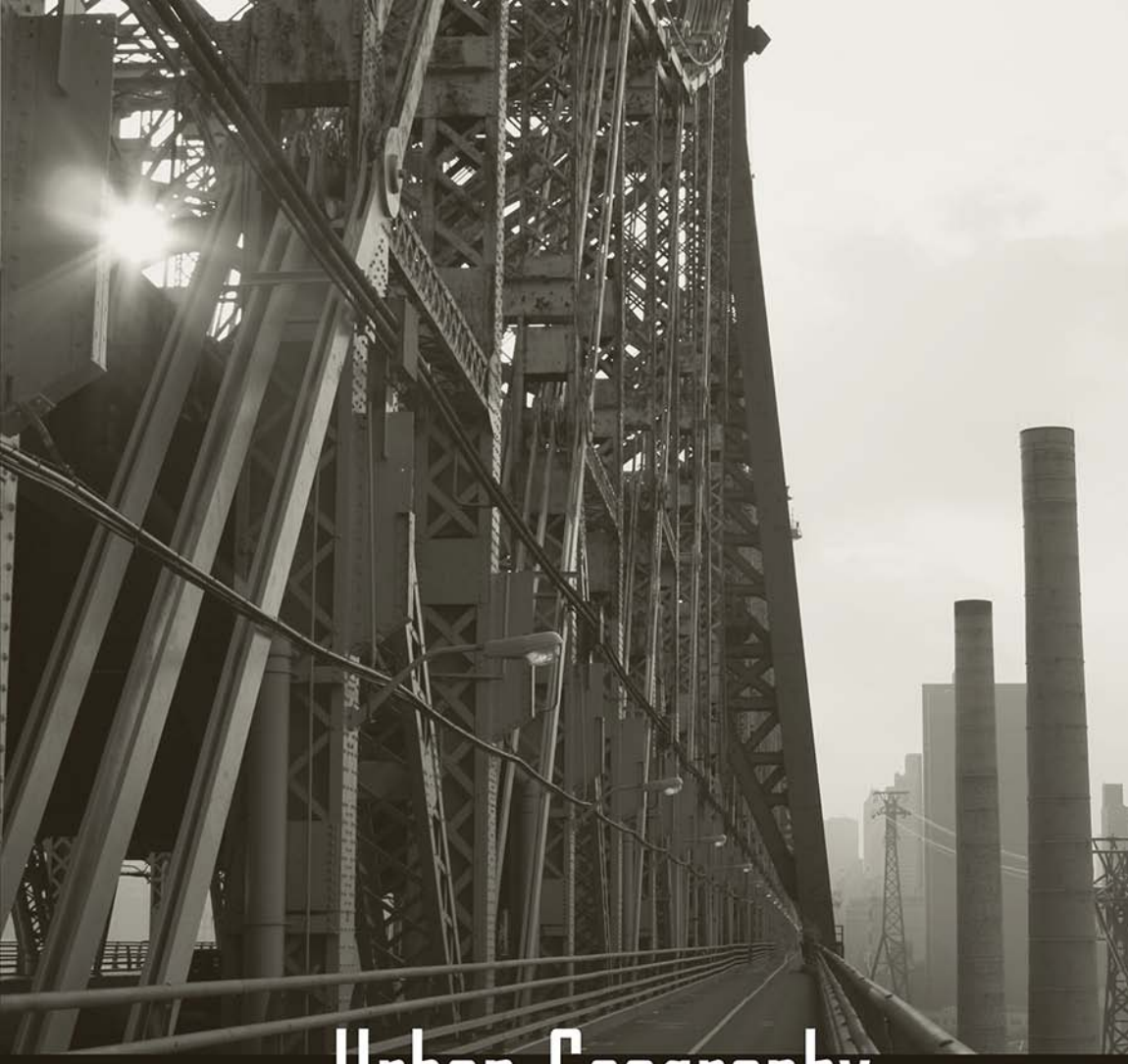

Urban Geography in America, 1950–2000

Paradigms and Personalities

Edited by

Brian J. L. Berry
and James O. Wheeler

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Preface

We are proud to present this 50-year history of urban geography in America as told by its participants. The project began as an outgrowth of a paper session organized by James O. Wheeler at the 2001 annual meeting of the Association of American Geographers (AAG) in New York entitled "Urban Geography in the 1960s." The paper presenters in this session (John S. Adams, William A. V. Clark, James O. Wheeler, and Maurice Yeates) all obtained Ph.D.s in the 1960s. Their formative years, first as graduate students and then as assistant professors, coincided with the development and maturation of urban spatial analysis. For them, this was the urban decade, when human geography first became recognized as a legitimate part of the social sciences. This recognition was guided and advanced by Brian J. L. Berry and his many doctoral students at the University of Chicago, who together established the "Chicago School" of urban geography. Berry's students latched onto his innovative ways of thinking about and doing geography—new theories, concepts, methodologies, and policy insights. As a result, this was a decade of paradigm gained and molded. The paper presentations were published, along with Berry's commentary on "The Chicago School in Retrospect and Prospect," in *Urban Geography*, 2001, Vol. 22, No. 6.

The Los Angeles meeting of the AAG in 2002 provided the opportunity for Wheeler and Berry to organize a second paper session, "Urban Geography in the 1970s." Presenters included Martin Cadwallader, Larry R. Ford, Patricia Gober, Peter G. Goheen, and Risa I. Palm, whose Ph.D.s were awarded in the 1970s. These papers, with Berry's commentary, "Paradigm Lost," were published in *Urban Geography* Vol. 23, 2002, No. 5. They revealed that the 1970s was a decade of experimentation and challenge to the spatial analysis paradigm.

The New Orleans meeting of the AAG in 2003 was the forum for two additional sessions organized by Wheeler and Berry: "Urban Geography in the 1980s" and "Urban Geography in the 1990s." The former session comprised presentations by Larry S. Bourne, Sallie A. Marston and Geraldine Pratt, David R. Meyer, and Michael Pacione, with insightful commentary by Robert W. Lake. Paul L. Knox also contributed a paper, although it was not presented in the session. The second session included papers by Trevor J. Barnes, Michael Dear, Susan Hanson, Robert W. Lake, and Helga Leitner and Eric Sheppard. Published versions of the papers from these two sessions were published in *Urban Geography*, Vol. 24, 2003, Nos. 4 and 6, respectively.

The Chicago School of the 1960s did not arise in a vacuum. Papers by Chauncy D. Harris, Elisabeth Lichtenberger and Edward J. Taaffe previously published in *Urban Geography* describe the foundations on which the superstructure of the 1960s was constructed. Taken together, these papers and the four sets of AAG presentations constitute an important historical resource that should be of value to members of the geographic profession, now and in the future, and it has been our pleasure to draw them together in one place. Here are the voices of those who created and transformed modern urban geography in North America.

In gathering the papers we did not act alone. We give an especially hearty thanks to Jodie Traylor Guy for her important editorial role in preparing the manuscripts for the four special issues of *Urban Geography*. As assistant editor for these issues, she corresponded with the authors, checked and copyedited their work, and prepared digital-ready manuscripts for the publisher of *Urban Geography*, Bellwether Publishing, Ltd., Columbia, Maryland. Bellwether, in turn, not only approved of the preparation of this collection but also provided the manuscripts in their final form. We also thank Kim Hawkins for word processing the index.

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Introduction

During the last half of the 20th century, urban geography came of age and became a recognized part of the social sciences, significantly expanding its scholarly horizons, analytical and narrative approaches, and interdisciplinary scope. Before 1950 the field was a different creature. Most urban geographic studies focused on a single city, using historical approaches to explain how the city grew and evolved, treating both the physical environment and the human geography, relying heavily on field observation and measurement because of the paucity of available published data, and focusing on such concepts as "site" in the morphology of settlement and "situation" in role and function. Many of these studies were completed as doctoral dissertations at the University of Chicago under the tutelage of Charles C. Colby.

The seeds of change appeared in the 1930s, when three students found themselves together at the University of Chicago. In chapter 1, Chauncy Harris recalls:

> At the university I met Harold M. Mayer and Edward L. Ullman, both intensely interested in urban geography. In retrospect I do not believe that Colby was responsible for Ullman, Mayer, or Harris going into urban geography. We developed interest in this field on our own. But Colby did arouse our curiosity, shape our interests, and improve our writing. He became my mentor … The simultaneous presence of three youngsters all deeply curious about urban phenomena heralded a new period in which an initial critical mass was reached. Thereafter dissertations in urban geography were not isolated individual efforts. Lively student discussions

> ranged over the state of the field, appropriate approaches to the subject, the factors in the rise and distribution of cities, functions performed by cities, and many other topics….

Of their three dissertations—Harris, 1940, *Salt Lake City: A Regional Geography*; Mayer, 1943, *The Railway Pattern of Metropolitan Chicago*; and Ullman, 1943, *Mobile: Industrial Seaport and Trade Center*—the third was the most original. Ullman measured Mobile's tributary region by using newspaper circulation, banking services, and retail and wholesale trade, forming "principles [that were] later refined as complementarity, transferability and interviewing opportunity" (Fournier, 2004, p. 321) and "spatial interaction" (Ullman, 1954a, 1954b, 1956). Ullman's interest in principle had already been sharpened in a meeting with the German location economist August Lösch when he visited Harvard University on the eve of World War II. Lösch referred the young geographer to Walter Christaller's doctoral dissertation, *Die zentralen Orte in Süddeutschland* (1933), and Ullman (1941) responded by introducing Christaller's central-place theory to American readers in an article "A Theory of Location for Cities," interestingly published in the *American Journal of Sociology* rather than in a geographical publication.

Harris reentered the scene in 1943, when he published "A Functional Classification of Cities in the United States" in the *Geographical Review*, a paper that set in motion a cottage industry of data-intensive work on city classification, soon followed by his joint effort with Ullman, "The Nature of Cities," published in 1945. Both he and Ullman, newly appointed lieutenants, had been seconded to the Office of Strategic Services when he was asked by Robert B. Mitchell, executive director of the Philadelphia City Planning Commission, to contribute a 5,000-word paper to a projected special issue of the *Annals of the American Academy of Political and Social Science*. Mitchell noted that "when I discussed this with Louis Wirth, he thought you would do it particularly well." Harris responded that

> I should like to participate in the writing of "The Nature of Cities"; it was very kind of you to think of me in connection with this topic. The thought has occurred to me that a joint paper with Dr. Edward L. Ullman might be a good deal stronger than one I might write alone. Dr. Ullman has been a keen student of American cities. He is at present a lieutenant in the Navy stationed in Washington with the Office of Strategic Services; hence collaboration would be easy.

In turn, Mitchell wrote

> I have received your letter of June 21 accepting assignment for the *Annals* volume. I know you will do a good job. If you wish to collaborate with Dr. Ullman I shall be delighted, but expect that you will take personal responsibility for the article. Harold Mayer, who is very busily engaged directing research for this Commission, sends you his greetings. Harold will guide one or two of the articles for this issue.

Harris recalled in his oral history that

> We sat down on a number of weekends in Washington, D.C. … and discussed how cities are distributed across the country and how internal patterns are arranged within them. We were interested in generalizations not description of individual cities. We worked out a typology. Perhaps, I spent less time on that article than any other I've ever written.

Later, he added

> By myself I probably would have written a more traditional article, but Ullman suggested the idea of presenting a more theoretical generalization. With respect to the patterns of distribution of cities, Ullman certainly contributed the central-place concept and the alignment of cities on transport lines, while I brought in the clustered cities of mining and industrial districts. Ullman was familiar with the work of Ernest Burgess in sociology on concentric zones in cities and of Homer Hoyt, the real-estate economist, in describing sectors of residential development. The multiple-nuclei pattern was suggested by me on the basis of observation that not all activities of a city cluster around a single center, but that different activities have different points of attachment.

It was the elegance and simplicity of the summary diagrams designed to illustrate the ideas that mattered. They put together in one place the concepts that became central to American urban geography in the next half-century, either as research foci during the emergence of a new "Chicago School" of urban geography during the 1960s or as items of opprobrium as a later generation challenged that School's precepts. Their diffusion is recounted in chapters 2 and 3.

The next steps came after World War II. Harris was hired by the University of Chicago and quickly moved into administration. When Colby retired, Mayer was brought back from the Philadelphia City Planning Department to teach urban and transportation geography. Ullman joined the faculty at Harvard, but left for the University of Washington in Seattle when the Harvard geography program was terminated. Another Chicago graduate, Malcolm Proudfoot, who completed his Ph.D. in 1936, had joined the department at Northwestern University, and one of his students was William L. Garrison, who joined the Washington department in 1950. Clyde F. Kohn, a Michigan Ph.D., taught at Northwestern from 1945 to 1958, when he moved to Iowa. Upon Proudfoot's premature death in 1955, Northwestern hired Edward J. Taaffe, another Chicago graduate, in 1956.

Mayer and Kohn were to prepare the chapters on urban and settlement geography for *American Geography Inventory and Prospect* in 1954, and they combined to prepare the influential *Readings in Urban Geography* in 1959, soon after Garrison's student Berry had been added to the Chicago faculty, but already radical change had occurred at the University of Washington. Drawn by Ullman's presence, a group of bright young students subsequently gravitated to Garrison and sparked geography's ill-named "quantitative revolution." Taaffe reminds us that this so-called revolution represented, in fact, a definitional and theoretical change, as well as the embracing of statistical and mathematical methods. This story and its ramifications have been told many times (e.g., Berry in chapter 5; Berry 2001; Holt-Jensen, 1988; Johnston, 1983) and need not be repeated here. After Berry's relocation to Chicago in 1958, his fellow students moved to Northwestern, Michigan and the Department of Regional Science at Pennsylvania. Another cluster arose around Harold McCarty at Iowa. Later, Garrison, Marble, Dacey and Thomas concentrated at Northwestern, and Taaffe took an Iowa graduate, King, to reshape the department at Ohio State.

The full implications of the quantitative revolution for urban geography were to be revealed at the University of Chicago. Yeates (chapter 6) notes that "the urban-oriented research themes … came to the fore in the Department of Geography at The University of Chicago during the 1960s" (referred to as the Chicago School). Wheeler (chapter 9) adds, "The introduction of spatial analysis in geography initially began slowly but gained remarkable momentum throughout the 1960s, … nowhere was this energy more charged than in the Chicago School of urban geography." He continued that it was predominantly "Berry's steadfast, unrivaled, and highly influential scholarship" that created and sustained the School, along with a long list of doctoral students who took Berry's ideas and approach

to research to other universities in North America and elsewhere. The implications were, however, even broader. King (1993, p. 544) notes that "the case for geography as a social science gained momentum throughout the 1960s" … [and] "by the mid-1970s, the professionalization of geography as a social science in the United States was well advanced" (p. 545). Geographers contributed to a variety of interdisciplinary journals, such as *Papers in Regional Science, The Journal of Regional Science, Land Economics, Environment and Planning A, The Journal of Urban Affairs, The Journal of Urban and Regional Planning, The International Regional Science Review, The American Journal of Sociology,* and *Urban Studies*, to note a few. Urban research also became prominent in general geography journals such as the *Annals of the Association of American Geographers, The Geographical Review, The Canadian Geographer, Economic Geography, The Professional Geographer,* and *The Transactions of the Institute of British Geographers*, again to name only a few. Culminating the surge of urban research, *Urban Geography* began publication in 1980, joining such new journals as *Urban Economics* (where Berry was a founding member of the editorial board), and urban geography grew to be the second largest of the more than 40 specialty groups of the Association of American Geographers (AAG), second only to Geographic Information Science. The annual meetings of the AAG quickly came to be filled with presentations on myriad topics in urban geography, as were the regional meetings and their division-sponsored publications, such as *The Southeastern Geographer*, *Yearbook of the Association of Pacific Coast Geographers*, and *The Southwestern Geographer*. As chapters 7 through 13 reveal, the 1960s and 1970s were a time of both exploration and consolidation, of personal growth, and of reinforcement of the social scientific paradigm.

The first signs of reaction came in the 1970s, following publication of *Social Justice and the City* by David Harvey (1973), amidst the turmoil of the Vietnam War. Reflecting the ethos of the antiwar radicals and his own Marxist orientation, Harvey challenged the social scientific paradigm on several grounds. First, he opposed the underlying presupposition that urban dynamics are grounded in the logic of decentralized market-based democratic processes; for him, there were different versions of space, each created by and for the benefit of the few. Second, he rejected the notion of a science of urbanism in its own right; rather, he argued, examination of the processes that concentrate wealth and power in cities are of interest because of the light that is shed on broader issues of societal and political concern, but the structure and growth of cities themselves was of little interest. Thirdly, he argued that social practice directed toward the transformation of inequities is the only legitimate source of theoretical ratification, not

some remote brand of methodology and philosophy. Only revolutionary theories, dialectically formulated, offer the prospect of creating truth. Thus, he attempted to refute the theory, empirical research methods, and the policy recommendations of social scientific urban geography.

The challenge led to uncertainty and to an unraveling of the Chicago paradigm: "If the 1960s had been a decade when progress was marked by a paradigm gained, the 1970s was one in which the central paradigm was lost and urban geography began to diverge along a variety of incommurate paths" (Berry 2002, p. 443). There was increasing "fragmentation" (chapter 14), "fragmentation, specialization, and insularity" (Gober, 2002), "competing visions" (chapter 12), and "methodological and philosophic exploration" (chapter 1). Berry (2003, 558–559) writes

> We began the 1960s with an Enlightenment epistemology: a close attention to data sources and to empirical regularities; the search for theory to explain these regularities; the translation of theory into models that illuminate the working of causal variables and provide guidelines to planning and action; and the use of practice to provide use-based information on the limitations of the models and to promote new rounds of empirical investigation and theoretical development as new questions are brought to the surface. It is this epistemology that was alleged to be sycophantic to capitalism by Harvey and his followers, dialecticians committed to Marxism as the proper foundation for a more just society to be achieved by political means. Harvey's dialectics evolved into critical social theory and provided a ready opening for deconstructionist rejection of "positivism," which in turn created an opportunity for the postmoderns, who argue that there are multiple worlds, each subject-centered and contingent, with every characterization merely the perception of those setting it down.

Lake (chapter 20) succinctly captured the essence of urban geography as it moved into the 1980s: "The gravitational pull of sweeping national and global changes, both within and outside the discipline, imposed a strong imprint on urban geography … Contextuality [became] a common theme in assessments [as did] the closely related theme of agency and structure." He continued

> No more and no less than a mirror of its time, urban geography in the 1980s evinced an antiurban angst that mimicked the broader culture: that angst was revealed in two interrelated observations. First [it] abandoned the material city in a move expressive

> of the period's prevailing antiurbanism. Second, … abandonment of the city reflected, at least in part, the racial dynamics of the times. [While] urban geographers remained busy … attention had turned elsewhere: outward to the metropolitan scale, and global. We followed "growth" to the suburbs and ignored the city that remained. Our fascinations were with high tech, silicon landscapes, edge cities, financial capital, telecommunications networks, metropolitics, festival marketplaces, the new urbanism, and global cities. Not coincidently, these fascinations addressed the few remaining vestiges of the White city or positioned the city at the metropolitan or global scales where White life now was lived. "Ghetto" became not an urban place but a teenage clothing style.

Knox (chapter 15) similarly recognizes that "the 1980s forced many urban geographers to consider afresh both the nature of their subject matter and their theoretical and methodological approaches to it."

Berry remained the most-cited geographer through the mid-1980s, at which point he was overtaken by Harvey. As the 1990s arrived new forces began to unfold; some, though, were still centered in Harvey's call for dialectics while others reflected the spread of postmodernism.

Hanson (chapter 22) recognizes the "weight of tradition" but also describes "three strands of paths of divergence that … emerged … from these traditions: research on globalization, research on gender, and a greater diversity of methodological approaches and data sources used." Barnes (chapter 23) notes how "the new cultural geography" and postmodernism, "finally cracked" urban geography into a "messier, mixed up, and contaminated" research enterprise. Dear (chapter 24), champion of the self-proclaimed "Los Angeles School" of urban geography, led the call for "a comparative urban analysis that utilizes Los Angeles not as a new urban 'paradigm,' but as one of many exemplars of contemporary urban process" (chapter 24). And Leitner and Sheppard (chapter 25) assert that it was "critical urban geography [that] came to dominate knowledge production in urban geography during the 1990s," leading to an "unbounding of the field." Meanwhile, the Chicago School paradigm has been reinvigorated by new ideas from new sources. A creature of its times, the theory of the 1960s was due for change because the models were static, not dynamic, the equilibria were partial, not general, and the processes were first-order, not second-order. New theorists are seeking to address these limitations. Forging new spatially integrated links with other social sciences, new rounds of dynamic modeling are bringing new understanding of urban growth and change.

We thus have entered the 21st century with an urban geography that is a cockpit of competing schools of thought (see Aitken, Mitchell, and Staeheli, 2003; for a British perspective, see Hall, 2003; Peach, 2003). Such diversity can be invigorating, so long as presuppositions are clearly stated, their consequences are understood, and debate is robust and healthy, centering on the clash of ideas, and the pluses and minuses on the balance sheet of alternatives. But healthy debate can be tough and confrontational. Only if we are able to avoid the all-too-frequent tendency to interpret intellectual challenge as personal attack will we be able to stay in communication. With communication, evolution will take care of the rest. The ideas that are best adapted to the needs of society and the aspirations and career opportunities of the next generations of scholars will survive to shape the urban geography of the future. We hope this volume offers future generations of urban geographers the helpful insights of those who were active in creating this history and of the personalities and forces instrumental in shaping and reshaping the discipline that will be their home.

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I
Foundations

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CHAPTER 1

Urban Geography in the United States
My Experience of the Formative Years

CHAUNCY D. HARRIS

During the period up to and through World War II, doctoral dissertations in the University of Chicago were written in the form of monographs on individual cities. Among the major themes of this period were situation of a city with respect to a productive hinterland; historical geography of original settlement and sequential development; transportational, industrial, trade, and residential activities in individual cities; land utilization patterns within a city; and tributary areas. These themes illustrate the context of the field at the time members of my generation were students. Among the contributions we in our turn made were empirical quantitative studies classifying cities, theoretical typologies of city distributions and internal patterns, field studies of individual cities, and patterns of urban distribution and growth for the United States or other countries.

With such a galaxy of stars in this symposium, I shall limit my remarks to my own experience of the formative years of urban geography in the United States up to and including 1945. First I shall discuss the context of

Urban Geography, 1990, 11, 4, pp. 403–417.

the evolving field into which a number of us entered at that time. The corpus of doctoral dissertations in urban geography at the University of Chicago, with which the graduate students in this university became more or less familiar, will illustrate the types of problems that our predecessors and contemporaries had addressed or were addressing. Next I shall turn to the contributions we ourselves were then in the process of making, using primarily myself as an example.

Context

The first doctoral dissertation in geography in the University of Chicago was in the field of urban geography: "A Geographical Interpretation of New York City" by Frederick V. Emerson (1908–1909). His work is worth examining as an indication of the sorts of questions that were asked early in the century. Though Emerson developed primarily into a physical geographer, he worked on his dissertation with J. Paul Goode, who over the years concerned himself with the regional location and transportation of Chicago (Goode, 1926). Emerson's study analyzed the position of New York City in the local hinterland with respect to population and commerce, access through the Appalachian barrier to the larger hinterland of the Great Lakes region, first through building of canals and later of railroads, the qualities of the harbor, and the trade and transportation of the city. Situation with respect to productive hinterland was the focus.

Historical geography of cities was a theme of a large number of studies over many years, especially of dissertations supervised by Harlan H. Barrows. An excellent study by A. E. Parkins on Detroit examined its sequential evolution, the development of transportation by water and by land, and the rise of manufacturing (1918). In the same tradition Mary Jean Lanier studied the development of commerce in Boston during the first three decades of that city in the early 17th century (1924). Edward N. Torbert traced the evolution of land utilization in Lebanon, New Hampshire from its earliest settlement (1931, 1935). Hubert L. Minton interpreted the evolution of the small city of Conway, Arkansas (1937, 1939). James Glasgow analyzed the stages in the evolution of the lake port of Muskegon, Michigan (1939). Carl F. Carlson mapped in great detail the historical periods of land utilization in Aurora, Illinois (1940). Edward B. Espenshade, Jr., tracked the stages in the evolution of the urban complex of Davenport, Rock Island, and Moline with regard to the factors involved in this development on the Upper Rapids of the Mississippi River (1944). Building on these studies, many students sought to determine the factors in the original location and subsequent rise of cities, e.g., Salt Lake City (Harris, 1940, pp. 93–125; 1941).

Helen M. Strong in her pioneering study of Cleveland advanced the field by closer attention to the contemporary functions of the city in commerce and manufacturing and to the location of distinct districts within the city, all in relation to transportation and the port (1921, 1925). Transport roles of cities were investigated in detail also by Clarence F. Jones for the port of Montreal (1923, 1924, 1925a, 1925b), Richard Hartshorne for the lake traffic of Chicago (1924), and Harold M. Mayer for the railroads of Chicago (1943). Traffic by all forms of transportation was treated by Harris for Salt Lake City (1940, pp. 47–56, pp. 61–92), by Robert L. Wrigley for Pocatello, Idaho (1942, pp. 95–118; 1943), and by Edward L. Ullman for Mobile, Alabama (1943, pp. 108–161). Both Mayer and Ullman later made many contributions to transportation geography. Ullman extended the study of traffic flow to include interstate movements nationwide (1957).

Specific activities in individual cities were the subject of much doctoral research at Chicago: the iron and steel industry of the Calumet district of Chicago by John B. Appleton (1927); mining and manufacturing in Scranton, Pennsylvania by Clifford M. Zierer (1925, 1927); mining in Negaunee, Michigan, by J. Russell Whitaker (1930, 1931); business and manufacturing in St. Louis by Lewis F. Thomas (1927); manufacturing in Joliet, Illinois, by William T. Chambers (1926); in Hamilton, Ontario, by Harold B. Ward (1934); and in Lowell, Massachusetts, by Margaret T. Parker (1940). Outlying business centers of Chicago were investigated by Malcolm J. Proudfoot (1936, 1937, 1938). Robert C. Klove was the first at Chicago to study in detail the residential land-use patterns in a metropolitan suburb: the Park Ridge-Barrington area in the northwestern part of the Chicago metropolitan area (1942).

Mapping and description of land utilization or of functional districts within a city found expression in dissertations by Willis H. Miller on Pomona, California (1933, 1935), Rayburn W. Johnson on Memphis (1936a, 1936b), William F. Christians on Denver (1938, 1944), and James R. Beck on Dover and New Philadelphia, Ohio (1942). Johnson's study of Memphis in one sense was the most successful; on its basis Johnson concluded that future industrial expansion in Memphis would have to be located on land then vacant and not highly valued. He bought up blocks of such land, which he later sold at sufficient profit for him, on retirement, to donate to Memphis State University a sum of money equal to the total salary he had been paid over his many years as a faculty member at that institution. This contribution was used to construct a building named for him in which the Department of Geography has been housed.

Attention was devoted also the service areas, or tributary areas, or hinterlands, of cities, especially by Leslie M. Davis for the small city of Elwood,

Indiana (1935, 1937), by Harris for the inland regional center of Salt Lake City (1940, pp. 23–30), and by Ullman for the port of Mobile, Alabama (1943, pp. 57–77).

Many, but not all, of these dissertations in urban geography were supervised by Charles C. Colby. In his course in urban geography he stimulated students with new ideas in the study of cities. He also wrote a seminal paper, "Centrifugal and Centripetal Forces in Urban Geography" (1933), which was, however, his only published paper in this field.

I arrived at the University of Chicago as a graduate student in the summer of 1933. At the university I met Harold M. Mayer and Edward L. Ullman, both intensely interested in urban geography. In retrospect I do not believe that Colby was responsible for Ullman, Mayer, or Harris going into urban geography. We developed interest in this field on our own. But Colby did arouse our curiosity, shape our interests, and improve our writing. He became my mentor (Harris, 1966). The simultaneous presence of three youngsters all deeply curious about urban phenomena heralded a new period in which an initial critical mass was reached. Thereafter dissertations in urban geography were not isolated individual efforts. Lively student discussions ranged over the state of the field, appropriate approaches to the subject, the factors in the rise and distribution of cities, functions performed by cities, and many other topics. In classifications of cities we considered the important element to be the commercial, transportation, or industrial functions which cities performed, not the physical feature of location on coastlines or river systems, which had formed the basis of some previous classifications. Our minds should focus on the human, especially economic, factors—not on the physical sites. Cities, we noted, arose where there were urban functions to be fulfilled. Man-made railroads loomed as large a transportation element as natural river systems.

As students at this time we, of course, scoured the literature for ideas, concepts, and models. I was particularly intrigued by some of the early papers of Richard Hartshorne on location factors and industry as they affected cities. That was before he was seduced into the detailed study of the history of geographical thought, which resulted in his monograph on the nature of geography. I was also stimulated by the seminal ideas of Mark Jefferson (Jefferson, 1909, 1931, 1933, and 1939). Jefferson later encouraged me greatly in correspondence on my early papers. A number of ideas came from the work of Robert E. Dickinson on zones of influence of cities (Dickinson, 1930, 1934a, 1934b), later developed into his book (Dickinson, 1947). The writings of William J. Reilly on service areas in retail trade were also provocative (Reilly, 1929, 1931). But what really excited me were the writings of Robert M. Haig and Roswell C. McCrea,

two economists, who brought order into patterns of location of activities within the urban area (Haig, 1926; Haig and McCrea, 1927), and of Richard M. Hurd, who examined location of urban functions in relation to real-estate values (Hurd, 1911). It should be remembered that at the time I became a graduate student there were no general treatments in English on the field of urban geography. During the later part of my student days Eugene Van Cleef examined trade centers (Van Cleef, 1937), Lewis F. Thomas joined with the sociologist Stuart A. Queen to produce a joint treatment, *The City* (Queen and Thomas, 1939), and the U.S. National Resources Committee produced a report, *Our Cities*: *Their Role in National Economy* (1937).

The first Presidential Address to the Association of American Geographers discussing urban geography was "Environment, Village, and City: Genetic Approaches to Urban Geography" by Griffith Taylor (1942), but it was not in the mainstream of development of the field, though Taylor had been a faculty member of the University of Chicago for a few years in the early 1930s. It was not followed until several decades later by another presidential consideration of the field. Taylor's ideas were not based on work by others in the field of urban geography, nor were his concepts widely used in later work in the field. He was *sui generis*, a self-made original thinker.

After World War II, Harold M. Mayer, Brian J. L. Berry, Norton S. Ginsburg, and I all taught at the University of Chicago and engaged in research in various aspects of urban geography, but that is another, later, story, which should be told by others.

My Contributions 1940–1945

Since the editors have requested specifically that contributors to this symposium emphasize their personal involvement and role in the development of the field, I cast aside normal reticence and describe how I came to write some of my early papers in urban geography.

Salt Lake City: *A Regional Capital* (1940), my doctoral dissertation, arose out of an interest that began during the summer of 1922, when I was eight years old. My father had a copy of the *World Almanac*, which had population figures for cities in the United States. I became curious about why some cities were larger than others and what were the activities that supported the population in larger cities. Specifically, in 1920 Utah County, Utah, consisted of a county seat—my home town of Provo—of about 10,000 people and five other independent cities, three to ten miles apart, each with a population of about 3,000. I wondered what determined their relative size. And why was Salt Lake City in the next county more

than ten times as large as Provo, and so on. At that time I decided to become a geographer. Many years later in my doctoral dissertation I returned to this question and used a forerunner of the location quotient to note what proportion of the regional employment in various activities was concentrated in the regional capital and therefore which activities might be presumed to be part of its basic support (Harris, 1940, pp. 3–12). Ullman was interested in similar concepts and, much later, with the help of Michael F. Dacey and Harold Brodsky, developed the minimum requirements approach to the study of basic and nonbasic activities in cities (Ullman, Dacey, and Brodsky, 1971).

When population figures for cities in the United States became available from the 1940 census, I decided to write a short article on the growth of the larger cities during the previous decade. It seemed obvious that the growth would reflect not only regional and other factors but also differences in the functions the cities performed. In the absence of a classification of cities of the United States, I decided to construct one. Soon I changed my focus from growth of cities to their classification. The papers on growth of the larger cities and the metropolitan districts became only very minor publications of ephemeral and limited interest (Harris, 1942a, 1942b). But the paper on city classification became a major effort and had some impact (Harris, 1943). The lesson from this, I suppose, is that one should be prepared to follow one's intellectual interests and the new vistas that open up in the course of research and not be too bound by the initial goal.

It had long been recognized that cities differ in functions. A few examples of various types had often been cited. But no classification existed for all the cities of the United States. The use of comparable quantitative data on major activities as measured by occupational or employment structure seemed to me to offer a possible basis. The data at that time were relatively poor. The 1930 Census of Population did provide occupational data for cities with more than 100,000 inhabitants and also for cities with populations of 25,000 to 100,000, but only separately for males and females. I simply added figures for males and females in my head, wrote down the total, and then calculated on a two-dollar slide rule the percentage of total gainfully occupied persons in each category. But the occupational categories of that census were ill-suited to such a classification, since they were by personal occupation instead of by useful industry groups. Thus the category of manufacturing and mechanical occupations, for example, was blurred for my purpose by the inclusion of carpenters, painters, electricians, mechanics, and other local service groups with workers in industrial establishments that might contribute to the basic support of the city. Employment in retail and wholesale trade was available in the Census of

Business for 1935 in separate volumes for retail and wholesale distribution. Employment in manufacturing was available in the Biennial Census of Manufacturing 1935 in mimeographed press releases for each state. Fortunately these employment figures were handily assembled by cities in B. P. Hayes and G. R. Smith, *Consumer Market Data Handbook* (1939). Thus occupational data were available by place of residence for larger cities for an earlier date, and employment data were available by place of work for retail and wholesale trade and manufacturing for a later date, for cities down to 10,000 population. Some other types of data could be ferreted out, such as student enrollments in colleges and universities; these helped define university towns.

To establish the defining parameters of each type, I simply arrayed the percentages in each occupational or employment group by city from the highest to the lowest, noting the range, the median, and whether the data were continuous over a normal distribution, were skewed, or were clustered in significant ways. Also, in an attempt to distinguish basic from nonbasic, the minimum, maximum, and median figures in this distribution were compared with the average urban figures for the country as a whole, for regions, and for states. Obviously many of those gainfully occupied in manufacturing and mechanical occupations were serving local needs, and the percentage of persons engaged in these occupations had to be relatively high to distinguish manufacturing as the basic support of the city. On the other hand wholesale trade contained relatively few engaged in local service activities, and the percentage needed to distinguish a wholesale center could be much lower.

With the advantage of hindsight I regret not having discussed the methodology more explicitly in the original article, but at the time interest seemed to be more on the results than on the methodology.

This work resulted in my first paper at a meeting of the Association of American Geographers, presented in New York City in December 1941 and published as "A Functional Classification of Cities in the United States" (Harris, 1943). At the meeting this paper was generously received and commented on by J. Russell Whitaker, Richard Hartshorne, and Meredith F. Burrill, all later presidents of the AAG and all remarkably long-lived. Indeed Hartshorne and Burrill were both present 47 years later in the session "Origins and Evolution of Urban Geography in the United States during Its Formative Years" at the annual meeting of the AAG in Baltimore, Maryland, March 21, 1989, at which a draft of this paper was presented. From this I come to the irresistible conclusion that favorable comment on my early papers promoted longevity!

In the paper on classification of cities I attempted to treat whole metropolitan communities as units, as well as individual smaller cities. Since at that time data generally came by political cities or by counties, I was forced to combine data from many central cities and suburbs in each metropolitan area. The data for the noncentral cities formed the basis of another study, "Suburbs," published as the lead article in the *American Journal of Sociology* (Harris, 1944), in which I attempted to distinguish clearly between residential suburbs (dormitory cities) and industrial suburbs; in the former, commuting was then generally to the central city; in the latter, commuting was out from the central city or from other suburban areas to the industrial suburb. Perhaps because this article was not published in a geographical periodical it has received little attention by geographers.

The practical utility of my method of city and suburb classifications was soon recognized by sociologists and political scientists as well as by geographers. Louis Wirth, the sociologist, and Herbert Simon, the political scientists, were involved in advising on its adaptation by Grace M. Kneedler (later with the married name of Grace M. Ohlson) for the *Municipal Year Book* as "Economic Classification of Cities" (Kneedler, 1945), published annually from 1945 through 1950. The political scientist Victor Jones then prepared a later modification, "Economic Classification of Cities and Metropolitan Areas" (Jones, 1953), published annually through 1955. The sociologist Albert J. Reiss, Jr., prepared "A Functional Specialization of Cities (Reiss, 1957). Victor Jones and Andrew Collver made later revisions (1959). Jones with the geographer Richard L. Forstall prepared "Economic and Social Classification of Metropolitan Areas" (1963) and Jones, Forstall, and Collver, "Economic and Social Characteristics of Urban Places" (1963). Forstall presented a "Classification of Places over 10,000: Functional Classification of Cities 1960/63" (1967) and a still later and more advanced "A New Social and Economic Group of Cities" (1970). These reflected the evolving adaptations to the needs of the users of the *Municipal Year Book*, rapidly improving data bases, evolving techniques, and new conceptual tools. To discuss this evolution fully would require a separate article. Since the time of publication of these two original articles, many new possibilities have enriched the study of functional classification of cities and suburbs. In the United States the data base has improved enormously. The 1940 census made available occupational data by useful industry groups. Employment data have been extended to more groups of activities. The availability of data for many variables by cities, counties, and metropolitan districts has been extended appreciably by successive editions of the *County and City Data Book* (1949–1988) and the *State and Metropolitan Area Data Book* (1982–1986), both compiled by the United

States Bureau of the Census. The data are now available in machine-readable form. The quantitative revolution has developed many new statistical tools for analysis. New techniques facilitate combining large numbers of economic and social variables, which are becoming available in increasing numbers. Many social indicators can now be included as well as economic ones in analysis of the human ecology of cities, suburbs, and even neighborhoods. Instead of the old two-dollar slide rule the geographer can now utilize a new $2,000 personal computer, which calculates with lightning speed and makes possible complex analysis of many variables and interrelationships. The basic activities of cities in advanced societies have been transformed, with the decline of secondary activities such as manufacturing and with the remarkable growth of the tertiary sector, the service functions, and even of a quaternary sector.

Among the articles or books that advanced the methodology of city classification in the United States, a few major works may be mentioned. J. Fraser Hart applied the method to cities of the South (1955). Howard Nelson made more explicit statistical criteria for the recognition of types of American cities (1955). He recorded variations of each city from the mean for all cities in nine classes of occupations (industrial classification) from the 1950 United States Census of Population and calculated standard deviations; cities with more than one standard deviation were recognized as specialized cities in his classification. The Swedish geographer, Gunnar Alexandersson (1956), working at the University of Nebraska, and the American sociologists, Otis Dudley Duncan and Albert J. Reiss (1956), both devoted entire monographs to the classification of American cities. Robert H. T. Smith (1965a, 1965b), the Australian geographer, then working at the University of Wisconsin, reviewed the field and applied the methodology. Brian J. L. Berry assembled, edited, and contributed to a volume, *City Classification Handbook*: *Methods and Applications* (1972). General reviews of city classification in the context of urban geography in general have been provided by Raymond E. Murphy (1966, 1974), Brian J. L. Berry and Frank E. Horton (1970), Maurice H. Yeates and Barry J. Garner (1971, 1980), Dean S. Rugg (1972, 1978), and others (e.g., Wheeler, 1986).

In 1945 The American Academy of Political and Social Science published a special volume on the city in its *Annals*. Harold M. Mayer was involved in the invitation to me to prepare an article on the geography of the city. I asked for permission to have Edward L. Ullman as coauthor. Together we wrote a typology of spatial distribution of cities and of internal structures of cities entitled "The Nature of Cities" (Harris and Ullman, 1945). Edward L. Ullman was fascinated by patterns of regular distribution of central-place settlements and was among those early introducing

into American literature the ideas of Walter Christaller (Ullman, 1941), whose contributions were not fully recognized, however, until the rise of a group of model-building geographers a couple of decades later (Berry and Harris, 1968, 1970). I later met Christaller in 1957 in Frankfurt-am-Main, Germany, where he had traveled to hear a presentation in German of my paper on the market as a factor in the location of industry (Harris, 1954), in which he was interested. We also both participated in a seminar in urban geography in Lund, Sweden, in 1960, at which time I snapped a photograph of Christaller and Ullman together (Photo 1). By myself I probably would have written a more traditional article, but Ullman suggested the idea of presenting a more theoretical generalization. With respect to the patterns of distribution of cities, Ullman certainly contributed the central-place concept and the alignment of cities on transport lines, while I brought in the clustered cities of mining and industrial districts. Ullman was familiar with the work of Ernest Burgess in sociology on concentric zones in cities and of Homer Hoyt, the real-estate economist, in describing sectors of residential development. The multiple-nuclei pattern was suggested by me on the basis of observation that not all activities of a city cluster around a single center, but that different activities have different points of attachment. Specifically I had observed in London, England, the focus of commercial activities in the city and of governmental activities in Westminster, the separate centers joined by the Strand, which for centuries ran through open space between them. I had also observed in German cities the separate historical centers of the church, often in the form of a cathedral, of commerce (in the market), and of government in the castle or city hall. In Salt Lake City I had noted that the retail-commercial center was attached to Main Street, focus of automobile, streetcar, and bus transport by road and pedestrian concentration on the sidewalk, whereas the important wholesale and industrial district was attached to the railroad tracks and to truck transport. From these simple observations arose the concept of the multiple-nuclei pattern, later developed much further by others and applied in new ways in social area analysis or factorial ecology (literature in Larkin and Peters, 1983, pp. 168–170). Forty-five years after publication I am still receiving frequent requests for permission to reproduce from this article the diagram of generalizations of the internal structure of cities, particularly for textbooks in geography or in introductions to sociology. It is important to bear in mind that this paper was a typological scheme, not an empirical research finding. Since in different ways Ullman, Mayer, and I were all involved in this paper, I would like to note that in my judgment Edward L. Ullman had the most original mind of his generation of urban geographers (Eyre, 1977; Harris,

1977; Ullman, 1980) and that Harold M. Mayer has had the most comprehensive command of the entire field.

Another early paper of mine was "Ipswich, England" (Harris, 1942c). Its genesis was quite simple. At Oxford all undergraduates in geography had to prepare a regional paper. I chose an area in East Anglia, since it contained Ipswich, which I had observed was a city with interesting relationships between its hinterland and its commercial and industrial activities — relationships which had shifted over time. It represents a study based primarily on field observation and mapping on foot or bicycle.

While in the Department of State, I turned my attention toward the Soviet Union, which posed such a challenge both in obtaining information and in presenting an objective treatment. Scanty data from the 1939 census (only population data for cities with more than 50,000 inhabitants) were combined with extremely crude approximations of economic structure from atlas maps (showing by divisions of a circle major industries of principal cities) into an analysis of both regional and functional aspects of urban growth and a crude functional classification of cities of the Soviet Union (Harris, 1945a). The paper on Soviet cities did, however, attract favorable notice from the Soviet reviewer O. A. Konstantinov of Leningrad, a leading early student of Soviet urban geography. Happily, many years later we met personally and exchanged ideas. This was the first of a series of papers devoted to the urban geography of the USSR, culminating much later in a monograph *Cities of the Soviet Union* (Harris, 1970).

I was also fascinated by the ethnic complexity of cities in the western and southern fringes of the Soviet Union in non-Russian areas into which the Russian Empire and later the Soviet Union had penetrated over the centuries. These cities serve as points of administrative and economic organization, cultural contact, and some degree of assimilation (Harris, 1945b). But the data in the 1926 Census of the USSR have not been superseded by later or better comparable data for the country as a whole. In spite of enormous changes and the current interest in the subject, no more recent studies have made advances over this paper of 45 years ago.

These early papers were researched and written without any external financial support. This was long before the creation of such welcome resources as the National Science Foundation and similar funding agencies.

In 1946 I became Secretary of the Association of American Geographers; that was in the days before the establishment of a Central Office. This activity was followed by a series of administrative responsibilities in geography, the social sciences, international studies, Soviet studies, and especially in the University of Chicago, which reduced the portion of my time which could be devoted to research. Also my attention was diverted to

Edward Ullman (left) and Walter Christaller (right). Photo by Chauncy D. Harris.

other fields of geography, particularly to regional studies in Germany and in the Soviet Union and to the bibliography of geographical sources. But I still look back with nostalgia to this early period of intense activity in the field of urban geography. I am delighted that some of the problems to which I then devoted attention have been greatly advanced by the creative work of later students of the city.

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