Third, Wayne Strickland, Planner with the Fifth Planning District Commission, Roanoke, Va., formerly of Georgia State University, deserves special praise for his

work in putting together Chapter Ten, "Perception of the City"; this is a topic scarcely treated in competing books.

Behind-the-scenes production support has also been important. Carroll O'Brien, Connie Wise, Beverly Payne, Cheryl DeBoor, and Rheba Smith have assisted with typing. Suzanne Gray and Judith Smith have each had the Herculean task of typing the entire manuscript one or more times. For two years my conscientious taskmaster and research assistant, Jean DeMouy, kept forging ahead with minimum supervision. Barbara Denton has also provided moral and hard copy support.

I would be remiss if I did not also thank my reviewers. Six geographers have critiqued the manuscript at least once. James Bohland, University of Oklahoma, W.A.V. Clark, University of California at Los Angeles, Peter Rees, University of Delaware, and Martin Cadwallader, University of Wisconsin at Madison, were each able to show me my mistakes and limitations as well as point the way. To Gerald Karaska, Clark University, who has worked on at least three drafts, I owe special thanks. He provided firm encouragement and very positive reviews all the way. Janet Duncan, Boston State College (or, as I first came to know her, "Reviewer C"), practically wrote a book herself in making superb suggestions on

the content and organization of the manuscript.

I am greatly indebted to countless others who have also assisted with manuscript reading and photo research; they include James E. Vance, Jr., Larry Ford, Roman Cybriwsky, Peter Muller, David Longbrake, Roger Zanarini, Richard Pillsbury, and Richard Forstall.

Administrative support at Georgia State University provided another key role in the success of this project. I am indebted to Richard Pillsbury, Acting Chairman of the Department of Geography for most of this period. Dean Glenn G. Thomas supplied an appropriate environment and commitment in the College of Arts and Sciences and generous personal support. Associate Dean Clyde Faulkner also followed the project closely, always offering encouragement and thoughtful counsel.

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**Truman A. Hartshorn**

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## chapter one

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# THE GEOGRAPHER AND THE CITY

Why study the city? We have all asked ourselves this question, and we all have our own reasons. The majority of us North Americans live in the city, were born there, and will live there the rest of our lives. This does not mean that we understand the city. Why are activities where they are? Why do neighborhoods change? Where are the people and jobs going? These are the kinds of questions to which geographers seek answers.

We also study the city because it presents many frustrations and a multitude of problems that need solution. Our experience with the city is typically pleasant, based on the lifestyle and flexibility that urban living affords. But it is also easy to identify its shortcomings. Negative feelings about cities often arise from unfavorable personal encounters or from more philosophical attitudes associated with the nostalgia for rural country environments. For example, we often read about problems of *urban decay*, growing *crime rates*, and *high unemployment levels* in the city and hear that “things are not like they used to be.”

Cities are the centers of power—economic, political, and social—in our society. They are where the action is in terms of innovations and control. Tremendous quantities of capital have been invested in them, and their development is an ongoing process. One estimate indicates that over \$200 billion is represented by central cities alone, excluding suburbs.<sup>1</sup> But this investment in

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<sup>1</sup> William C. Baer, “On the Death of Cities,” *The Public Interest*, 45 (Fall 1976), 7.

physical artifacts is only part of the equation because it excludes the tremendous resources represented by the skills and expertise of the people living there and their cultural heritage. It is the people—their neighborhoods, their perceptions, their activity patterns, and their needs—that we need to know more about.

## WHAT IS THE CITY?

Defining the city is a difficult task. We usually use vague phrases, such as “a place larger than a village or town,” to describe the city. The word *urban* also has a somewhat nebulous connotation. For example, *Webster's New Collegiate Dictionary* defines *urban* as “of, relating to, characteristic of, or constituting a city.” Being more specific with either word can lead to arbitrary distinctions, but generally a city can be described as a concentration of people with a distinctive way of life, in terms of employment patterns and organization. A high degree of specialized and segregated land uses and a wide variety of social, economic, and political institutions that coordinate the use of the facilities and resources of the city make cities very complex machines.

## Rural-Urban Continuum

Distinguishing the *rural* from the *urban* realm is relatively easy in terms of identifying polar opposites, but determining a critical breaking point between the urban and rural forms is not as simple. A continuum, for example, can be drawn with rural areas at one end and urban concentrations at the other (Figure 1-1). At the rural end of the urban-settlement spectrum, a dispersed agrarian population, hamlets, and small towns exist. The designation *urban* typically requires a much larger settlement size than the hamlet or town in terms of numbers of people. This deter-

table 1-1

**Selected National Definitions of Urban Population**

Country	Minimum population
Sweden	200
Denmark	200
South Africa	500
Australia	1,000
Canada	1,000
Czechoslovakia	2,000
Israel	2,000
France	2,000
Cuba	2,000
United States	2,500
Mexico	2,500
Belgium	5,000
Iran	5,000
Nigeria	5,000
Spain	10,000
Turkey	10,000
Japan	30,000

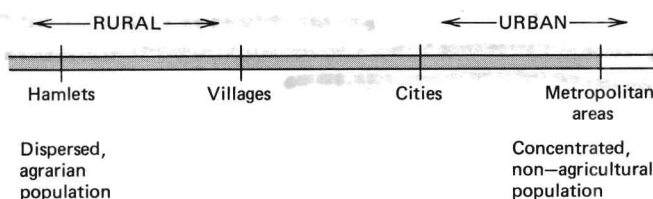
Source: United Nations, Department of Economic and Social Affairs, “Growth of the World's Urban and Rural Population, 1920–2000,” *Population Studies*, 44 (1969), 81–84.

mination varies widely country by country. A range in the minimum population size values for urban places in selected nations is shown in Table 1-1. For some nations the number is less than 500 (Sweden, Denmark); in others it is 1000 (Canada, Australia); 2000 to 5000 (France, United States, Iran), or as much as 30,000 (Japan). These variable definitions make it very difficult to compare urban population statistics country by country.

A complete guide to United States Census Bureau definitions of the city that are the basis for city designations is found in Appendix A, as are Canadian urban definitions. The discussion includes a chronology of the use of terms, including metropolitan area designations. Statistical subdivisions used by the Census Bureau to collect and report data within the city are also discussed. The student must study, and become conversant with, this terminology before proceeding to the next chapter to avoid later confusion.

## The Urban Lifestyle

Sociologists and anthropologists have worked for many generations in an attempt to isolate the fundamental cultural characteristics of the urban lifestyle. The urban pattern generally involves



**Figure 1-1 Rural-urban continuum.**

more specialization in the work force, more class distinctions, more formal participation in cultural activities, and, in general, a faster pace of living and tighter organizational structure. Two contemporary symbols of this organization are the vehicular traffic signal light and the time clock. Urban life demands more discipline, firmer scheduling, and precise deadlines—unlike the flexibility and uncertainty more often found in rural areas.

The increasingly dominant urban posture of the United States and Canada had an accelerated impact on rural areas following World War II. At that time the television, movie theater, radio, and newspaper media began casting a wider and more influential network of urban values on the countryside. Rural residents, however remote, readily adopted urban cultural elements and attitudes. This cultural transition was reinforced by a parallel increase in the migration of urban residents to rural nonfarm environments. Growth of industry in rural settings, and the expansion of long-distance rural-urban commuting to work, also revolutionized country living standards. Concomitant with these changes, urban employment activity also experienced maturation in the postwar era.

### Employment Structures

Economic activities have traditionally been classified on the basis of the work tasks involved. *Primary activities* rely directly on raw materials from the earth and sea (e.g., forestry, mining, fishing, nonmechanized agriculture). The primary sector of North American economies has declined in importance throughout the twentieth century but was never an important form of urban employment. The rate of decline accelerated after World War II in the United States (see Figure 1-2 and Appendix B).

*Secondary activity* employment involves the mass production of goods and is associated with mechanized agriculture and manufacturing activity. The percentage of the gainfully employed in the United States in this area has leveled off since the 1920s (see Figure 1-2), but manufacturing does remain an important urban employer, especially in the older cities in the Northeast.

*Tertiary activities* involve the provision and distribution of tangible personal and business services and represent the largest (and growing) share of urban employment. An accelerating rate of increase in the tertiary sector in the United States, beginning in 1970, is shown in Figure 1-2. This growth is expected to continue through the year 2000.

In the past two decades *quaternary* and *quinary activity* employment forms have also gained stature, but they account for a small share of total employment. The significance of these activities far outshadows their numbers. *Quaternary activities* involve the processing of information and are associated with routine, programmable, white-collar clerical and data processing work performed in office buildings in ever-greater quantities. *Quinary activities* are a specialized form of the information processing industry, involving top management-level executives, managers, researchers, government employees, and educators. This latter decision-making activity is non-programmable and highly individualized.<sup>2</sup> Both quaternary and quinary activity occurs predominantly in larger metropolitan centers.

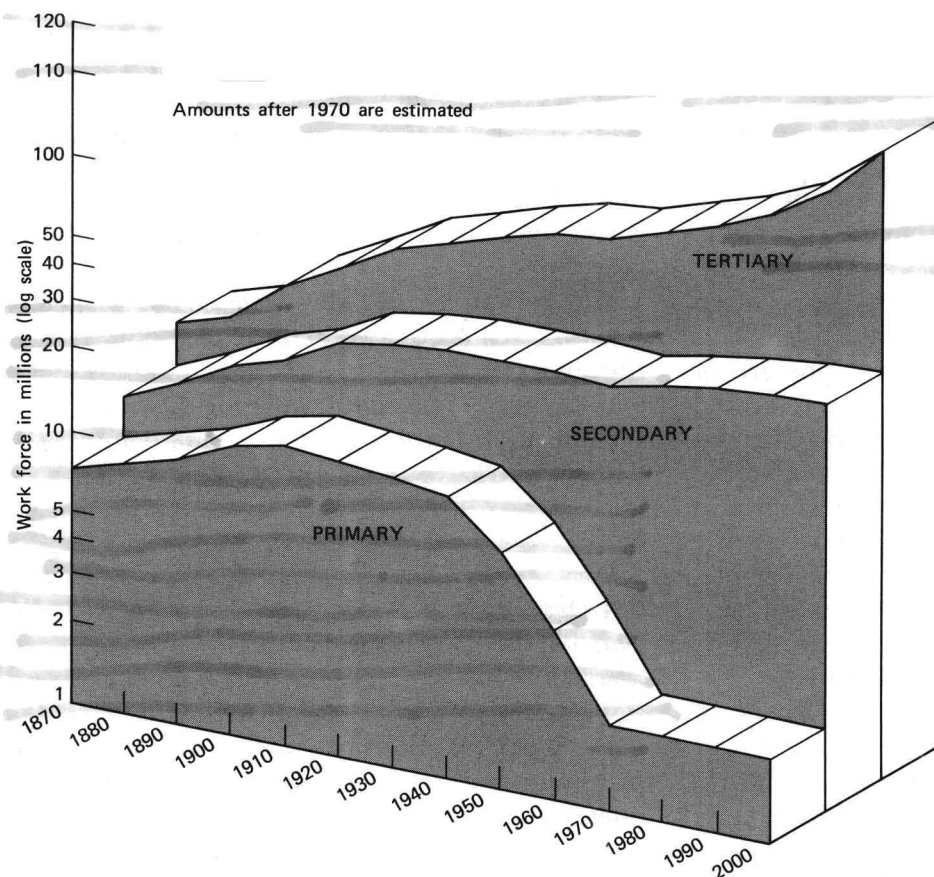
### WHY URBAN GEOGRAPHY?

Training in urban geography provides the student with a conceptual working knowledge of the *growth, function, and location* of the city on the one hand, and an understanding of its *spatial structure*, including the interrelationships among its people and activities, on the other. The urban geographer's approach is that of emphasizing location and space. The *spatial* perspective, in fact, is the central theme of geography. The *map* is a vital research tool that geographers use to communicate and operationalize this philosophy. The map adds an extra dimension by demonstrating the importance of place in urban analysis.

Four themes characterize urban geography studies, according to Bourne: (1) the interdis-

<sup>2</sup> Ronald Abler and John S. Adams, "The Industrial and Occupational Structure of the American Labor Force," *Papers in Geography*, No. 15, Department of Geography, Pennsylvania State University, University Park, 1977.





**Figure 1-2 Occupational profiles in the United States, 1970–2000. Vertical axis of graph is scaled logarithmically. Slope of data paths—whether rising or falling—denotes yearly rate of change.**

SOURCE: Redrawn with permission from Regina Belz Armstrong, *The Office Industry: Patterns of Growth and Location*. MIT Press, Cambridge, Mass., 1972, 17. Copyright © 1972 Regional Plan Association.

plinary convergence of interests and methodologies of the social and behavioral sciences; (2) the wide use of quantitative techniques and rigorous testing of hypotheses; (3) the study of population groups combined with individual behavior; and (4) direct involvement with social issues and policy making.<sup>3</sup> These traditions interact not only to produce better urban theory but also to assist the solution of urgent problems.

Urban geographers increasingly focus on the social and/or behavioral processes that underlie observed patterns. In the late 1960s many geog-

raphers began applying their techniques to social problems sparking movement toward *social relevancy*. At the same time others became *social activists*, calling for an end to the exploitation of the poor and minorities and planning with, not for, them.<sup>4</sup>

One of the strongest arguments for the study of urban geography today is the strong preparation it provides for careers in planning and consulting related to physical and community development. This feature of urban geography has not gone unnoticed in the planning field. A study

<sup>3</sup> Larry S. Bourne, "Introduction," *Internal Structure of the City*, Oxford University Press, New York, 1971, 5–6.

<sup>4</sup> William Bunge, "The First Years of the Detroit Geographical Expedition: A Personal Report," *Field Notes*, Discussion Paper No. 1, 1969.

of the undergraduate training of planners conducted in the mid-1970s indicated that geography was the most frequently indicated major for practitioners, after planning and architecture.<sup>5</sup> Geographers in planning outnumbered majors in economics, engineering, public administration, political science, sociology, and all other disciplines.

This book captures the essence of the trend toward a more *applied* urban geography and addresses the tools students will need to help solve these problems. It recognizes that more nongeographers are enrolled in interdisciplinary urban studies and planning programs that require urban geography courses. The intent is therefore to present a broad array of material that provides a sound factual and methodological base for the informed citizen, as well as a foundation for in-depth research and problem solving.

Recent evidence of the viability of policy applications of urban geographic research can be found in the products of the *Comparative Metropolitan Analysis Project* of the Association of American Geographers, funded by the National Science Foundation. The aim of that project was to assess the economic and social progress in the country's twenty largest metropolitan areas toward national urban goals in the 1970s. Twenty vignettes on individual cities each explored the past, present, and future circumstances of urbanization in the particular city.<sup>6</sup> A second work, *A Comparative Atlas of America's Great Cities*, provided detailed socioeconomic data in map form for these cities.<sup>7</sup> A third volume dealt with major public policy issues, showing how a geographer with a spatial orientation could contribute to an understanding of such diverse topics as the environment, public service delivery, and metropolitan governance.<sup>8</sup>

## EVOLUTION OF URBAN GEOGRAPHY

An early emphasis in American geography was placed on the *site and situation* of the city. This tradition developed out of the man-land philosophical approach practiced by many members of the discipline. Carl Sauer, whose 1925 essay, *The Morphology of Landscape*, became the authority on the subject, is most often identified with this philosophy.<sup>9</sup> Sauer was not an urban geographer but his work did inspire many urban geographers to study the population and economic characteristics of cities in relation to their physical location. Fieldwork was an integral part of this type of research. Many case studies of American cities were produced in the 1930s and 1940s in this tradition.

*Hinterland* and *trade area* studies represented another early research theme in urban geography, probably inspired by the rich tradition of regional studies in geography. That approach involved exhaustive research on the physical, economic, cultural, and political underpinnings of an area, showing how it was similar and different from other areas. In an essay commissioned to report on the status of the field of urban geography in 1954, mention is made of studies of newspaper circulation and retail sales tributary areas of cities as examples of such research.<sup>10</sup> In general, the goal of this activity was to explain the function of an area. Many of the studies compared cities at a particular point in time.

Interest at another scale of urban research also developed concurrently with the functional studies emphasis. That work focused on the *morphology* or *internal structure* of the city. This approach also had roots in the regional studies tradition. Land use inventories, involving the classification and mapping of functional areas in the city, such as industrial and residential districts, accounted for much of the early activity. This research

<sup>5</sup> Paul F. Mattingly, "On the Value of Geography in Planning Practice," *Professional Geographer*, 26 (1974), 310–314.

<sup>6</sup> John S. Adams, ed., *Contemporary Metropolitan America*, 4 vols., Ballinger, Cambridge, 1976.

<sup>7</sup> Ronald Abler, ed., *A Comparative Atlas of America's Great Cities*, University of Minnesota Press, Minneapolis, 1976.

<sup>8</sup> John S. Adams, ed., *Urban Policymaking and Metropolitan Dynamics: A Comparative Geographical Analysis*, Ballinger, Cambridge, 1976.

<sup>9</sup> Carl Sauer, *The Morphology of Landscape*, University of California Press, University of California Publications in Geography, Berkeley and Los Angeles, 2 (1925), 19–53.

<sup>10</sup> Harold M. Mayer, "Urban Geography," *American Geography: Inventory and Prospect*, P.E. James and C.F. Jones, eds. Association of American Geographers, Syracuse University Press, Syracuse, 1954, 143–166.

gradually established an identity for the geographer as an *urban planner*. Extensions of this work into analyses of residential change and expansion of the city into rural environments and concomitant functional changes reinforced this association of geography with planning.

### Locational School

The synergism created by the blending of the internal structure-planning approach and trade area emphasis has been a healthy situation for the field of urban geography. The emergence of the *locational school* of geography in the 1950s, emphasizing systematic quantitative analyses in order to generate a stronger theoretical underpinning for the discipline, also benefited urban studies. Two research interests, one focused on studying *cities as points* and the other on *cities as areas*, grew in stature from this increasing rigor. Wider use of census data and more broadly based comparative studies were made possible with computer applications. Gradually urban studies became the leading research frontier in geography as a result of this work.

Geographers employing the analytical methodology identified with the locational approach at first made visual map comparisons of spatial distributions, referred to as *areal associations*, in order to develop generalizations. Later, more precise relationships were made possible through the application of descriptive statistical tests to the observations.

As more powerful inductive statistical and computer applications became available, a wider array of variables was applied to explain distributions. Subsequent adoption of mathematical and probabilistic models had the advantage of making analyses even more realistic, closely approximating the *uncertainty* of individual decision making that underlies most urban activity. The use of simulation models and a systems analysis framework also assisted the development of more realistic solutions and identification of fundamental processes.

Those geographers first advocating and practicing this *quantitative approach* were mainly associated with the University of Washington (Seattle), the University of Iowa (Iowa City), and Northwestern University (Evanston). Among the

pioneers in this work were McCarty (Iowa), Garrison (Washington, Northwestern), and Ullman (Washington).<sup>11</sup> An excellent discussion of the internal dialogue in geography concerning the merits of several research traditions, including regional geography, the location school, and recent attempts at model building and quantification, appears in Haggett's *Locational Analysis in Human Geography*.<sup>12</sup>

The first major textbook in urban geography published in North America was the edited volume by Mayer and Kohn that appeared in 1959.<sup>13</sup> It was a collection of previously published journal articles. Prior to that time, the major urban textbooks in English were published in Great Britain.<sup>14</sup> The first systematic, original urban geography textbook in the United States, written by Murphy, appeared in 1966.<sup>15</sup> This was followed by the first edition of Yeates and Garner, *The North American City*, in 1971, which became the best-seller in the field in the 1970s.<sup>16</sup>

Emphasis in these early books was on land use and economic patterns of the city. Many of the influential pioneer urban geographers prior to the 1960s had been trained as economic geographers or as economists with a strong spatial bias. They naturally brought economic models with them for their urban analyses. During the past decade geographers trained with social and behavioral principles have made their impact on the discipline. Examinations of housing problems at the neighborhood level, intraurban migration flows, and the perception individuals

<sup>11</sup> James E. Vance, Jr., "Geography and the Study of Cities," *American Behavioral Scientist*, 22 (1978), 131–149.

<sup>12</sup> Peter Haggett, *Locational Analysis in Human Geography*, Vol. 1, *Locational Models*, Wiley, New York, 1977, 2–10.

<sup>13</sup> Harold M. Mayer and Clyde F. Kohn, eds., *Readings in Urban Geography*, University of Chicago Press, Chicago, 1959.

<sup>14</sup> Examples of early British books include R.E. Dickinson, *City, Region, and Regionalism*, Kegan Paul, London, 1947; and Griffith Taylor, *Urban Geography*, 2nd ed., Dutton, New York, 1951.

<sup>15</sup> Raymond E. Murphy, *The American City: An Urban Geography*, McGraw-Hill, New York, 1966.

<sup>16</sup> Maurice H. Yeates and Barry J. Garner, *The North American City*, Harper and Row, New York, 1971; 2nd ed., 1976.

have of the city are all examples of this recent work. Many of these studies emphasize individual decision-making processes and have helped reestablish the tradition of field work and survey research in the discipline.

## Behavioral Studies

The term *behavioral studies* has been given to research focused on decision making. This work represents an extension of the locational school philosophy.<sup>17</sup> The rationale for this approach is that location and space cannot be fully understood by simply finding two similar spatial patterns (as between crime and education). Such explanations are inadequate because they correlate two phenomena without incorporating a *process* with which they are associated. They do not answer the question of why such associations exist, nor establish the environment within which the decision was made.

Proponents of behavioral studies “believe that the physical elements of existing and past spatial systems represent manifestations of decision making behavior on the landscape, and they search for geographic understanding by examining the processes that produce spatial phenomena rather than by examining the phenomena themselves.”<sup>18</sup> The appeal of the behavioral theme is that it presents a very realistic framework within which to study the city. It recognizes that activities and land use changes do not just happen but arise from decisions made by individuals and organizations, public and private.

Decisions by individuals in their roles as consumers, executives, or public servants cannot be adequately explained by traditional approaches, because they are rarely made with complete information—or in the context of totally rational and optimal conditions. Entrepreneurs, bureaucrats, and citizens alike have incomplete and variable amounts of information at a given time when decisions are made. They must respond to

varying sets of stress and pressure, in the context of dynamic economic, political, and social conditions. Attitudes are also important. Studies of consumer shopping behavior, intraurban migration, housing market imperfections, and environmental perception all confirm the value of examining the decision-making process when studying change in the city.

## Other Research Traditions

Supplementing this behavioral tradition are three other widely recognized research themes in urban geography today. Together they give the field a breadth and scope not found in any other social or behavioral science. The first is the *historical-evolutionary* emphasis. Geographers in this tradition have examined the origins of modern urban form, the evolution of settlement patterns, and the role of ethnic groups in the formation of American cities. The works of Vance, Ward, Pred, and Conzen have received particular attention in this realm.<sup>19</sup> The second theme focuses on the *urban physical environment* of the city.<sup>20</sup>

Unlike other social science disciplines (except psychology), geography bridges both the social and physical sciences and has a rich tradition in physical studies. Geographers receive training in both human (social) and physical geography and are uniquely well equipped to study the interaction of people and the environment of the city. The physical theme at one time provided the major focus of the entire discipline, especially during the so-called *environmental determinism* era earlier in this century. The environmental deter-

<sup>17</sup> For a review of the methodology and accomplishment of this theme, see Chapter 12, “Behavioral Variability and Geographic Reasoning,” in Douglas Amedeo and Reginald Golledge, *An Introduction to Scientific Reasoning in Geography*, Wiley, New York, 1975, 347–379.

<sup>18</sup> Ibid., “On Laws in Geography,” 348.

<sup>19</sup> James E. Vance, Jr., *This Scene of Man: The Role and Structure of the City in the Geography of Western Civilization*, Harper and Row, New York, 1977; David Ward, *Cities and Immigrants*, Oxford University Press, New York, 1971; Allan R. Pred, *Urban Growth and the Circulation of Information: The United States System of Cities 1790–1840*, Harvard University Press, Cambridge, 1973; Michael P. Conzen, “The Maturing Urban System in the United States, 1840–1910,” *Annals, Association of American Geographers*, 67 (1977), 88–108.

<sup>20</sup> This interest is illustrated by two books: Thomas R. Dewtlyer and Melvin G. Marcus, *Urbanization and Environment*, Duxbury Press, Belmont, California, 1972; Brian J. L. Berry and Frank E. Horton, eds., *Urban Environmental Management: Plan for Pollution Control*, Prentice-Hall, Englewood Cliffs, 1974.



minism philosophy posited that all phenomena could be explained by natural variables. This narrow viewpoint was generally discredited as a viable scientific study in the pre-World War II era. A lesser version of environmentalism, associated with geography as *human ecology*, also flourished at one time.<sup>21</sup> This tradition (geography as human ecology) became prominent at the University of Chicago and led to geography becoming more closely identified with the field of sociology.

In the post-World War II era human geographers remained very cautious in their treatment of physical variables, a reaction to the earlier, more extreme position. The recent concern for the environment, brought about by the greater awareness of pollution and the degradation of the ecosystem, has stimulated urban geographers to restore the study of the environment as a legitimate study topic, even though the published literature is still small.

The final theme pursued in urban geography today can be called *radical geography*. Actually, it is an amalgam of several philosophies ranging from social relevancy studies mentioned earlier to the advocacy work associated with Bunge, the Marxist approach by Harvey and Peet, to the anarchist geography work of Breitbart.<sup>22</sup> The Marxist position is that capitalism has a built-in tendency to produce social inequality and antagonisms in that it relies on imperialistic domination and exploitation for its survival. The radical tradition is not as strong among practitioners as the other two philosophies discussed in this section, but it has contributed significantly to the field, particularly by pointing out weaknesses in traditional land use theory and giving insight into the exploitive nature of the urban housing market.

<sup>21</sup> Harlan Barrows, "Geography as Human Ecology," *Annals*, Association of American Geographers, 13 (1923), 1–14.

<sup>22</sup> William Bunge, *Fitzgerald: Geography of a Revolution*, Schenkman Publishing, Cambridge, 1971; David Harvey, *Social Justice and the City*, Johns Hopkins University Press, Baltimore, 1973; Richard Peet, ed., *Geographical Perspectives on American Poverty*, Antipode Monograph in Social Geography, No. 1, Worcester, Mass., 1972; M. Breitbart, "Impressions of an Anarchist Landscape," *Antipode*, 7, No. 2 (1976), 44–49.

## THE QUESTION OF SCALE

*Scale* is a fundamental concept in urban geography because the degree of abstraction or the relative level of the investigation determines the problem and or the tools of analysis. Scale is sometimes referred to as the *core of resolution*.<sup>23</sup> It varies according to the ratio of map distance to earth distance used in any particular investigation. Scale adjustments change the correspondence level between mapped and actual distance, modifying the territorial focus of study.

Frequently we refer to large-scale versus small-scale studies or micro versus macro approaches. Large-scale or micro studies involve a physically small study area and small-scale or macro studies a very large physical area. This areal change, which occurs with scale adjustment, can be seen in the three maps that comprise Figure 1-3. In all instances the map is drawn around Windsor, Ontario. In Map 1, which is a small-scale map covering a relatively large area, Windsor is seen in relation to a large portion of North America. An intermediate scale of resolution occurs in Map 2. It covers a smaller area with only nearby states and provinces shown. At the large-scale level, Map 3, the limits of the study area comprise only a portion of the city of Windsor, permitting examination at the neighborhood level.

Suppose at each end of these scales the geographer was asked to explain population distribution. At the North American scale (Map 1), important variables might be the proximity of Windsor to the United States Middle West, or to manufacturing areas in the Great Lakes region. At the intermediate scale the variables might include proximity to other cities in Michigan and Ontario or connectivity to other centers via alternate transportation modes. Finally, at the city scale (Map 3), the problem becomes one of explaining the location of people and activities within the city. Important variables might be proximity to the downtown commercial business district or intraurban housing patterns.

<sup>23</sup> Stafford Beer, *Management Science*, Doubleday, New York, 1968.