

Industrial Geography in the United States, the past half century

Howard A. Stafford

Department of Geography
University of Cincinnati
Cincinnati, OH 45221-0131 USA
Howard.Stafford@uc.edu

Some immediate reactions when asked to write a review of the past half century of industrial geography were about how well would my memory serve me, how wide a net to cast, and if 50 years is an acceptable time frame. I began by outlining what I remember of my personal experiences in the field. Then I wrote to many industrial geographers, some of my acquaintance and some I knew only by their contributions to the literature or membership in the economic geography group of the Association of American Geographers, and asked for their perspectives and remembrances of the course of industrial geography over the past few decades. Several answered, and their responses have helped shape the narrative that follows. I next consulted a variety of sources, including reviews others have written, and textbooks that could reflect both the changes and the enduring themes.

The half-century time frame seemed comfortable. On a personal level, my first exposure to industrial geography was almost that long ago, when I started graduate school at Iowa in 1955, and had the good fortune to work under H. H. McCarty, a leader in economic geography and in the spatial economic theory, quantitative tech-

niques “revolution” of the period. The 1950s and 1960s were a period of exciting change in industrial geography. It also was a time of much contention. I remember going to my first Association of American Geographers West Lakes Division meeting at the University of Illinois. A leading industrial geographer, Joseph Russell, characterized me as “one of those Iowa numbers boys.” It now seems to me that we are currently in another time of paradigm conflict, with those who focus on the sociology and consumption of production and favor different styles of “theorizing” even while there is a revival of interest in analytical, regional science type research. From my perch it looks a lot like what is old is new again.

As by now obvious, this essay is seriously biased. The net is not cast very far. It is very highly focused on what has happened in industrial geography in North America, and especially in the United States. There is a sprinkling of reference to the important contributions from the United Kingdom and a soupcon of nods to other parts of the world, but it by no means reflects a very broad purview of industrial geography around the world. Also, there is no attempt to provide a literature review. The references cited are merely to

support or illustrate my points. Many more worthy contributions are neglected than cited, so if your favorites are not here attribute it to my poor memory, or the constraints on the length of this piece, or my just running out of time. However, the references in the sources here noted can lead to the much broader industrial geography literature. The focus is on a broad outline; there is insufficient space to provide detail on content, but it is hoped that placing the themes in context will facilitate the reader's subsequent review and evaluation.

INDUSTRIAL GEOGRAPHY, HOW DO WE SEE IT?

The scope of the essay also is restricted in another sense. It is mainly focused on production and production systems and especially on manufacturing. The question of a definition of "industrial geography" was raised by several of the respondents to my invitation to provide their perspectives. J. W. Harrington feels that "industrial geography is now the study of production and production systems across all sectors (whereas) economic geography includes consumption, living standards, and perhaps more of an emphasis on labor (re)production than industrial geography" (Harrington, 2002). H. D. Watts sees the "central question of industrial geography as to why industrial activities grow/decline in particular places. It seems to me that, in the most recent past, this question gets lost in the detailed examination of processes involved, and understanding the process rather than the outcome has become the central question" (Watts, 2003).

Walker sees traditional industrial geography as focused on the making of goods, and an expanded view of the geography of production also includes the production of services. One way he looks at the geography of industries is through the lens of spatial divisions of labor, which also can be sliced by occupation. Another way to view the geography of production is by looking at the sites of plants and firms, and their corporate geography (Walker, 2003). These ideas influenced the organization of the essay.

A PERSONAL PERSPECTIVE

I began by outlining the materials along a rough time-line, by decades. However, as I organized ideas and perceptions, mine and those of others, it became apparent that significant themes occurred time and again. I decided that in addition to noting the new, the persistence of some oscillation around other focal points is significant, and can be better appreciated by organizing around the themes themselves. The research themes are (1) spatial patterns of industries and industrial sectors, (2) geographies of companies, (3) industrial places (spaces), clusters, districts, and regions, (4) process via location theory, old and new, (5) process via company decision-making, (6) process via social context, and the consumption of production. To these are added two other sections. One deals with observations about the communities of scholars which have shaped the field over the past decades. Another looks at applied industrial geography.

A persistent theme has been examinations of the *spatial distributions of industries (industrial sectors)*. The large and visible and “heavy” industries have been especially popular, such as oil, steel and automobiles, but other industries have received attention, including Hoover’s classic study of the shoe and leather industry, and even paperboard containers (e.g., Hoover, 1937, Stafford, 1960, Estall & Buchanan, 1961, Rubenstein, 1992, Lallajainen and Stafford, 1995). Dicken, at the global scale examines two old favorites, textiles & clothing and the automobile industry and adds two newer sectors, electronics and services (Dicken, 1992). The technology sector appears in several other recent studies, but, in fact has been examined for many years (Malecki, 1991, and see Harris, 1954).

Industries are composed of *companies*. Companies make location decisions to open and close facilities of different production capabilities. These create the “geography of the firm.” In the 1960’s there was a concerted move to examine how companies organize space. McNee’s analyses of global oil companies were among the early research on corporate spaces (McNee, 1958, 1960). Research on corporate structures remains strong with examinations of such things as branch plants in relation to headquarters, and company responses to the product cycle, and the influences of corporate culture on the static and dynamic geography of the firm (Norton and Rees, 1979, Massey, 1984, Schoenberger, 2000) Complementing the systematic approaches by sector and by company is

the regional perspective. Substantial spatial concentrations (agglomerations) of manufacturing capacity are variously called, depending on geographic scale, *clusters, industrial districts, or regions*. Industrial *regions* have received much attention, especially large areas of heavy concentration such as the American Manufacturing Belt, the British Midlands, and the German Ruhr. Changes of geographic scale produce the now popular work on *industrial districts* and *industrial clusters*. Of course, *industrial districts* research has been around for many years, but it is perhaps even stronger now than ever, especially since industrial districts (and *clusters*), conceptually at least, fit into regional economic development planning. Early industrial districts examples include studies of jewelry and garment districts. The genre was given a big push by Porter when he argued that national and regional industrial districts convey and are a consequence of the special advantages of specialized manufacturers being close to others in their supply chain (Porter, 1990). The essential arguments also are applied at more local scales. The arguments for clustering in districts revolve around several factors, most notably “Marshallian” localization and urbanization economies of scale, the relative immobility of labor, and face-to-face interactions among creative people in creative companies (Amin, 2003, Markusen, 1996, Saxenian, 1994, Florida, 2000).

Logical and deductive reasoning, especially in relation to “basic” economic factors, may be broadly thought of as *location theory*. Historically, there are several phases in American geography.

Harris neatly illustrates work before 50 years ago: "In 1927 Richard Hartshorne proposed a quantitative method of appraising the relative importance of raw materials, fuel, markets, and labor, and emphasized the key role of relative location or locus. His ideas were similar to those of Weber. Recently George T. Renner noted the effect of agglomerative industries, which he calls conjunctive or disjunctive symbioses, depending on whether or not there is a functional relationship among the areally associated industries. Charles C. Colby recognized centrifugal and centripetal forces affecting industrial location within cities" (Harris, 1954, 299; Hartshorne, 1927; Weber, 1929; Renner, 1947; Colby, 1933). Harris continues by noting the contributions of economists such as Edgar M. Hoover, and concludes with the observation that "much needs to be done to bridge the gap between economic theory and the actual observed distributions" (Harris, 1954, 300; Hoover, 1948).

As Harris was writing, a new and powerful influence on industrial geography was emerging from the writings of regional economists such as Isard and Greenhut (Isard, 1956, Greenhut, 1956). Industrial complex analysis was a major contribution (Isard, Schooler and Vietorisz, 1959). The difficulties of developing microeconomic mathematical models when dealing with imperfect competition resulting from spatial distributions remained. However, a variety of alternative techniques were brought to bear to finesse the problem, including input-output, linear programming and potential modeling, and explicit consideration of the effects of

uncertainty (Isard, 1960, Webber, 1972). Geographers were taking note and contributing, and out of this came the Regional Science Association.

Since then mainstream economics has made progress in dealing with imperfect competition and this has spawned a new surge of formal spatial modeling that tries to derive spatial patterns from "first principles." This is not "pure" (to the neo-classical economist) because it must rely on "tricks" (e.g., game theory), but it is sufficiently well developed to be known by some as a "new economic geography" and have text books written (Fujita, Krugman and Venables, 1999, Krugman, 2000, Fujita and Thisse, 2002). There is still the gap between location theory and actual distributions, but the real values of formal models are not in their reflection of the real world but rather in three other dimensions: like all good deductive reasoning, things hidden are revealed; new hypotheses or lines of inquiry are suggested; and arguments fashioned from other evidence are buttressed by model confirmation. Spatial analytic industrial geographers are not missing the potentials these contributions offer (Hanick, 1999).

As noted above, formal "location theory" is inadequate to totally explain real world locations of manufacturing, for several reasons. It cannot deal adequately with spatial disequilibria and cannot incorporate a sufficient variety factors. Furthermore, the corporate executives that make the location decisions that add up to the geography of the firm, which collectively produce the spatial distributions of sectors and industrial districts, are largely ignorant

of, or do not find formal location theory useful. An alternative approach has been to focus on the *location decision-making* processes of actual corporate executives. I characterized this approach as the “geography of manufacturers,” as distinct from “manufacturing” (Stafford, 1972) and it also is sometimes known as a *behavioral approach*. It relies on in-depth interviews with corporate locators (McNee, 1958; Rees, 1974; Stafford, 1974). Several books focused on the location decision-making process appeared in the 1980’s (Townroe, 1971, Stafford, 1980, Schmenner, 1982). This approach still remains strong. It ranges from asking about the opening or closing of a specific plant to considerations of the working of the local network and of the influence of corporate culture on the structure of the firm (Stafford and Watts, 1990, Schoenberger, 2003).

There is another “new economic geography” which is “located theoretically on the borderlands between geography, economics (typically political economy), cultural studies, and various kinds of sociology” (Barnes, 2001, 559). There appears to be a link back to the political economic geography and Marxist approaches that were a consequence of dissatisfactions with “regional science” research, but the canvas of inquiry is broader (Sheppard and Barnes, 1990). This version of a “new economic geography,” a.k.a. the “cultural turn,” means different things to different people. For some it is a move of focus of interest from production to consumption (Watts, 2003). For others it is a focus on labor, and flexible production, and their interplay within industrial spaces (e.g.,

Scott, 1988). For others it is a shift from “geographies of labor” to “labor geographies,” with the argument that the reason firms exist is to organize labor. Labor market segmentation and gender relations are prominent topics (Martin, 2000). For others it is a shift in ways for theorizing, from “epistemological” to “hermeneutic.” Barnes contends that “epistemological” theorizing characterized the period beginning in the 1950s, while “hermeneutic” theorizing characterizes the “cultural turn” or the “new economic geography.” By epistemological theorizing is meant establishing unambiguous relationships that mirror an independent, real world. Hermeneutic theorizing recognizes that no theoretical vocabulary is perfect and there is constant search for theoretical accounts (Barnes, 2001).

Regarding the “cultural turn” and industrial geography, two things are clear. One is that topics that previously received little attention are now front burner. The second is that industrial geographers of different stripes react very differently to the heightened concern for the “cultural” dimensions. Some think it goes not far enough, where the questions (being asked are) very small, missing big issues like “the mechanics and the politics of international linkages and the relations between people that are embedded in poverty, while the new relations between economic/industrial geography and cultural geography have taken us in exactly the opposite direction to studies of culture in the city of London, to the manners of business people, and such issues, none of which seem to be of a serious kind” (Webber, 2002). Others

worry about loss of important knowledge within industrial geography, for example the literature on branch plant location decisions because such research is now “old fashioned” (Watts, 2003). Another perspective is that the “old industrial geography which focused on the economics of location is more interesting than the new industrial geography that focuses on the sociology of wealth and income” and there are far better employment prospects for students trained as objective analysts (Gibson, 2002). An opinion in a recent review is that bringing the social and cultural into industrial geography is “not necessary a bad thing” and it is good to more pluralistic and less narrowly focused on the economic, but industrial should not lose sight of the economic while “culturalizing” (Yeung, 2001).

At one time the *practical applications* of industrial geography were more apparent than now. Joseph Russell did pioneering work analyzing Ford Motor Company sales. He also recruited Howard Roepke to the University of Illinois, who in turn concentrated on community industrial development, and was very active with the Industrial Research Development Council. Community development also was the theme of Moriarty’s book (Moriarty, 1980). Henry Hunker worked extensively with Chambers of Commerce, and with Alfred Wright authored a practical volume on the factors of industrial location (I leaned on that book, and Roepke’s advice when preparing my own “guidebook” for manufacturers (Hunker and Wright, 1963; Hunker, 1974; Stafford, 1980). There still are geographers in

manufacturing corporations and utilities making or assisting in siting decisions, but they are not as visible as the applied geographers in retailing. With the exceptions of a few people like James Rubenstein who now consults with Ford, and the ongoing activities like those at the University of Arizona Economic Development Research Program, the practical applications of industrial geography are hard to find. This is a missed opportunity (as evidenced by the popularity of a book by a business college professor on making location decisions (Schmenner, 1982)).

Progress in a discipline is facilitated by an active *community of scholars*. Notable in industrial geography have been the industrial geography group within the Association of American Geographers (AAG), and the comparable groups in the Institute of British Geographers (IBG), and International Geographic Union (IGU). The first specialty group within the AAG was industrial geography. It grew out of the desire of several scholars to have time at national meetings for extended discussions on prearranged topics, with invited presenters. This format was not then available at the AAG, so the industrial geographers met in the convention city the day before the formal beginning of the meetings. For many of us, the pre-convention sessions were the best part of going to the AAG annual convention. Obviously the idea had merit and the current forty-nine specialty groups of the AAG are a legacy. The IBG sessions always were both stimulating and fun, and the specialty group retains its vigor with several leading industrial geographers active.

AAG and IBG links also play out on the world scene. The late Ian Hamilton is to be especially remembered for his leadership and just plain hard work in the international arena with the Industrial Commission of the IGU in the 1970s and 1980s. The IGU associations helped forge international perspectives, and they remain critical.

Textbook and Review Reflections

After organizing the above, I wondered how well my personal recollections fit with those of others. I started by looking at the record as revealed in books. Textbooks reflect, with some delay, the focal points of a field. I pulled five books off my shelf that roughly span the past half century, to be reminded of how things have changed, and how they have remained the same. I did the same with recent reviews of industrial/manufacturing geography. The topics covered reveal something of the evolution of the field.

The chapters in Miller's 1962 book are Localization of Manufacturing, Location of World Manufacturing, Anglo-America, Europe, Soviet Union, Far East, The Southern Continents, Iron and Steel Industry, Aluminum Industry, Machine Tool Industry, Motor Vehicle Industry, Merchant Shipbuilding Industry, Agricultural Machinery Industry, Petroleum Refining Industry, Portland Cement Industry, Cotton Textile Industry, and Perspective.

A few years later, Smith (1971, 1981) had a very different agenda as he examined *The Plant Location in Context*, *The Location Factors*, *Approaches to Theory: Spatial Economic Analysis*, *Approaches to Theory: Critique and Re-*

form, *The Variable-Cost Model, Relaxing Some Assumptions*, *Introducing Demand*, *Introducing the Time Dimension*, *Operational Models*, *Elements of Empirical Analysis*, *More Complete Analyses*, *The Impact of Industrial Activity*, *The Spatial Strategy of Industrial Development*, and *Case Studies of Industrial Development Planning*.

The parts and chapters in Watts (1987) are *The Geography of Industrial Change*, Part I: Frameworks (International and Historical), Part II: Firms (The Segmented Economy, The Location Decision), Part III: The Context of Change (Products and Processes, Labour Costs, Capital and Land costs, The Supply and Market Context, the Political Context), Part IV: The Components of Change (New Firms, Movement and Acquisition, In Situ Change: Employment Growth, Employment Decline and Plant Closure), Part V: Policies and Research Priorities (Intervention, Reflections and Directions), and Appendices on how to describe the Geography of Industrial Change and on the Potential Transport Cost and Market Potential models.

The most recent of the four is Hayter's 1997 text. His parts and chapters are Part I: The Problem of Industrial Transformation (Industrial Geography, Manufacturing Change in Historical Perspective, The Geography of Manufacturing), Part II: The Location Factors (Location Conditions and Location factors, Factory Location as Cost-Minimizing Exercise, The Location of Factories as a Decision-Making Process, The Location of Factories as a Strategic Process), Part III: The Manufac-

turing Firm and Its Geography (The Size Distribution of Firms: Geographical Perspectives, Formation and Function of New (and Small) Firms, Medium-Sized Firms, Big Firms Locally, The Growth of Multinational Firms, Corporate Restructuring and Employment Flexibility), Part IV: Production Systems and Local Development (Production Systems and Industrial Districts, Core-Firms-Dominated Production Systems and the Japanese Auto Industry, Production Systems in Home and Host Economies, De-Industrialized Regions: Restructured and Rejuvenating?, and Industrial Transformation and Jobs: Contemporary Dilemmas.

In 1954 nineteen geographers contributed to a short chapter on manufacturing in American Geography Inventory and Prospect (Harris, 1954). After noting that although manufacturing takes relatively little space it is economically important, the discussion proceeds to characterize research on the areal distribution of manufacturing and changes in distributions. The next section is on the availability of statistical materials that locate and measure manufacturing. This is followed by review of work on location theory and location types. Then there are sections on studies of specific industries, studies of specific areas, and on explanation and prediction of industrialization. The chapter ends with consideration of problems needing study, including the significance of industries to regional development and the impact of new technology.

Thirty-three years later eight industrial geographers contributed a chapter to

Geography in America (Beyers, et. al., 1989). Their headings are Locational Shifts in Manufacturing, Research on Producer Services, High Technology and Industrial Innovation, International Trade and Foreign Investment, Labor Markets (and the radical urban critique), Models for Regional Industrial Analysis, and Industrial Geography and Policy Analysis.

A successor chapter in the latest Geography in America appears in 2003. Significantly, the chapter is no longer titled "industrial geography" but rather the industrial is embedded within "Economic geography: Reconceiving the 'economic' and the 'region'" (Harrington, et. al., 2003). The introduction makes clear that the chapter reflects the "cultural turn" in economic geography and that "industrial" is considered too narrow a focus. A section on "reconceiving the economy" discusses four approaches: Spatial Divisions of Labor and Localities; Regulationism, Flexible Specialization and Post Fordism; Institutionalism and Revolutionary Economics; and Spatial Science, Analytical Political Economy and the New Economic Geography. The section continues with overviews of topics that are more subject matter oriented and less methodological or theoretical. The topics are: Labor, Gender and Ethnicity; Economic Geography of the Environment; and Consumption and the New Retailing Geography. A second section focuses on "Reconceiving Regions: Defining 'Local' in a Global Economy." The subdivisions of this section are: Defining Regions by Defining Processes: Agglomeration and Technology-Based Industrial Districts; Defining Regions by Defining Proc-

esses: The Example of Labor; and International Economy and Globalization. The next section is on “Economic Geography Within Public Policy. The chapter ends with concluding comments that note research foci to which economic geographers pay too little attention; additional work on more tradi-

tional industrial geography issues is not among them.

At the risk of miss-characterizing the books and chapters, a simplification might be that the *industrial emphases* of each are:

Topic	AGIP 1954	Miller 1962	Smith 1971	Watts 1987	GinA 1987	Hayter 1997	GinA 2003
Actual locations by area	X	X					
Actual locations by industry	X	X					
Location theory: economic, cultural	X		X	X	X	X	X
Location decision making				X		X	
Change, innovation	X			X	X	X	X
Labor markets, impacts of industry			X		X	X	X

Recent reviews of industrial geography in Progress in Human Geography note many of the same topics. They cover agglomeration and local milieu, new industrial spaces, restructuring and emerging flexibility, corporate and regional structure, office locations, organizing the firms, networks, firms and institutions, firms and regional development, regional systems of innovation and the knowledge-based economy, socio cultural practices in industrial geography, culture and the firm, and labor market processes in relation restructuring and to ethnicity, gender and social practices (Malmberg, A., 1994, 1996, Yeung, 2000, 2001).

There has been a shift of focus away from description of actual location patterns of manufacturing towards theo-

rising and models (with industrial geography embedded within two “new” economic geographies), decision-making, change, and impacts over the past five decades, but even so the very short 1954 chapter in American Geography Inventory and Prospect was remarkably prescient.

EVOLUTION AND FUTURE

The reviews suggest some major shifts of foci over the past half-century. Within these, however, are continuing themes. As examples, research on the causes and consequences of the uneven spatial distribution of industry, identification of industrial districts, and the threads of location theory have long histories. The progress of industrial geography is kind of jerky evolution.

What is the next phase? There are three forces that I think are important to consider when contemplating the future of industrial geography. One is the strength of “cultural-industrial” geography relative to that of “analytical” industrial geography. The second is the impact of Geographical Information Systems on the students who shape the future of the field. The third is the public and professional fixation on people. I discuss these in reverse order.

There is frequent mention in the popular press on the demise of manufacturing in the advanced economies of the world, and especially in the United States. The decline of manufacturing is real in terms of the number of people employed. However, there is no drop of the importance of manufacturing when measured as percent of gross domestic product. Twenty-five years ago manufacturing accounted for approximately 25% of GDP; twenty-five years later the share remains, manufacturing accounts for 25% of GDP. However, in spite of the continued relevance of industry, and especially to regional economic development, few new students seem to opting for research on manufacturing. The concern for people plays out at a very fundamental level in that the importance of a sector of the economy is too often popularly measured by the number of people employed. An analogy is with agriculture, a sector that has experienced huge declines in number employed, and a corresponding decline in student research topic popularity. The closest research gets to agriculture today is work on rural places and their uphill battle for economic relevance. It would be a shame, and shortsighted, if

manufacturing suffered neglect similar to that which has befallen agricultural geography. However, while the focus on people in terms of share of employment bodes ill for narrowly focused industrial research, in another sense focus on people, via cultural-industrial geography provides new breadth and relevance. It not clear that the “cultural turn” has pushed alternative foci into hiding, but it is clear that the cultural focus geography is a potent force in shaping the discipline, and enhances the scope and versatility of economic geography.

The interests of current students may influence the field in yet another way. A high proportion of students want to link their work to the use of Geographic Information Systems. GIS emphasizes empirical research via counting, data structuring, and spatial patterns. GIS is especially compatible with spatial analysis. Spatial analysis, in turn, draws strength from the advances microeconomics has made in dealing with imperfect competition. Although “regional science” seems to have weakened while the “cultural turn” has gained momentum it is easy to imagine reinvigoration of spatial analytic research.

Manufacturing remains important economically, socially, and academically important. Long-term interest and concern for the where of production, and the consequences of those location decisions will not go away. The vitality of the field is indicated by the amount of production and discussion. The cultural-economic-industrial community of scholars is producing a large number of articles and is sufficiently cohesive to

be able to afford internal debate. The two “new” economic geographies can be complementary. It is perhaps even truer now than it was in 1986 that “industrial geography is alive and well and encouragingly contentious” (Taylor, 1986, 412).

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REFERENCES

Amin, A., 2000, 2003. Industrial districts. In Sheppard, E. and Barnes, T. J. (eds.), *A Companion to Economic Geography*. Oxford: Blackwell.

Barnes, T. J. 2001. Retheorizing economic geography: From the quantitative revolution to the “cultural turn.” *Annals of the Association of American Geographers* 91: 546-565.

Beyers, W. B., Christopherson, S., Erickson, R. E., Gibson, L. J., Hewings, G. G. D., Malecki, E. J., McConnell, J. E., Rees, J. 1989. Industrial geography. In Gaile, G. L. and Wilmont, C. J. *Geography in America*. Columbus, OH: Merrill Publishing Co.

Colby, C. C. 1933. Centrifugal and centripetal forces in urban geography. *Annals of the Association of American Geographers* 23:1-20.

Dicken, P. 1992. *Global Shift: The Internationalization of Economic Activity* (second edition). London: The Guilford Press.

Estall, R. C. and Buchanan, R. O. 1961, 1965. *Industrial Activity and Economic Geography*. London: Hutchinson University Library.

Florida, R. 2000. *The Rise of the Creative Class*. New York: Basic Books

Fujitita, M., Krugman, P. and Venables, 1999. *The Spatial Economy*. Cambridge, MA: M.I.T. Press.

Fujitita, M., and Thisse, J-F. 2002. *Economics of Agglomeration: Cities, Industrial Location, and Regional Growth*. Cambridge, U.K.: Cambridge University Press.

Greenhut, M. L. 1956. *Plant Location in Theory and Practice*. Chapel Hill: University of North Carolina Press.

Gibson, L. J. 2002. Personal correspondence.

Hanick, D. 1999. Analytical economic geography: Introduction to the special issue. *Growth and Change* 99:451-454.

Harrington, J. W., Barnes, T. J., Glasmeier, A. K., Hanink, D. M., Rigby, D. L. 2003. Economic Geography: Reconceiving “the economic” and “the region”. In Gaile, G. L. and Wilmont, C. J. *Geography in America at the dawn of the 21st Century*. Oxford: Oxford University Press.

Harrington, J. W. 2002. Personal correspondence.

Harris, C. D. (with Alexander, J. W., Applebaum, W., Brush, J. E., Hartshorne, R., Heil, R. A., James, P. E., Jensen, J. G., Jones, C. F., McCarty, H. H., Miller, E. W., Miller, H. V., Murphy, R. E., Parsons, J. J., Roterus, V., Schockel, B. H., Smith, T. R., Ullman, E. L., and Wright, A. J.) 1954. The geography of manufacturing. In James, P. E. and Jones, C. F. (eds.), *American Geography: Inventory & Prospect*. Syracuse: Syracuse University Press.

Harstshorn, R. 1927. Location as a factor in geography. *Annals of the Association of American Geographers* 17:92-99.

Hayter, R. 1997. *The Dynamics of Industrial Location: The Factory, the Firm and the Production System*. New York: John Wiley & Sons.

- Hoover, E. M. 1937. *Location Theory and The Shoe and Leather Industries*. Cambridge, MA: Harvard University Press.
- Hoover, E. M. 1948. *The Location of Economic Activity*. New York: McGraw-Hill.
- Hunker, H. L. 1974. *Industrial Development: Concepts and Principles*. Lexington, MA: Lexington Books.
- Hunker, H. L. and Wright, A. J. 1963. *Factors of Industrial Location in Ohio*. Columbus: Bureau of Business Research, The Ohio state University.
- Isard, W. 1956. *Location and Space-Economy*. New York: J. Wiley & Sons and M.I.T. Press.
- Isard, W., Schooler, E. W., and Vietorisz, T. 1959. *Industrial Complex Analysis and Regional Development: A Case Study of Refinery-Petrochemical-synthetic-Fiber Complexes and Puerto Rico*. Cambridge, MA: The M.I.T. Press.
- Isard, W. (with Bramhall, D. F., Carothers, G. A. P., Cumberland, J. H., Moses, L. N., Proce, D. O., Schooler, E. W.) 1960. *Methods of Regional Analysis: an Introduction to Regional Science*. Cambridge, MA: The M.I.T. Press.
- Krugman, P. 2000. Where in the world is the new economic geography? In Clark, G. L., Feldman, M. P. and Gertler, M. S. (eds.) *The Oxford Handbook of Economic Geography*. Oxford: Oxford University Press.
- Lalajainen, R. & Stafford, H. A. 1995. *Corporate Geography: Business Location Principles and Cases*. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Malecki, E. 1991. *Technology and Economic Development*. Harlow, U.K.: Longman Scientific & Technical.
- Malmberg, A. 1994. Industrial geography: agglomeration and local milieu. *Progress in Human Geography* 20:392-403.
- Malmberg, A. 1996. Industrial geography. *Progress in Human Geography*, 18:532-540.
- Markusen, A. 1996. Sticky places in slippery spaces: A typology of industrial districts. *Economic Geography* 72:292-313.
- Martin, R. L. 2000. Local labor markets: Their nature, performance, and regulation. In Clark, G. L., Feldman, M. P. and Gertler, M. S. (eds.) *The Oxford Handbook of Economic Geography*. Oxford: Oxford University Press.
- Massey, D. 1984. *Spatial Divisions of Labour: Social Structures and the Geography of Production*. London: Macmillan
- McNee, R. B. 1958. Functional Geography of the Firm with an illustrative case study from the petroleum industry. *Economic Geography* 34:321-327
- McNee, R. B. 1960. Towards a More Humanistic Economic Geography: The Geography of Enterprise. *Tijdschrift voor Economische en Social Geografie* 51:201-205.
- Miller, E. W. 1962. *A Geography of Manufacturing*. Englewood Cliffs, N. J.: Prentice-Hall.
- Moriarty, B. M. 1980. *Industrial Location and Community Development*. Chapel Hill: The University of North Carolina Press.
- Norton & Rees, J. 1979. The product cycle and the decentralization of American manufacturing. *Regional Studies* 13:141-151.
- Oxford Handbook of Economic Geography, The*. 2000. Clark, G. L., Feldman, M. P. and Gertler, M. S. (eds.). Oxford: Oxford University Press.
- Porter, M. 1990. *The Competitive Advantage of Nations*. New York: Free Press.
- Rees, J. 1974. Decision-making, the growth of the firm and the business environment. In Hamilton, F. E. I, (ed.), *Spatial Perspectives on Industrial Organization and Decision-Making*. London: J. Wiley & Sons, 189-211.
- Renner, G. T. 1974. Geography of industrial localization. *Economic Geography* 23:167-189.

- Rubenstein, J. M. 1992. *The Changing US Auto Industry: A Geographical Analysis*. London: Routledge.
- Saxenian, A. 1994. *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. Cambridge, MA: Harvard University Press.
- Schmenner, R. W. 1982. *Making Business Location Decisions*. Englewood Cliffs, N.J.: Prentice-Hall.
- Scott, A. J. 1988. *New Industrial Spaces*. London: Pion.
- Schoenberger, E. 2000. The management of time and space. *The Oxford Handbook of Economic Geography*. Oxford: Oxford University Press.
- Schoenberger, E. 2003. Creating the corporate world: Strategy and culture, time and space. In Sheppard, E. and Barnes, T. J. (eds.), *A Companion to Economic Geography*. Oxford: Blackwell.
- Sheppard, E. and Barnes, T. J. 1990. *The Capitalist Space Economy: Geographical Analysis after Ricardo, Marx and Sraffa*. London: Unwin Hyman.
- Smith, D. M. 1971, 1981. *Industrial Location: An Economic Geographical Analysis*. New York: John Wiley & Sons.
- Stafford, H. A. 1960. Factors in the Location of the paperboard Container Industry. *Economic Geography*, 36, 260-66.
- Stafford, H. A. 1972. The geography of manufacturers. *Progress in Geography: International Reviews of Current Research*.
- Stafford, H. A. 1974. The anatomy of the industrial location decision: Content analysis of case studies. In Hamilton, F. E. I. (ed.), *Spatial Perspectives on Industrial Organization and Decision-Making*. London: J. Wiley & Sons, 169-187.
- Stafford, H. A. 1980. *Principles of Industrial Facility Location*. Atlanta: Conway Publications.
- Stafford, H. A. & Watts, H. D. 1990. Abandoned products, abandoned places: Plant closures in multi-product multi-locational firms in urban areas. *Tijdschrift voor Economische en Social Geografie*, 3:262-169.
- Taylor, M. 1986. Industrial geography. *Progress in Human Geography* 10:407-426.
- Townroe, P. M. 1971. *Industrial Location Decisions, a Study in Management Behaviour*. Birmingham, U.K.: University of Birmingham Centre for Urban and Regional Studies, Occasional Paper 15.
- Walker, R. 2003. The geography of production. In Sheppard, E. and Barnes, T. J. (eds.), *A Companion to Economic Geography*. Oxford: Blackwell.
- Watts, H. D. 1987. *Industrial Geography*. London: Longman Scientific & Technical.
- Watts, H. D. 2003. Personal correspondence.
- Webber, M. J. 1972. *The Impact of Uncertainty on Location*. Canberra: Australian National University Press.
- Webber, M. 2002. Personal correspondence.
- Weber, A. 1929. *Theory of the Location of Industries* (Translated with introduction and notes by C. J. Friedrich). Chicago: University of Chicago Press.
- Yeung, H. W-C. 2000. Organizing the firm: networks, institutions and regional development. *Progress in Human Geography* 24:301-315.
- Yeung, H. W-C. 2001. Regulating "the firm" and sociocultural practices in industrial geography." *Progress in Human Geography*, 25:293-302.