



Recent Trends in the History of Cartography: A Selective, Annotated Bibliography to the English-Language Literature

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Matthew H. Edney

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[Document History](#).

Director, [History of Cartography Project](#),
University of Wisconsin-Madison (edney@wisc.edu), and Associate Professor and Faculty
Scholar, Osher Map Library and Smith Center for
Cartographic Education, University of Southern
Maine, Portland (edney@usm.maine.edu).

Abstract

The history of cartography has since the 1970s significantly expanded its disciplinary reach, its theoretical directions and approaches, and its scholarship. This annotated bibliography is intended as a guide to the extended field. It seeks to remind newcomers and established map scholars alike of the field's traditional concerns (and literatures) and to inform them of its new directions and scholarship.

Keywords

history of cartography, philosophy of cartography, historiography of cartography, bibliography, empiricist paradigm, modernism, map analysis, critical paradigm, semiotics, constructivism, poststructuralism, postmodernism, academic cartography, map language, Denis Wood, J. B. (Brian) Harley, indigenous cartographies, cartobibliography, imperialism, state formation, nationalism, commerce, consumption

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Introduction

Historical map studies have exploded since 1980 and now reach across the humanities and social sciences. What had been an already dispersed and diverse scholarly literature on the history of cartography has become still more variegated and wide-ranging. The literature now transcends disciplinary boundaries and has proliferated in several languages. The result is a veritable iceberg of scholarship: only a small portion is ever directly visible from any one disciplinary perspective. As a result, newcomers to the field seem inevitably to miss the field's "core" literature even as well-established scholars can remain unaware of new and pertinent scholarship undertaken in other disciplines. The primary goal of this annotated bibliography is therefore to provide a broad-ranging overview to inform all scholars of cartographic history, both new and established, of theoretical approaches and trends within (mostly) the English-language literature.

This bibliography cannot be comprehensive. Some areas of scholarship—e.g., the intersections of maps and literature, especially in early modern England; the cartographies associated with British India; “counter mapping”—have become substantial arenas of research in their own right, almost rivaling established subfields, such as cartobibliography and the cartometric analysis of old maps, and now require their own dedicated bibliographies. The present work is instead based on my own reading, research, and teaching interests. It is therefore undeniably and unavoidably biased towards Anglo-American studies. I undoubtedly omit many important and relevant texts even as I include works which might seem to be of little interest to a wider community of scholars. Reference should be made to [section 9](#), which discusses several bibliographic tools useful for identifying further literature in the history of cartography.

I intend to post annual revisions of this document to *Coordinates*. I therefore welcome any suggestions for additions and corrections (please use “bibliographic guide” within the subject line of any email messages). But please appreciate that I cannot incorporate every suggestion. This document will **always** be a selective and personal interpretation of the literature rather than a comprehensive assessment of recent scholarship. Notices about new publications should therefore also be sent directly to the *Imago Mundi* bibliographer (currently [Nick Millea](#), Map Librarian, Oxford University; nick.millea@ouls.ox.ac.uk).

The bibliography is organized in a series of sections and sub-sections. Individual works are organized in (generally) chronological order within each section, except in the several parts of [section 7](#), which are arranged alphabetically by author. Finally, while I have done my best to adhere to the bibliographic style of the University of Chicago Press, I do not claim to have necessarily succeeded!

Document History

I prepared the first version of this document as a handout for participants in Tom Conley’s NEH-funded summer institute on “Cartography and Literature in Early Modern France” (Houghton Library, Harvard University, 14 July 1998). I thereafter distributed it privately, making occasional additions. With these additions, the bibliography became what I now think of as [version 1.1](#), which I contributed to the materials distributed for the conference on map history held as part of Bernard Bailyn’s Atlantic History Seminar (Harvard University, 24 April 1999). This version, too, was subsequently augmented with occasional additions and distributed privately.

Version 2.0 evolved during 2005 when I incorporated, at Tony Campbell’s suggestion, a much [extended theoretical section \(Section 4\)](#) to supplement the now defunct “Theory and Interpretation” page of his [Map History](#) gateway website. I submitted version 2.0 in February 2006 for publication in [Coordinates](#).

The present **version 2.1** is a further revision, submitted in March 2007. [Section 4](#) has been further reorganized, in particular reorganizing and expanding the section on “empiricist cartography” to separate out commentaries on cartography generally and specific works on cartographic history.

“§” flags items and sections new to this version. Note that many of the new items are those which I should have included in version 2.0, had I then only had sufficient time to write them up. And please also note that I have still to find the time to write up many more of the entries that should be here. The reader has my

sincerest apologies; perhaps I'll be able to catch up by version 2.2.

Acknowledgments

I have of course been helped over the years by many people in the preparation of this document, most obviously the scholars whose work I have found so intellectually engaging and stimulating. I must also thank Tom Conley, Bernard Bailyn, and Tony Campbell for the motivation to prepare and to augment the bibliography.

I must thank several people for their help with the preparation of version 2.1, whether suggesting works for inclusion, stimulating the reworking of Section 4, or commenting on the additions: Karen Culcasi, Joel Kovarsky, Ed Dahl, and Günter Schilder.

1. Basic Gateways to the Discipline

Map History “Gateway”:www.maphistory.info

The flourishing of the World-Wide Web and the proliferation of websites with images of old maps has given the history of cartography a prominent Internet presence. This meta-page provides links to a large number of websites of particular relevance and quality. It provides categorized lists of web sites which possess significant content and/or imagery, including studies in cartographic history published online. It also includes a link (under [“Links & Gateways”](#)) to an historical subset of [Oddens Bookmarks](#), the principal listing of web-sites dealing with all aspects of cartography. The site also contains important content, such as a listing of doctoral dissertations in the history of cartography.

The History of Cartography. Founding editors J. B. Harley and David Woodward. 6 vols. in 12 books. Chicago: University of Chicago Press, 1987- .

This monumental, multi-author project presents a synthesis of research to date on cartographies across cultures and societies, with the goal of creating a new basis from which future research will proceed. Volumes published to date are:

1. *Cartography in Prehistoric, Ancient, and Medieval Europe and the Mediterranean*, ed. J. B. Harley and David Woodward (1987).

2.1. *Cartography in the Traditional Islamic and South Asian Societies*, ed. J. B. Harley and David Woodward (1992).

2.2. *Cartography in the Traditional East and Southeast Asian Societies*, ed. J. B. Harley and David Woodward (1994).

2.3. *Cartography in the Traditional African, American, Arctic, Australian, and Pacific*

Societies, ed. David Woodward and G. Malcolm Lewis (1998).

3. *Cartography in the European Renaissance*, ed. David Woodward (2007). [2 parts]

Future volumes planned or in preparation are:

4. *Cartography in the European Enlightenment*, ed. Matthew H. Edney and Mary S. Pedley. [2 parts]

5. *Cartography in the Nineteenth Century*. [2 parts]

6. *Cartography in the Twentieth Century*, ed. Mark Monmonier. [2 parts]

Imago Mundi: The International Journal for the History of Cartography (1935-)

The key journal in the field, issued twice per year since 2004. All but the most recent volumes are available through JSTOR, the online Journal Storage project. (Even if libraries have not purchased the component of JSTOR which includes *Imago Mundi*, individual subscribers to the journal are permitted access on an individual basis.) In addition to scholarly essays and book reviews, each issue also contains a bibliography of recent publications in the field (searchable through JSTOR); since 1977, this bibliography has been indexed.

Kretschmer, Ingrid, Johannes Dörflinger, and Franz Wawrik, eds. *Lexikon zur Geschichte der Kartographie von den Anfängen bis zum ersten Weltkrieg*. Section C of *Enzyklopädie der Kartographie*, series ed. Erik Arnberger. 2 vols. Vienna: Franz Deuticke, 1986.

Although this work is in German, I include this encyclopedia as an indispensable guide to cartography, especially in Europe and after 1800. Each article is written by an acknowledged expert and is accompanied by references.

Lowenthal, Mary Alice, ed. *D9: Who's Who in the History of Cartography: An International Directory of Current Research*. Tring, Hertfordshire: Map Collector Publications, 1998.

A listing of scholars from across the disciplines who are currently interested in map history; each scholar provides a listing of their research interests and of their publications since the previous volume (*D8*, 1995). Previous volumes—issued at two- or three-year intervals—provide an essential resource for tracking individual and group research projects. A new, online directory (“D10”) is currently under development.

2. Single-Volume, General Histories of Cartography

2.1. Academic Histories

The following works have constructed the intellectual character of traditional cartographic history. That is to say, they are all written from an empiricist/progressivist perspective and must accordingly be used with care.

Bagrow, Leo. *History of Cartography*. Trans. D. L. Paisley. Rev. and enl. R. A. Skelton. 2nd ed. Chicago: Precedent Publishing, 1985.

The classic, but now very outdated, general history by the founder of *Imago Mundi*. Originally written before 1939, it was not published until 1951. The first translation from German to English appeared in 1960, Skelton's revision and extension in 1964.

Brown, Lloyd A. *The Story of Maps*. New York, 1949. Reprint, New York: Dover, 1979.

The only general cartographic history to pay close attention to the mathematical aspects and large institutions of cartographic history. Although seriously out of date, it remains in wide circulation.

Thrower, Norman J. W. *Maps and Civilization: Cartography in Culture and Society*. Chicago: University of Chicago Press, 1996.

Although, as the title suggests, this work does include some discussion of the cartographic traditions of non-Western peoples, it is very much an historical summary in the traditional mode. This work is actually a second edition, with only few changes, of the original 1972 work published under the title *Maps and Man*

2.2. Popular and Derivative Histories

The following works should be used only for background reading and are rarely, if ever, admissible as sources.

Hodgkiss, Alan G. *Understanding Maps: A Systematic History of their Use and Development*. Folkestone, Kent: Dawson, 1981.

Rather than following the more usual chronological approach, Hodgkiss traces through the history of specific mapping genres. In this respect, it is the most successful of the derivative histories. Unfortunately each comparative essay is too brief to be anything more than a useful introduction. Well illustrated.

Wilford, John Noble. *The Mapmakers: The Story of the Great Pioneers in Cartography from Antiquity to the Space Age*. New York: Vintage Books, 1982; reprinted 2001.

A very popular summary, this work is highly derivative and very poorly referenced. (It especially draws upon Lloyd Brown's *The Story of Maps*.) It pays excessive attention to the "progress" of cartography from an art to a science. The author is the principal science correspondent of the *New York Times* and the book has the unmistakable feel of journalistic

popular science writing.

Berthon, Simon, and Andrew Robinson. *The Shape of the World: The Mapping and Discovery of the Earth*. Chicago: Rand McNally, 1991.

Based on a television series by Granada (UK) and PBS, this book does not attempt a universal coverage for the topic, but opts for ten particular episodes or themes. It is semi-popular in nature, for obvious reasons; intellectually, it is highly indebted to Wilford's problematic *The Mapmakers*.

Sobol, Dava. *Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time*. New York: Walker & Co., 1995.

Hartley, Sarah. *Mrs P's Journey: The Remarkable Story of the Woman Who Created the A-Z Map*. London: Simon & Schuster, 2001.

Winchester, Simon. *The Map that Changed the World: William Smith and the Birth of Modern Geology*. New York: HarperCollins, 2001.

Linklater, Andro. *Measuring America: How an Untamed Wilderness Shaped the United States and Fulfilled the Promise of Democracy*. New York: Walker & Company, 2002.

These four works are among the better popular studies on map history. The popular writing on maps was invigorated by the remarkable success of Dava Sobol's *Longitude*. These popular works have been well researched and written, have greatly popularized the study of maps, and can be used with great effect in the classroom. Yet it is always important to remember that they have been written for a popular market and so necessarily take some liberties with their subject matter. In particular, they commonly adopt the popular myth of the lone genius as a hook on which to hang their accounts and so gloss over important nuances.

2.3. Coffee-Table Books

Barber, Peter, ed. *The Map Book*. London: Weidenfeld & Nicolson, 2005.

Ehrenberg, Ralph E. *Mapping the World: An Illustrated History of Cartography*. Washington, D.C.: National Geographic, 2006.

The aesthetic and intellectual appeal of old maps has, of course, long stimulated the production of coffee-table books which are wonderful for providing images of maps, often reproduced in full color, but which make little attempt at any analysis of those maps and their contexts. As a rule of thumb, researchers should beware of any works in which pages of illustrations equal or outnumber pages of text. The two works identified here constitute the rare breed of coffee-table book with intellectual merit, although reference should still be made to the scholarship on which such tertiary sources are based.

3. Historiography

Skelton, R. A. *Maps: A Historical Survey of their Study and Collecting*. Chicago: University of Chicago Press, 1972.

A key study of the development of map collecting and the associated study of early maps, by one of the most prominent cartographic historians of the period 1940-1970. Published after Skelton's death, it includes a complete bibliography of his published works.

Harley, J. B. "Imago Mundi: The First Fifty Years and the Next Ten." *Cartographica* 23, no. 3 (1986): 1-15.

A broad overview and critical analysis of the history of the only international journal in cartographic history and a key institution in the discipline. Particular attention is given to the manner in which the journal has defined the character of the field. (This is the text of Harley's presentation to the International Conference on the History of Cartography, Ottawa, July 2005.)

Harley, J. B. "The Map and the Development of the History of Cartography." In *The History of Cartography* 1 (1987): 1-42 [[complete reference](#)].

This is a thorough account of the eighteenth- and nineteenth-century origins of the history of cartography (among map collectors, national map librarians, and historians of geography) and of attempts since 1945 to establish the subject as an independent discipline. It is essential reading for any student seeking to understand the major phases in the field's literature.

Harley, J. B., and David Woodward. "Why Cartography Needs its History." *The American Cartographer* 16 (1989): 5-15.

A justification of the history of cartography from the perspective of the academic discipline of cartography. Response to the paper has been minimal, perhaps because the history of cartography has served a mostly rhetorical role within academic cartography.

Edney, Matthew H. *The Origins and Development of J. B. Harley's Cartographic Theories*. Special issue of *Cartographica* 40, nos. 1 & 2: Monograph 54. Toronto: University of Toronto Press, 2005.

A detailed analysis of Harley's intellectual interests that took him from an initial commitment to the empiricist paradigm of cartography, through an interest in map use in the later 1970s, to advocating a poststructuralist approach to map studies in the 1980s. It is, in effect, a history of cartographic history as practiced in the Anglophone world in the later 1900s and places the field in the context of broader intellectual and academic developments. It includes a complete, classified bibliography of Harley's publications.

Edney, Matthew H. "Putting 'Cartography' into the History of Cartography: Arthur H. Robinson, David Woodward, and the Creation of a Discipline." *Cartographic Perspectives* no. 51 (2005): 14-29.

An analysis of a crucial, pre-Harleian stage in the reconfiguration of the history of cartography, when academic cartographers pursued studies not of the content of old maps but of past cartographic technologies and techniques. Within the U.S.A., Robinson and Woodward were central figures in this movement. Woodward was especially responsible for reconfiguring academic cartography's "internal" history into a humanistic field of study in its own right.

Lewis, G. Malcolm. "Cartography, History of." In *Dictionary of Human Geography*, ed. R. J. Johnston, Derek Gregory, and David M. Smith, 48-53. 3rd ed. Oxford: Blackwell, 1994.

Woodward, David. "Cartography, History of." In *Dictionary of Human Geography*, ed. R. J. Johnston *et al.*, 64-68. 4th ed. Oxford: Blackwell, 2000.

Edney, Matthew H. "Cartography, History of." In *Dictionary of Human Geography*, ed. Derek Gregory *et al.*, forthcoming. 5th ed. Oxford: Blackwell, 2007.

Reference might also be made to these three overviews of the history and nature of the history of cartography as an academic field of study. They constitute three quite distinct takes on the field and are usefully read in comparison with each other.

4. Methodological and Theoretical Statements

Methodological and theoretical works on cartography and the history of cartography—remarkably few when compared with other academic fields—are grouped here according to their fundamental conceptualization of the nature of maps and their history. Reference should also be made to the many substantive works which possess significant theoretical components and which are listed in [section 5](#) and [section 7](#).

4.1. The Empiricist Paradigm

Properly speaking, the empiricist paradigm is comprised of a complex web of beliefs, convictions, and presumptions. At its core is the particular belief that the worth and quality of maps are determined by the quantity and quality of their content, and that maps are therefore properly evaluated in terms only of that content.

4.1.1: The Analysis of Map Content

For most of the eighteenth, nineteenth, and twentieth centuries, detailed scholarly interest in old maps addressed maps' informational content. Two late statements of the methodological issues involved remain very pertinent.

Skelton, R. A. *Looking at an Early Map. The Annual Public Lecture on Books and Bibliography, University of Kansas, October 1962*. University of Kansas Publications, Library Series 17. Lawrence: University of Kansas Press, 1965.

A very accessible summary of the basic caveats which need to be borne in mind when looking at old maps. In particular, Skelton highlights the problems implicit in equating specific portions of map content to specific places on apparent visible resemblance alone, problems which plague many interpretations of (for example) the putative depiction of Antarctica and the Americas on early maps.

Harley, J. B. "The Evaluation of Early Maps: Towards a Methodology." *Imago Mundi* 22 (1968): 62-74.

A clear and fundamental outline of the issues involved in the analysis of map content, both in terms of the internal criticism of the map image itself and external criticism of placing the map into its production context.

See also the chapter on map analysis and cartometry in Blakemore and Harley, "Concepts in the History of Cartography" [[complete reference](#)] and the detailed chapters in Buisseret, ed., *From Sea Charts to Satellites* [[complete reference](#)].

4.1.2. Academic Essays on the Nature of Maps

The development after 1945 of cartography as an academic field was focused on map design and production, especially of smaller-scale, lower-resolution maps. In the 1960s and early 1970s, academic cartographers sought to legitimate their field of inquiry as a proper science by the deployment of numerous, and various, models of cartographic communication. These models spawned a few monographs reflecting upon the nature of the field.

Eckert, Max. *Die Kartenwissenschaft: Forschungen und Grundlagen zu einer Kartographie als Wissenschaft*. 2 vols. Berlin: Walter de Gruyter, 1921-25.

In advocating for the academic study of cartographic design, Eckert gave extensive consideration of the history of particular aspects of cartography, notably thematic mapping. His goal was to place modern cartography on a clear trend line of past progress pointing towards future perfection in its practices. (A similar strategy was used by Eduard Imhof in his account of relief depiction: *Kartographische Geländedarstellung* [Berlin: Walter de Gruyter, 1965], reprinted as *Cartographic Relief Presentation*, ed. and trans. H. J. Steward [New York: Walter de Gruyter, 1982].)

Robinson, Arthur H. *The Look of Maps: An Examination of Cartographic Design*. Madison: University of Wisconsin Press, 1952.

Like Eckert, Robinson also relied upon an historical perspective when advocating for

academic cartography. He argued that cartographic practice had bifurcated in the early nineteenth century: the “substantive” component of data acquisition became the preserve of the engineer and surveyor, and had made significant advances, while the production of specialist maps by social scientists and other scholars had lagged behind; what was therefore needed was a new, progressive science of cartographic design emphasizing small-scale maps.

Guelke, Leonard, ed. *The Nature of Cartographic Communication*. Cartographica Monograph, 19. Toronto: Department of Geography, York University, 1977.

Guelke reprinted most of the crucial essays in which academic cartographers (Ratajski, Kolácný, etc.) advanced models of cartographic communication. Of greatest significance, in hindsight, was the reprinting of Barbara Petchenik’s 1975 “Cognition in Cartography,” previously circulated only in conference proceedings. Petchenik revealed that the communication models were fundamentally flawed because they treated map readers as passive recipients of the knowledge encoded by the map’s maker; in contrast, she argued that map readers are cognitively able agents who actively create knowledge from maps. Reference should also be made to Guelke’s own critique of the communication models, originally published in *Cartographica* in 1976.

Robinson, Arthur H., and Barbara Bartz Petchenik. *The Nature of Maps: Essays Toward Understanding Maps and Mapping*. Chicago: University of Chicago Press, 1976.

A wide-ranging and thoughtful study that sought to provide an introduction to a “general theory of cartography” as a starting point for the development of such a theory even as the communication models collapsed in relevance. Concluding that only an approximate parallel can be drawn between “maps” and “language,” Robinson and Petchenik drew on philosophy and psychology to explain the undeniably seductive appeal of maps. Neglected by most recent works, it is well-worth revisiting and contemplating.

Keates, J. S. *Understanding Maps*. New York: John Wiley & Sons, 1982. London: Addison Wesley Longman, 1996, 2nd. ed.

Keates further developed Petchenik’s arguments that map design must begin with an understanding of the map user, by considering just how the user visually perceives a map, starting with how the eye-brain system functions and working through more cognitive and psychological elements. He then explored the implications of a semiotic approach to understanding maps as sign systems before providing powerful criticism of the communication models.

Keates’ goal of outlining an objective practice of map design was overturned somewhat by the attempts of artificial intelligence designers to incorporate the subjective, artistic skills of practicing map designers into automated map production systems. In the second edition of his text, he therefore added sections considering the nature of cartography as an art and of its integration into digital systems. At the same time, Keates expanded his discussion of map

communication to comment on issues of rhetoric, textuality, and social theory advanced by Harley and others. Keates saw Harley's work as interesting but largely irrelevant to his concerns with what he understood to be the inherent individuality of the map design and map use processes (refer Andrews, in [section 4.2.4](#)).

Head, C. Grant. "The Map as Natural Language: A Paradigm for Understanding." *Cartographica* 21, no. 1 (1984): 1-36.

Andrews, J. H. "Map and Language: A Metaphor Extended." *Cartographica* 27, no. 1 (1990): 1-19.

Two attempts to reconceptualize maps as functioning like verbal language, with grammar, syntax, parts of speech, etc. Ultimately, both are unclear as to how to apply their proposed terminologies and they remain unconvincing.

Vasiliev, I., S. Freundsuh, D. M. Mark, G. D. Theisen, and J. McAvoy. "What is a Map?" *The Cartographic Journal* 27 (1990): 119-23.

An intriguing study that adopted ideas developed by linguists to deal with people's flexible classification processes (rather than the rigid classifications usually formulated by researchers) to study what people think maps are. I am unsure, however, that the research methodology—which employs the psychological testing central to much map design research—was properly designed to eliminate the researchers' own fundamental biases.

Fremlin, Gerald, and Arthur H. Robinson. "Maps as Mediated Seeing." *Cartographica* 35, nos. 1 & 2 (1998): *Monograph* 51.

An extended argument that construes maps—both topographical and thematic—to be mediations between the phenomena mapped and the map viewer as the basis for a comprehensive approach for developing a "theory of maps." In particular, Fremlin and Robinson replace the idea that maps are a form of language with an analogy to the viewing of imagery; that is to say, they argue that maps function through *gestalt* psychology and that cartographic processes can be conceptualized as processes to enhance clarity and comprehension. Much effort is given to distinguishing something that is essentially a map from other representational devices (landscape, globes, *tromp-l'oeil*, etc.). Ultimately, maps are treated as necessarily and directly tied to the physical and social environments they map; as such, Fremlin and Robinson adhere to cartography's empiricist paradigm.

4.1.3. An "Internal" History of Cartography

The development of cartography as an academic field of study relied upon the promotion of a history of the cartographic processes of design and production. This internalist approach to cartographic history did not comprise a particularly self-conscious movement, but it has produced some important, reflective essays.

Woodward, David. "The Study of the History of Cartography: A Suggested Framework." *The American*

Cartographer 1 (1974): 101-15.

An early attempt to delineate a discipline of the “history of cartography.” Woodward gave shape to the discipline by organizing the existing and diverse literature on old maps around a tabular “framework” inspired by academic cartography’s communication models. Woodward distinguished between the traditional study of maps made *of* a region and the new study of map making *within* a region; he also drew a related distinction between the old study of map content and the new study of map form. In many respects, Woodward’s ideas for a humanistic study of maps laid the foundation for more explicitly theoretical approaches to cartography; Woodward’s subsequent theoretical writings thus appear in [section 4.3.2](#).

§ Harley, J. B. “The Map User in the Revolution.” In J. B. Harley, Barbara Bartz Petchenik, and Lawrence W. Towner, *Mapping the American Revolutionary War*, 79-110. Chicago: University of Chicago Press, 1978.

Harley’s attempt to apply models of cartographic communication to a specific historical issue: how eighteenth-century people used maps during the American Revolution. In the process he exposed many of the problems with the communication models, setting the stage for this adoption of iconography ([section 4.3](#)).

Andrews, J. H. “What Was a Map? The Lexicographers Reply.” *Cartographica* 33, no. 4 (1996): 1-11.

Andrews reviewed more than three hundred definitions of “map” in dictionaries, encyclopedias, and textbooks (mostly English-language) in order to understand how the word has been used since the seventeenth century. See 4.1.4. Introducing Cartographic Context

Although internalist histories have not questioned—and have, in fact, tended to support—the precepts of the empiricist paradigm, they have turned scholarly attention away from map content to cartographic activities. This move had the truly beneficial effects of making historians aware of the contexts within maps are made and of stressing the use of archival materials rather than the maps themselves as the proper foundation for any cartographic historical analysis. The result has the production of a number of very useful, empirical studies, of which the following are exemplary. This very important genre of map scholarship remains vibrant and has served as the necessary basis for later critical scholarship (see Edney, “Putting ‘Cartography’ into the History of Cartography” [[complete reference](#)]).

§ Woodward, David, ed. *Five Centuries of Map Printing*. Chicago: University of Chicago Press, 1975.

A collection of essays, originally presented as the 1972 series of Nebenzahl Lectures, that outline the history of the principal technologies used to print maps in Europe and the West. An essential starting point for anyone interested in the artefactual nature of printed maps.

§ Robinson, Arthur H. *Early Thematic Mapping in the History of Cartography*. Chicago:

University of Chicago Press, 1982.

Robinson followed through with his understanding of the modern history of cartography ([section 4.2.1](#)) with his own historical studies of the history of thematic mapping. This crucial and innovative book provides a solid foundation for study of this still somewhat neglected subject.

Monmonier, Mark. *Technological Transition in Cartography*. Madison: University of Wisconsin Press, 1985.

An important work within the internal history of cartography promoted by academic cartography, with its stress not on the traditional history of map content but on the development of cartographic techniques and technologies. Monmonier describes five arenas of map making and use (e.g., “location and navigation”) that each underwent significant reconfiguration in the nineteenth and especially the twentieth centuries. Of particular interest was the notice taken of the transition to digital technologies that was then just beginning to take hold.

§ Schilder, Günter. *Monumenta Cartographica Neerlandica*. Planned in 10 vols. Alphen aan den Rijn: Canaletto, 1986- .

This is the preeminent exemplar of the post-1970 archivally grounded approach to cartographic history. Schilder’s *magnum opus*, projected as no less than ten volumes, addresses the cultures of map production and consumption in the Netherlands during the sixteenth and seventeenth centuries. The portfolios of 1:1 facsimiles are accompanied by detailed essays (bilingual, Dutch-English) that explain each map’s context, grounded in extensive archival research.

Wallis, Helen, and Arthur H. Robinson, eds. *Cartographical Innovations: An International Handbook of Mapping Terms to 1900*. Tring, Hertfordshire: Map Collector Publications for the International Cartographic Association, 1987.

This work exemplifies the internal approach to cartographic history promoted by academic cartographies, emphasizing as it does technical issues. Each essay explores the first appearance of a particular technique, usually in either the Classical era or in early modern Europe. Little attention is paid to the subsequent dissemination and general adoption of each technique. The bibliographies are useful.

§ Woodward, David, ed. *Art and Cartography: Six Historical Essays*. Chicago: University of Chicago Press, 1987.

This collection of pioneering essays, based on the 1980 Nebenzahl Lectures, addressed a topic long of interest to academic cartographers—the

interconnections between maps and art—without depending on the traditional historical model in which the art of maps progressively gives way to the science of maps. The six essays variously address the permutations of maps as art, maps in art, art as maps, and art in maps. Of special note are the papers by Samuel Edgerton and Svetlana Alpers (also published in her *The Art of Describing: Dutch Art in the Seventeenth Century* [Chicago: University of Chicago Press, 1983]) which proposed (conflicting) understandings of the relationship between perspective and mapping in Renaissance Italy and Low Countries.

4.2. Questioning the Empiricist Paradigm

4.2.1. Map Image and Map Language

With the failure of the models of cartographic communication, of the parallel to spoken language, and of the psychophysical approach to map design (effectively moribund by the early 1980s: see Barbara Bartz Petchenik, “A Map Maker’s Perspective on Map Design Research, 1950-1980,” in Graphic Communication and Design in Contemporary Cartography, ed. D. R. F. Taylor [New York: John Wiley & Sons, 1983], 37-68), academic cartographers who were not hypnotized by digital technologies increasingly turned to semiology/semiotics (the study of sign systems) as a means to conceptualize maps. Some of this work was carried out in historical terms. In the process, a loose appreciation developed for the mechanisms by which maps can be manipulated to mislead (codifying earlier concerns for ‘propaganda mapping’); this, in turn, led to some rather mild statements about the potentially political nature of cartography and so the need for map makers to act in an ethical manner.

Bertin, Jacques. *Semiology of Graphics: Diagrams, Networks, Maps*. Madison: University of Wisconsin Press, 1983.

Originally published in French in 1973, Bertin explored the graphic composition of maps and other images of graphic design. His work provided the foundation of a new school of research in cartographic design that emphasized the manipulation of visual variables. This school has encouraged the consideration of the particular circumstances of each design project and so has not sought to elucidate any universal laws of cartographic design.

For especially useful applications of Bertin’s approach to map design, see Alan M. MacEachren, *SOME Truth with Maps: A Primer on Symbolization & Design* (Washington, D.C.: Association of American Geographers, 1994), and John Krygier and Denis Wood, *Making Maps: A Visual Guide to Map Design for GIS* (New York: Guilford, 2005).

§ Schulz, Juergen. “Jacopo de’ Barbari’s View of Venice: Map Making, City Views, and Moralized Cartography Before the Year 1500.” *Art Bulletin* 60 (1978): 425-74.

This crucial essay undertook an iconological investigation of de' Barbari's great urban view of 1500. Dismissing traditional interpretations of the view as a functional document, Schulz delineated its symbolic components and argued that it served a celebratory function, lauding the power and glory of the Venetian Republic. Note that Schulz's argument depended upon distinguishing between (a) strictly factual and functional maps and (b) maps with a further symbolic or didactic purpose. The result is a two-tier system of cartographic meaning: factual and cultural/political. This divide persists through the work of Harley ([see below](#)) and others, but is not tenable within the post-structuralist positions that have subsequently developed.

§ A later scholar who has maintained the factual/symbolic divide is Howard Marchitello, in his "Political Maps: The Production of Cartography and Chorography in Early Modern England," in *Cultural Artifacts and the Production of Meaning: The Page, the Image, and the Body*, ed. Margaret J. M. Ezell and Katherine O'Brien O'Keefe (Ann Arbor: University of Michigan Press, 1997), 13-40, and in his *Narrative and Meaning in Early Modern England: Browne's Skull and Other Histories* (Cambridge: Cambridge University Press, 1997), esp. 63-123.

§ A study that significantly updates Schulz's original work is Deborah Howard, "Venice as a Dolphin: Further Investigations into Jacopo de' Barbari's View," *Artibus et Historiae* 18, no. 35 (1997): 101-11.

Blakemore, Michael J., and J. B. Harley. "Concepts in the History of Cartography: A Review and Perspective." Ed. Edward H. Dahl. *Cartographica* 17, no. 4 (1980): Monograph 26.

In many ways the manifesto for a new, theoretically informed discipline, "Concepts" presented a highly significant overview and critique of traditional approaches and methodologies in cartographic history. Blakemore and Harley particularly criticized cartographic historians for structuring their studies according to three, unacknowledged, intellectual frameworks: the "Darwinian," "Old-is-Beautiful," and "Nationalist" "paradigms." In their place, they argued for a "linguistic" approach to conceptualizing maps and map making. They particularly advocated an iconological methodology (based on Panofsky) for analyzing "map language."

Those especially interested in this monograph should also consult Edward H. Dahl, ed., "Concepts in the History of Cartography: Some Responses, with the Authors' Reply, Especially to Questions of Definition," *Cartographica* 19, no. 1 (1982): 77-96.

Petchenik, Barbara Bartz. "Maps, Markets and Money: A Look at the Economic Underpinnings of Cartography." *Cartographica* 22, no. 3 (1985): 7-19.

One of three essays in which Petchenik reflected upon key issues for cartographic practice generally ignored by academic cartographers. Petchenik's approach to the commercial underpinnings of "real world" cartographic practice was pragmatic and called for the careful study of market forces for both maps and for cartographic skills/personnel. Of special interest is her attention not so much to map use but to the *need* for maps, a point usually taken for granted by academic cartographers, and how map need is a function of social affluence.

Axelsen, Bjørn, and Michael Jones. "Are all Maps Mental Maps?" *GeoJournal* 14 (1987): 447-64.

An early recognition that maps are not as purely factual and objective as they have been made out to be. If not, they must be subjective in nature and represent the perceptions and ideals of their makers; that is, they are "mental maps."

Monmonier, Mark. *How to Lie with Maps*. Chicago: University of Chicago Press, 1991; 2nd ed., 1996.

A handy and widely popular text that seeks to build cartographic literacy in the general, educated population. By explicitly discussing how map design can be manipulated to promote particular images, Monmonier implicitly educates his readers in good map design. The work treads a fine balance between preserving cartography's proper objectivity while acknowledging the inherently subjective nature of map making. In this respect, Monmonier owes much to J. K. Wright, "Map Makers are Human," *Geographical Review* 32 (1942): 527-44 (reprinted in Guelke, ed., *Nature of Cartographic Communication*, 8-25 [[complete reference](#)]) and Wright's formulation of proper and decorous standards of cartographic practice in the face of overt propaganda mapping by Nazi Germany. (Compare with Pickles, in [section 4.3.2](#).)

MacEachren, Alan M. *How Maps Work: Representation, Visualization, and Design*. New York: Guilford Press, 1995.

A wide-ranging study that sought to reestablish map design studies on scientific grounds. It addressed both the biophysical and cognitive processes of viewing maps; the semiotic processes by which readers imbue a map with meaning; and the visualization processes by which maps are used. MacEachren's take on the study of maps as sign systems was heavily informed by C. S. Peirce's three-part composition of signs (signifier, signified, referent); in fact, the book serves as a very useful and competent primer on Peircean semiotics and its constituent elements of semantics, syntactics, and pragmatics. As such, it is necessary reading vis-à-vis Denis Wood's advocacy of a Saussurian semiology ([section 4.2.2](#)).

Black, Jeremy. *Maps and Politics*. London: Reaktion Books, 1997. Reprinted Chicago: University of Chicago Press, 1998.

Black seems uncertain whether to provide a critique of the political arguments of Harley, Wood, and others, or to provide a primer on map design strategies that gets beyond cartography's implicit biases (as Monmonier or, indeed, Wood). Theoretically, he remains wedded to an individualist approach to cartography and to an objective/subjective divide defined by empirical standards; pragmatically, he plays fast and loose with the meaning of "politics" in order to deal with a very disparate set of issues.

4.2.2. Denis Wood

Denis Wood has provided a consistent critique—both of the ideals of modern academic cartographers and of modern cartographic ideology—since the late 1970s. His work is wide-ranging and influential, especially in North American circles. J. H. Andrews's "Organising Wonder: Map-Philosophical Issues in the Writings of Denis Wood." (M.Sc. thesis., Trinity College, Dublin, 1998) reviews Wood's main cartographic positions to that date (it can be consulted in the British Library [maps 226.a.90]). See also entries in [section 4.2.4](#).

Wood, Denis. "Now and Then: Comparisons of Ordinary Americans' Symbol Conventions with Those of Past Cartographers." *Prologue* 9 (1977): 151-61.

Drawing on his training in the cognitive development and spatial behavior of children, Wood proposed a startlingly innovative, deep structure for cartographic representation. Specifically, he argued that the manner in which children learn to draw hills on maps parallels the historical development of hill signs; thus, ontogeny replicates phylogeny (or, to be more precise, ethnogeny). P. D. A. Harvey used the argument as a way to organize his history of topographical maps [[complete reference](#)] and Wood would develop it further in his *Power of Maps*. Unfortunately, the empirical foundations for Wood's ethnogenesis of hill signs is problematic.

Wood, Denis. "Introducing the Cartography of Reality." In *Humanistic Geography: Prospects and Problems*, ed. David Ley and Marwyn S. Samuels, 207-19. Chicago: Maaroufa Press, 1978.

Wood, Denis. "Cultured Symbols: Thoughts on the Cultural Context of Cartographic Symbols." *Cartographica* 21, no. 4 (1984): 9-37.

Wood, Denis. "Pleasure in the Idea: The Atlas as Narrative Form." *Cartographica* 24, no. 1 (1987): Monograph 36, 24-45.

In these three studies, Wood set out to puncture what he understands to be

academic cartography's fatuousness. With his consciously un-academic (even anti-academic) prose style, he skewered the academic field's self-imposed restrictions concerning, respectively, map design and map design research (too dry, too stultifying), the relation of the map to the world (too dry, too pseudo-scientific), and map reading (too dry, too factual). In its place, Wood advocated a discipline that is truly engaged with its subject matter and not intent on defending some parody wrung dry of all color and poetry.

Wood, Denis, with John Fels. *The Power of Maps*. New York: Guilford, 1992.

A wide-ranging and seminal introduction to the naturalization of maps within modern western culture. Emphasis is on the situation of the later twentieth century, but is broadly applicable to the 1800s and 1900s. Wood's perspective is a combination of three factors: (1) maps as a form of communication; (2) individual spatial frameworks (so-called 'mental maps'; see also J. M. Blaut, D. Stea, C. Spencer, and M. Blades, "Mapping as a Cultural and Cognitive Universal," *Annals of the Association of American Geographers* 93 [2003]: 165-85); and (3) a broad analogy to biological evolution. In my experience, students and other readers can find Wood's writing style to be distracting.

Several of the chapters in this work are reprints of essays also published in *Cartographica* (and which I therefore do not list separately here). In particular, chapter 5 reprints the truly important introduction ("Designs on Signs") by Wood and John Fels to a semiology of maps (along Barthean lines) which was originally published in 1986. Their analysis of a state road map is a particularly effective challenge to several of academic cartography's enshrined misconceptions of the nature of map communication.

4.2.3. J. B. Harley

The principal figure in the "paradigm shift" in map studies in the 1980s was J. B. Harley (see also [section 3](#), [section 4.1](#), [section 4.3](#), and [section 5](#). In this section I list what I take to be his most important essays; for more information and a complete bibliography, see my monograph (cited in [section 3](#)).

*Note that several of the later essays were reprinted in J. B. Harley, **The New Nature of Maps: Essays in the History of Cartography**, ed. Paul Laxton (Baltimore: Johns Hopkins University Press, 2001); this collection was recently republished as **La nueva naturaleza de los mapas: Ensayos sobre la historia de la cartografía**, trans. Leticia García Cortés and Juan Carlos Rodríguez (Mexico City: Fondo de cultura económica, 2005). An earlier, French-language collection of some essays is Peter Gould and Antoine Bailly, eds., **Le pouvoir des cartes: Brian Harley et la cartographie** (Paris: Anthropos, 1995).*

Harley, J. B. "Maps, Knowledge, and Power." In *The Iconography of Landscape: Essays on*

the Symbolic Representation, Design and Use of Past Environments, ed. Denis Cosgrove and Stephen Daniels, 277-312. Cambridge Studies in Historical Geography, 9. Cambridge: Cambridge University Press, 1988. Reprinted in *New Nature of Maps*, 51-81.

Harley, J. B. "Silences and Secrecy: The Hidden Agenda of Cartography in Early Modern Europe." *Imago Mundi* 40 (1988): 57-76. Reprinted in *New Nature of Maps*, 83-107.

Two landmark essays that introduced the history of cartography to some of the ideas of Michel Foucault. The level of analysis in both papers is not particularly great; they are best understood as demonstration pieces. In the first, Harley presented a series of examples of how maps and map making embodied various cultural ideologies and served as tools of the modern state; in the second, he developed the question of knowledge/power further in terms of the particular formation and reading of "white spaces" on maps.

Harley, J. B. "Power and Legitimation in the English Geographical Atlases of the Eighteenth Century." In, *Images of the World: The Atlas Through History*, ed. John A. Wolter and Ron E. Grim, 161-204. New York: McGraw-Hill for the Library of Congress, 1997. Reprinted in *New Nature of Maps*, 109-47.

This paper was originally presented in 1984 and subsequently went through substantial revision until its final form in 1988 (although not published until 1997). It comprises an analysis of a particular cartographic mode in terms of Harley's conception of Foucault's power/knowledge. Harley drew a distinction between the "internal power" of maps (their structuring and codification) and their "external power" (as ideological tools).

Harley, J. B. "Deconstructing the Map." *Cartographica* 26, no. 2 (1989): 1-20. Reprinted in *New Nature of Maps*, 149-68, and with slight modifications in *Writing Worlds: Discourse, Text, and Metaphor in the Representation of Landscape*, ed. Trevor J. Barnes and James S. Duncan (London: Routledge, 1992), 231-47.

Perhaps the most famous of Harley's theoretical statements, it constitutes a highly polemical critique—merging Harley's established interest in Foucault with a new (and equally incomplete) interest in Derridean deconstruction—that establishes modern maps to be totalizing representations. Harley's particular interest was to criticize modern academic cartography more than to reflect on cartographic history. A crucial component of this paper was the issue of how a map maker might act ethically, given the power-relations inherent to the profession.

See also Edward H. Dahl, ed., "Responses to J. B. Harley's Article, 'Deconstructing the Map,' Published in the Last Issue of *Cartographica* (Volume 26, Number 2, Summer 1989, pp. 1-20)," *Cartographica* 26, nos. 3 &

4 (1989): 89-127.

Harley, J. B. "Historical Geography and the Cartographic Illusion." *Journal of Historical Geography* 15 (1989): 80-91.

Perhaps the most successful of Harley's later, overtly poststructuralist essays. It works because of his focus on a particular issue: the manner in which historical geographers have used maps—without critical reflection—as a fundamental means to organize and display their data. Of all Harley's essays, this most nearly adopts a constructivist understanding of cartographic representation.

4.2.4. Responses to Harley

See also the second edition of Keates, *Understanding Maps* [[complete reference](#)] and my 2005 monograph (cited in [section 3](#)).

Andrews, J. H. *Meaning, Knowledge and Power in the Map Philosophy of J. B. Harley*. Trinity Papers in Geography, 6. Dublin: Department of Geography, Trinity College Dublin, 1994. Reprinted, with modifications, as the introduction to Harley, *New Nature of Maps*, 1-32.

The only substantial assessment of Harley's theoretical ideas from the perspective of an avowedly empiricist historian. Andrews engages in academic sleight-of-hand: although he claims to address Harley's theories, he actually only tackles their manifestations and does not come to terms with Harley's fundamental conceptions of maps and map making. Its inclusion as the introduction to Harley's *New Nature of Maps* has confounded several reviewers.

Belyea, Barbara. "Images of Power: Derrida, Foucault, Harley." *Cartographica* 29, no. 2 (1992): 1-9.

A significant critique of Harley's later arguments, based on an extensive reading of Foucault and Derrida. Belyea argues, like Wood, that Harley was too selective in his use of Foucault and Derrida so that his theories were incomplete. Unlike Wood, Belyea is a poststructuralist.

Wood, Denis. "The Fine Line between Mapping and Mapmaking." *Cartographica* 30, no. 4 (1993): 50-60.

Wood convincingly argues that Harley's later theorizing failed because he was unable to adopt poststructuralist arguments fully. Wood himself follows Roland Barthes in straddling the structural/poststructural divide; most of his historical essays attempt a cognitive/semiotic explanation of cartography's underlying structures, but he does at times wander into poststructural conceptions of discourse.

Wood, Denis. “The Map as a Kind of Talk: Brian Harley and the Confabulation of the Inner and Outer Voice.” *Visual Communication* 1, no. 2 (2002): 139-61.

An engaging review occasioned by the publication of Harley’s *New Nature of Maps*, characterizing Harley’s work as recognizing that the “inner voice” of the map maker and the “outer voice” of the patron are intertwined. Wood extends this to a general discussion of the map as a “discursive function.” Wood also has much to say on Harley’s passion and some of the responses by academic cartographers of his critique.

§ 4.2.5. A Flawed Critique of Modern Cartography

A number of scholars have followed or paralleled Harley’s later criticisms of modern cartography as a fundamentally flawed technology. Concerned with issues of political economy and social justice, often from a politically radical perspective, these scholars understand modern cartography to entail technologies that necessarily sustain the social surveillance and inequalities inherent to the modern state, and therefore judge modern cartography harshly. Such scholarship has taken the cartographic ideal of mimetic representation—as it has developed within modern society after 1800—at face value. Yet while academic cartographers have espoused and celebrated that ideal, this particular brand of criticism has derided it. From this perspective, all maps made to scale after 1500 are held to be totalizing texts and are therefore to be rejected as culturally impoverished and sterile documents that contribute nothing to how humans truly experience and understand space. In this respect, modern maps are commonly compared unfavorably against what are taken to be the more environmentally and phenomenologically sensitive maps made by non-modern peoples. (For more on this, see the comments by Edwards, Writing, Geometry and Space, 1-15 [[complete reference](#)].) However, this overall position is untenable once we properly delineate and understand the actually multiple characters of modern maps and mapping. The following comprises just a selection of essays that pursue this “hard critique”; many more might easily be adduced.

§ Harvey, David. “The Time and Space of the Enlightenment Project.” In *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change*, 241-59. Oxford: Basil Blackwell, 1989.

Harvey relies upon the modern ideal’s progressivist historical narrative to support his argument of space-time compression: as capitalism intensified, local, environmentally nuanced maps of local places—which Harvey usefully calls “sensuous” maps—gave way before a more abstracted, uniform, and increasingly globalized representation of geographical space in the modern map. Setting aside all the problems with Harvey’s history, his evidentiary deployment for cartography is fundamentally flawed by the continuing existence in the modern world of a variety of sensuous cartographies.

§ Harvey subsequently advanced an open and complex understanding of the multiple sites (discourses, networks, and institutions) of cartography and geography in his essay, “Cartographic Identities: Geographical Knowledges under Globalization,” in *Spaces of Capital: Towards a Critical Geography* (London: Routledge, 2001), 208-33. Yet even here, with evident sensitivity for the permutations of modern mapping, he remained bound (esp. p. 220-21) by a divide between the imaginative and personal (mental/cognitive) mappings of non-modern or pre-modern societies and the absolute geometries of modern cartography.

§ Avery, Bruce. “The Subject of Imperial Geography.” In *Prosthetic Territories: Politics and Hypertechnologies*, ed. Gabriel Brahm, Jr. and Mark Driscoll, 55-70. Boulder, Colo.: Westview Press, 1995.

I cite this essay as an exemplar of the flawed evaluation of maps and mapping practices, in which medieval *mappaemundi* are taken to stand for all non-modern maps (phenomenologically complex and inherently good) while British maps of India at the end of the nineteenth century are taken to stand for all modern maps (rationally oversimplified and inherently bad). This essay is predicated on the presumption that it is meaningful to compare such otherwise disparate, distinct, and chronologically and culturally distant forms of maps. Blithely jumping from one to another, Avery argues that modern maps are necessarily invalid forms of representation.

§ Escolar, Marcelo. “Exploration, Cartography and the Modernization of State Power.” *International Social Science Journal* 49, no. 151 (1997): 55-75.

A restatement of the traditional, progressivist historical narrative, but retold with European states and empires as the driving force behind all cartographic activities, based extensively on the essays in Buisseret’s *Monarchs, Ministers, and Maps* [[complete reference](#)]. While superficially adequate, this is nonetheless a highly simplified account that reifies political economy’s view of maps as nefarious devices.

§ Neocleous, Mark. “Off the Map: On Violence and Cartography.” *European Journal of Social Theory* 6, no. 4 (2003): 409-25.

This very handy and competent primer on the construction of violence as the preserve of the modern state, and so on the ideological signification of “terrorism,” is offset by a discussion of “cartographic violence” that rests on the harsh critique of modern cartography as necessarily and solely a tool of the modern state. I would argue in contrast that the modern cartographic ideal is in fact a creation of modern Western imperialism, which explains the apparently intimate connection of mapping to violence, but which also requires us to look

beyond this narrow conception of maps and mapping to all kinds of modern activities.

§ Curry, Michael R. "Toward a Geography of a World without Maps: Lessons from Ptolemy and Postal Codes." *Annals of the Association of American Geographers* 95, no. 3 (2005): 680-91.

For the most part, this essay is a very useful reminder that the space/place dichotomy, about which so much thought has been expended in recent decades, is itself a discursive construct. Curry turns to older understandings of *topos* (local), *choros* (region), and *geos* (earth) that he identifies (a) as varieties of "place" and (b) as being sustained through a variety of ways of knowing, storing, and communicating knowledge. This is all well and good. But, in the process, Curry sets up "the map and the data storage device" as constitutive solely of "space"; geographers must therefore discard them if they are ever to adopt more complex understandings of place otherwise obscured by an overreliance on concepts and metaphors of space. It must be observed that maps were in fact crucial elements in the discursive constitution of all three place conceptions, both in the early modern period and today: maps do not need to be discarded.

4.3. The Critical Paradigm

4.3.1: Social Implications of Digital Cartographic Technologies

Stemming in particular from Harley's critique of modern cartography, a number of scholars have engaged at length with the social implications of GIS (Geographical Information Systems/Science) and other digital technologies of relevance to modern cartography. This is a huge area that, truth be told, I have stayed away from in order to preserve my sanity! Studies of interest include, but are by no means limited to:

Pickles, John, ed. *Ground Truth: The Social Implications of Geographic Information Systems*. New York: Guilford, 1995.

A collection of ground-breaking essays that explored several aspects of the interrelations between GIS and society as a whole. Most of the essays are critical considerations of the social-ethical and discursive conditions of GIS, with the ways in which GIS inevitably promotes social inequalities even as it is staged as a necessarily neutral or inclusive, democratic phenomenon; in this, the essays extend and develop upon Harley's strong critique of modern cartographic practices. The final essay, however, is a case study of an attempt to implement a "participatory GIS" and so points to the new trajectory of a critically minded cartographic practice.

Crampton, Jeremy W. "Maps as Social Constructions: Power, Communication and Visualization." *Progress in Human Geography* 25, no. 2 (2001): 235-52.

Crampton, Jeremy W. "Cartographic Rationality and the Politics of Geosurveillance and Security." *Cartography and Geographic Information Science* 30 (2003): 135-48.

Crampton, Jeremy W. *The Political Mapping of Cyberspace*. Chicago: University of Chicago Press, 2003.

A series of studies that have asked significant questions about the interrelations of cartographic digital technologies and their fundamental politics, building on a wide range of themes from the construction of the self to the digital divide to ethical behavior to the very nature of spatial knowledge. Such a range of questions inevitably requires Crampton to draw on a number of theorists, although his primary guide is Michel Foucault and in particular the concept of power/knowledge.

§ Harris, Leila, and Mark Harrower, eds. *Critical Cartographies*. Special issue of [ACME: An International E-Journal for Critical Geographies](http://www.acme-journal.org) 4, no. 1 (2006). <<http://www.acme-journal.org>>

Several essays, each with interesting bibliographies, reviewing various elements of alternative and critical approaches to the practice of cartography. Several of the essays deal with the huge topic of "counter mapping," which is to say mapping by indigenous or other local peoples in resistance to dominant states, as well as of the social implications of GIS and digital technologies generally. Of particular relevance is Jeremy W. Crampton and John B. Krygier, "An Introduction to Critical Cartography," *ACME: An International E-Journal for Critical Geographies* <<http://www.acme-journal.org>> 4, no. 1 (2006): 11-33.

4.3.2. Spatial Construction, Spatial, Processes, Spatial Politics

Reference must also be made to the several essays in [section 5](#), on indigenous cartographies, that adopted critical perspectives as well as ethnographic perspectives to question the presumptions of the empiricist paradigm.

Rabasa, José. "Allegories of the Atlas." In *Europe and its Others: Proceedings of the Essex Conference on the Sociology of Literature, July 1984*, ed. Francis Barker et al., 2:1-16. 2 vols. Colchester: University of Essex, 1985.

Bann, Stephen. "The Truth in Mapping." *Word & Image* 4, no. 2 (1988): 498-509.

Huggan, Graham. "Decolonizing the Map: Post-Colonialism, Post-Structuralism and the Cartographic Connection." *Ariel* 20, no. 4 (1989): 115-31.

These three essays represent an initial engagement of literary and cultural studies with maps as actual artefacts rather than as metaphors for cultural practices and representations; as such, they served as a vehicle to introduce poststructuralist ideas to map historians, including Harley. Following Paul de Man, Rabasa read Mercator's *Atlas* to be an essentially ironic work, promoting an open conception of geographical knowledge within a closed format. Bann continued the ironic mode with an intriguing study of how maps can serve to undercut and subvert their ostensible truth claims. Huggan drew on the postcolonial application of mimesis as the foundation of colonial discourse, as defined by Edward Said and Homi Bhabha, to argue that the image of maps as "uniform" and "coherent" is itself a creation of colonial discourse. These are all themes which have yet to be fully explicated.

Turnbull, David. *Maps are Territories: Science is an Atlas: A Portfolio of Exhibits*. Geelong, Victoria: Deakin University, 1989. Reprinted, Chicago: University of Chicago Press, 1993.

A critical, constructivist examination of maps, mapping, and map making, in which cartography serves as a vehicle to explore broad issues in the sociology of knowledge. Its examples are drawn mostly from Australia, as it was developed there as a university text for a program in the sociology of science. In particular, the spatial experiences and conceptions of Australian Aboriginals are contrasted with those of Europeans to argue for the cultural roots of all knowledge.

See also Turnbull's *Masons, Tricksters and Cartographers: Comparative Studies in the Sociology of Scientific and Indigenous Knowledge* (Amsterdam: Harwood Academic Publishers, 2000).

Anderson, Benedict. "Census, Map, Museum." In Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism*, 163-85. 2nd (revised) ed. London: Verso, 1991.

In the revised edition of a crucial work on the idea of nations as comprising "imagined communities," using the colonial and post-colonial experience of southeast Asian nations as his case study, Anderson added this chapter to discuss three institutional mechanisms whereby communities could first be imagined and then imagine themselves. The section on maps was indebted to Winichakul's doctoral dissertation on the changing cartographies of the geobody of Thailand (later published as *Siam Mapped* [[complete reference](#)]). In addition to the question of the role of systematic topographic surveys as a tool of state control over its territory, Anderson raised the fundamentally important issue of the "logo map," the image of a territorial outline that is repeated through print and other visual media and becomes a powerful icon, if not totem, of nationality.

Pickles, John. "Texts, Hermeneutics and Propaganda Maps." In *Writing Worlds: Discourse, Text and Metaphor in the Representation of Landscape*, ed. Trevor J. Barnes and James S. Duncan, 193-230. London: Routledge, 1992.

Pickles presents a very useful critique of the empiricist ideology of modern cartography in developing a conceptual approach to propaganda maps. Of key interest is his use of hermeneutics to explore the issue of the discursive functioning of propaganda—and, indeed, all maps—through the repeated exposure of an audience to (cartographic) images and the reaffirmation and reconfiguration of existing beliefs.

Brealey, Kenneth G. "Networks of Power: Cartography as Ideology." *Western Geography* 3 (1993): 15-50.

Despite his agreement with the aims of the critical paradigm, Brealey found most of the early statements (and many since, I would add) as not dealing effectively with issues of territoriality. He accordingly argued, in large part from the work of the sociologist Michael Mann, that maps are ideological constructions. In this, Brealey is one of the first to expound a properly complex analysis of cartography as comprising sets of inherently discursive practices. Brealey works through his argument by reference to the three touchstones of the early critical paradigm: medieval *mappaemundi*, GIS, and mapping by indigenous peoples.

Edney, Matthew H. "Cartography without 'Progress': Reinterpreting the Nature and Historical Development of Mapmaking." *Cartographica* 30, nos. 2&3 (1993): 54-68.

A critique of the empiricist foundations of modern cartography and of the progressivist conception of cartography's past. This paper proposes an alternative conception of 'cartographic modes' which directs attention towards complexes of technological, social, and cultural factors in the construction and consumption of geographic/cartographic knowledge.

For an early "worked example" of cartographic modes, see also Edney, "Cartography: Disciplinary History," in *Sciences of the Earth: An Encyclopedia of Events, People and Phenomena*, ed. Gregory A. Good, 2 vols. (New York: Garland, 1998), 1:81-85.

§ Krygier, John B. "Cartography as an Art and a Science?" *The Cartographic Journal* 32 (1995): 3-10.

A succinct statement of the problems associated with the traditional dualism that cartography is at once an "art" and a "science," even though this same claim is

underpinned by an historical progression in which the “art” is progressively stripped away. In particular, the terms themselves have never been properly defined and have thus served as a smoke-screen for modern cartographic ideals. Krygier suggests that a number of approaches—all of which treat mapping as a process—offer more appropriate and valid understandings of the nature of cartography.

King, Geoff. *Mapping Reality: An Exploration of Cultural Cartographies*. New York: St. Martin's Press, 1996.

A rather frustrating text that considers the many interconnections of “mapping” and society and culture but which does not, in my opinion, really get to grips with its subject. Although King's argument is itself useful—that the map/territory relationship has *always* been arbitrary—he is insufficiently rigorous and lacks the pithy turn of phrase which would make this a quotable work.

Paulston, Rolland G., ed. *Social Cartography: Mapping Ways of Seeing Social and Educational Change*. Garland Reference Library of Social Science, 1,024; Reference Books in International Education, 36. New York: Garland, 1996.

An intriguing collection of essays that apply to a variety of phenomena the idea that “mapping”—the making sense of the world—is an ineluctably social practice and not an unproblematic technique. While there is little here of an overtly cartographic nature, although the various commentaries on Harley and others are illuminating, it demonstrates the epistemological range and power of the “mapping metaphor” as it has been used in a variety of disciplines.

“Theoretical Aspects of the History of Cartography: A Discussion of Concepts, Approaches and New Directions.” *Imago Mundi* 48 (1996): 185-205.

A suite of essays originally presented in a special session at the International Conference in the History of Cartography, Vienna, 1995, by Matthew Edney (“Theory and the History of Cartography”), Christian Jacob (“Toward a Cultural History of Cartography”), and Catherine Delano Smith (“Why Theory in the History of Cartography”). Jacob promotes a constructivist understanding of maps and geographical knowledge; Delano Smith addresses the nature of “history” and the requirement to pursue theory; Edney lays out the unrecognized theories that have shaped studies in cartographic history and also argues for a constructivist approach.

Casti, Emanuela. *Reality as Representation: The Semiotics of Cartography and the Generation of Meaning*. Trans. Jeremy Scott. Bergamo, Italy: Bergamo University Press, 2000. (Reprinted from *L'ordine del mondo e la sua rappresentazione: Semiosi cartografica e autoreferenza* [Milan: Unicopli, 1998].)

An interesting and valuable essay on the formal semiotic analysis of maps, which works through the formulation of significance through the semantics (production and accumulation of meaning), syntactics (interconnected system of communication), and pragmatics (or praxis; interpretation and use) of the map. In this, Casti builds upon and develops the post-war academic emphasis on cartographic communication to establish maps to be integral components of territorialization (the intellectual appropriation of territory). A difficult translation unfortunately contributes to the book's complexity.

§ See also Casti's "Towards a Theory of Interpretation: Cartographic Semiosis," *Cartographica* 40, no. 3 (2005): 1-16.

Woodward, David, Catherine Delano Smith, and Cordell D. K. Yee. *Plantejaments i Objectius d'una Història Universal de la Cartografia / Approaches and Challenges in a Worldwide History of Cartography*. Cicle de conferències sobre Història de la Cartografia, 11. Barcelona: Institut Cartogràfic de Catalunya, 2001.

A collection of reflective essays (all in English) on several theoretical and interpretive aspects of cartographic history: on the multi-volume *History of Cartography* project and the prospect for a "world" history of cartography; on analyzing maps as artefacts and as images; on understanding maps as social texts; and, on challenges for the future of the field. All the essays are useful and thought-provoking.

Piper, Karen. *Cartographic Fictions: Maps, Race, and Identity*. New Brunswick, NJ: Rutgers University Press, 2002.

A convincing study of the inhabitant of modern, western society as a "cartographic cyborg," which is to say as someone so thoroughly intertwined with mapping technologies that it is impossible to say, in terms of knowledge practices, where embodied knowledge ends and technological knowledge begins. Piper goes far beyond the obvious analysis of the modern dependency on maps (and GIS) as spatial instruments to consider the implications of that dependency for the construction of gendered and racial identities within popular culture.

Pickles, John. *A History of Spaces: Cartographic Reason, Mapping and the Geo-Coded World*. London: Routledge, 2004.

This is an ambitious and largely successful (in its relatively small space) attempt to integrate several strands of theory in both human geography and cartography. Very wide-ranging, it nonetheless focuses on the ideology of modern cartography rather than mapping practices in their historical variety. Pickles approaches the subject by means of a Foucauldian genealogy, tracing the

relations among institutions, discourses, and practices to discern the multiple constructions of modern cartography. In the process, Pickles reviews a great deal of the work that has been accomplished on the concepts of maps and cartography.

§ Del Casino, Vincent J., Jr., and Stephen P. Hanna. “Beyond the ‘Binaries’: A Methodological Intervention for Interrogating Maps as Representational Practices.” *ACME: An International E-Journal for Critical Geographies* <<http://www.acme-journal.org/>> 4, no. 1 (2006): 34-56.

This important essay makes a strong case for avoiding the traditional binary oppositions that haunt conceptions of cartography. To name just three such binaries, the authors point out that if we accept that the meaning of a map is reestablished each time it is read, then it becomes impossible to draw a hard and fast line between map production and consumption, author and reader, and most importantly representation and practice. Del Casino and Hannah therefore present a view of cartography as inherently “messy.” In the process they begin to deal with the “non-representational theory” advocated by Nigel Thrift and suggest several significant limitations.

Jacob, Christian. *The Sovereign Map: Theoretical Approaches in Cartography throughout History*. Trans. Tom Conley. Ed. Edward H. Dahl. Chicago: University of Chicago Press, 2006. [Originally published as *L’Empire des cartes: Approche théorique de la cartographie à travers l’histoire* (Paris: Bibliothèque Albin Michel, 1992).]

A compelling and poetic reconsideration of the nature of maps and their history. Jacob takes nothing for granted, not even the practices of map folding, in order to apply a truly fresh eye to these all-too-familiar and seemingly mundane images. (He properly describes his approach as phenomenological in nature.) In the process, he covers extensive intellectual ground, from Aristophanes to Jules Verne, from the Museum at Alexandria to modern national mapping agencies. The result is a multilayered vision of the architecture, rhetoricity, materiality, and plasticity of maps and of the rhythms and discontinuities of their history.
Essential reading.

5. Indigenous Cartographies

A key component in the critique of the modern, empiricist paradigm of cartography has been the attempt to understand mapping practices in non-western cultures. Much of the work has been undertaken in an anthropological vein, studying indigenous cartographies on their own terms. However, much has also been done to compare different cartographic cultures explicitly. A further element of special interest to historians of discovery as well as to cultural and cartographic historians, is the analysis of western/indigenous contact processes and their effects on knowledge and maps; this is especially important because most indigenous

cartographic materials have survived only through the contact process. There is a growing literature, especially with regard to North American contexts, which cannot be listed here in its entirety. Instead, I provide what I think are the most significant essays, especially in terms of our theoretical understanding of maps and map making, and the bibliographic entry points.

*Reference must also be made to the first two volumes (i.e., four books) of **The History of Cartography** [[complete reference](#)], Turnbull's **Maps are Territories** [[complete reference](#)], and Mundy's **Mapping of New Spain** [[complete reference](#)].*

De Vorsey, Louis, Jr. "American Indians and the Early Mapping of the Southeast." In William P. Cumming, *The Southeast in Early Maps*, 65-98. 3rd ed. Chapel Hill: University of North Carolina Press, 1998.

This general overview of the interactions between English colonists and indigenous peoples, in the area south of Virginia, includes a useful list of diagnostics for identifying indigenous information in European maps.

Harley, J. B. "New England Cartography and the Native Americans." In *American Beginnings: Exploration, Culture, and Cartography in the Land of Norumbega*, ed. Emerson W. Baker *et al.*, 287-313. Lincoln: University of Nebraska Press, 1994. Reprinted in *The New Nature of Maps*, 169-95.

Harley, J. B. "Rereading the Maps of the Columbian Encounter." Ed. Karl W. Butzer and William M. Denevan. *Annals of the Association of American Geographers* 82 (1992): 522-36.

Two posthumously published essays on the interactions of indigenous peoples and European adventurers and settlers. Both are primarily concerned with the ideological character of European mapping practices, but both also address issues of "native resistance" to the European imposition on, and appropriation of, the Americas.

Lewis, G. Malcolm, ed. *Cartographic Encounters: Perspectives on Native American Mapmaking and Map Use*. Chicago: University of Chicago Press, 1998.

A fundamental problem in studying Native American map making is that few "pure" artefacts have survived; almost all indigenous maps were either produced at the behest of, or were collected by, Europeans. The study of Native American map making is thus inseparable from the conditions and circumstances of the "encounter" between Europeans and Native Americans. These essays, most originating in the 1993 Nebenzahl lectures, include an extensive bibliographic review.

Orlove, Benjamin. "Mapping Reeds and Reading Maps: The Politics of Representation in Lake Titicaca." *American Ethnologist* 18, no. 1 (1991): 3-38.

Orlove, Benjamin. "The Ethnography of Maps: The Cultural and Social Contexts of Cartographic Representation in Peru." *Cartographica* 30, no.1 (1993): 29-46.

These essays direct attention not only to the socially induced differences in map function, map production, and map use, but also to what Orlove calls the "ethnography" of map reading. His particular study analyzes the differences between the cartographic culture and practices of Andean peasants and Peruvian bureaucrats. These are two wonderful essays to bring home the idea of differing cultural expectations about the nature of maps.

Rundstrom, Robert A. "Mapping, Postmodernism, Indigenous People, and the Changing Direction of North American Cartography." *Cartographica* 28, no. 2 (1991): 1-12.

A key essay in using the lessons posed by an understanding of indigenous cartographies to criticize and re-examine western cartographies. Of particular relevance is Rundstrom's distinction between "inscriptive" and "incorporative" cultures and the implications for the understanding of the representation of spatial knowledge in each.

6. Cartobibliography

*A fundamental component of research in the history of cartography is the comprehensive "cartobibliography." Although often misunderstood as the preserve of obsessive librarians and scholar-collectors, detailed listings of maps are essential for understanding the full scope of any research project. Published cartobibliographies are mostly organized by region or by archival collection, but some focus on the work of an individual cartographer or a period of map production. Robert Karrow has compiled [an extensive and very useful bibliography of cartobibliographies](#). Reference might also be made to Karrow's "The Role of Cartobibliography in the History of Cartography," *Bulletin of the Association of Canadian Map Libraries*, no. 57 (1985): 1-13. Three works demonstrate the high level of scholarship that can be achieved in cartobibliography:*

Cumming, William P. *The Southeast in Early Maps*. Ed. Louis De Vorsey, Jr. 3rd ed. Chapel Hill: University of North Carolina Press, 1998.

A classic work, newly updated by the present expert on the mapping of the American Southeast. De Vorsey has added those maps that have come to light since the second edition (published in 1962), has expanded the references and illustrations, and has incorporated new research into the map descriptions. More importantly, he has added an essay on the interactions between Native Americans and colonial settlers, and the significance of those interactions for the construction of geographical information. A key element in Cumming's initial plan for the work was the inclusion of both manuscript and printed maps.

Karrow, Robert W. *Mapmakers of the Sixteenth Century and Their Maps: Bio–Bibliographies of the Cartographers of Abraham Ortelius, 1570*. Chicago: Speculum Orbis Press for The Newberry Library, 1993.

Now *the* starting point for any research into any of the map makers whose work was used for the first edition of the first ‘modern atlas’: Ortelius’s *Theatrum Orbis Terrarum* (1570). It includes a thorough bibliography of the secondary literature and is very well indexed. This work defines the standard for all new biographical dictionaries and cartobibliographical studies in the history of cartography.

Krogt, Peter van der. *Koeman’s Atlantes Neerlandici*. 10 vols. ’t Goy-Houten, Netherlands: HES Publishers, 1997- .

This work extensively revises Cornelis Koeman’s *Atlantes Neerlandici* (1967-71) and provides a thorough bibliographic analysis of atlases published in the Netherlands and of their constituent maps. It establishes the standard for understanding the complex publication history of early-modern atlases.

7. Significant or Suggestive Works on Cartographic History

*This section comprises an admittedly idiosyncratic list of those works—in addition to those mentioned above—which I think are significant because they have expanded the scope of the field, have provided new insights, have proven useful in my teaching, or seem to me to be exemplary models for doing cartographic history. The list is rather overwhelming, so I have organized it by topical category. Please note, however, that these categories are **not** mutually exclusive and all should be reviewed.*

7.1. General Studies in Cartographic History

§ Akerman, James R., ed. *Cartographies of Travel and Navigation*. Chicago: University of Chicago Press, 2006.

The published essays from the 1996 Nebenzahl Lectures reconsider the relationships of navigation and travel to mapping. The empiricist paradigm rests, of course, on the belief that maps are functional and that their function is to guide people through space. These essays consider both the manner in which maps have—and have not—contributed to travel and navigation (according to period and technology) and also the significance of maps overtly intended for travel for other aspects of human life.

Of especial importance is Catherine Delano Smith’s opening chapter, “Milieus

of Mobility,” which reexamines the functional and social interconnections between mobility, itineraries, and maps.

Buisseret, David, ed. *From Sea Charts to Satellite Images: Interpreting North American History through Maps*. Chicago: University of Chicago Press, 1990.

A very useful collection of brief essays on different genres of old maps of relevance to U.S. and Canadian history. Each essay lays out how historians can interpret those maps and each provides several examples. In the introduction —“Text and Contexts in the Interpretation of Early Maps” (3-15), reprinted in Harley, *New Nature of Maps* (33-49)—J. B. Harley blended the empiricist principles of internal and external map criticism (see [section 4.1](#)) with his more recent forays into iconography and Foucauldian philosophy; the result is a compelling argument to treat maps as cultural documents, but one that was actually at odds with the general state of his theoretical concerns (see [section 4.5](#)).

Casey, Edward S. *Representing Place: Landscape Painting and Maps*. Minneapolis: University of Minnesota Press, 2002.

A wide-ranging excursus by a philosopher on the representation of “place” and on the intersections of landscape imagery and topographical mapping. Although very much rooted in the early modern era, it has much of relevance for later topographical imagery. The one objection to Casey's approach is that he considers the modern cartographic ideal (topographical mapping is the epitome and exemplar of cartography) to be an historical and cultural universal.

Cosgrove, Denis. *Apollo's Eye: A Cartographic Genealogy of the Earth in the Western Imagination*. Baltimore: Johns Hopkins University Press, 2001.

An ambitious and rewarding history of the (often competing) symbolic meanings of the globe, and of globalism, in European culture, as emblems of knowledge, power, profanity, and terrestrial and human unity. That is, this is a book about the image of the globe, and not about globes themselves. Most of the book addresses early modern Europe, with chapters on the mobilization of globes in poetry, in religion, and as emblems, etc.; the three final chapters cover the eras after 1700.

Cosgrove, Denis, ed. *Mappings*. London: Reaktion Books, 1999.

An important collection of essays which focus on the graphic constitution of spatial knowledge—on “acts of visualizing, conceptualizing, recording, representing and creating spaces”—in the European cultural tradition, from ancient Alexandria to the twentieth century. Although the essays' different

cultural and social contexts give little common ground between the essays, they all are fundamentally concerned with the aesthetics of graphic understanding. The result is a rich celebration of the complexity and variety of “mapping.”

Harvey, P. D. A. *The History of Topographical Maps: Symbols, Pictures and Surveys*. London: Thames and Hudson, 1980.

Harvey’s central concern is with the formation of what is recognized today as a map: constructed to scale from an abstract perspective (the “view from nowhere”). To trace the development of this concept from prehistory to the early modern era, Harvey adapted Denis Wood’s structuralist sequencing of relief depiction (profile, oblique, plan) to write a broad-brush macro-history of topographic maps as developing from symbols to pictures to surveys. For the time it was written, Harvey considered a truly wide range of materials from across human cultures. The result is a remarkable, if not entirely convincing, study.

7.2. Maps, Trade, and Consumption

§ Delano Smith, Catherine. “For Whom the Map Speaks: Recognising the Reader.” In *Mappæ Antiquæ: Liber Amicorum Günter Schilder. Essays on the occasion of his 65th birthday*, ed. Paula van Gestel-van het Schip and Peter van der Krogt, 627-36. ’t Goy-Houten, Neth.: HES & De Graaf Publishers, 2007.

§ Delano Smith, Catherine. “Map Ownership in Sixteenth-Century Cambridge: The Evidence of Probate Inventories.” *Imago Mundi* 47 (1995): 67-93.

Two studies—complemented by Delano Smith’s essays on “maps and map literacy” in Woodward, Delano Smith, and Yee, *Plantejaments i Objectius d’una Història Universal de la Cartografia* (2001) [[full ref](#)]¹—that direct our attention to the reader and consumer of maps, and especially the cheaper “small maps” that more people would have seen than the large and ornate works of high art that historians of cartography tend to emphasize.

§ Groot, Erlend de. *The World of a Seventeenth-Century Collector: The Atlas Blaeu-Van der Hem*. Trans. Andrew McCormick. Vol. 7 of Peter van der Krogt and Erlend de Groot, *The Atlas Blaeu-Van der Hem of the Austrian National Library: Descriptive Catalogue*. ’t Goy-Houten: HES & De Graaf, 2006.

This is a fascinating and thorough analysis, undertaken as a doctoral dissertation in art history, of the life and work of one collector who assembled a stupendously large atlas. There is a desperate need for more such substantial studies, and not only of remarkable collectors, to explore the world of consumption. The world of “small” maps and small collectors needs to be

examined to understand the social and geographical reach of cartographic imagery in different periods.

Mukerji, Chandra. "A New World-Picture: Maps as Capital Goods for the Modern World System." In Mukerji, *From Graven Images: Patterns of Modern Materialism*, 79-130. New York: Columbia University Press, 1983.

In her analysis of the co-evolution of ascetic capitalism and hedonistic consumerism in early modern Europe, Mukerji uses printed maps, charts, and geographical texts as her example of "capital goods" which served to promote overseas trade and state formation, two of the three basic elements identified by Immanuel Wallerstein as turning western Europe into the stable platform of the capitalist "world system." In this, Mukerji extended the (to my mind dubious) arguments of Marshall McLuhan and Elizabeth Eisenstein on the social effects of print. It must also be noted that Mukerji treats maps as entirely instrumental devices and does not really consider their simultaneous function as consumer goods.

Pedley, Mary. *The Commerce of Cartography: Making and Marketing Maps in Eighteenth-Century France and England*. Chicago: University of Chicago Press, 2005.

The financial and commercial aspects of cartography have been the subject of a great deal of precise, empirical research: in these published versions of her 2001 Nebenzahl Lectures, Pedley brings much of that work together in an amazing and well-written synthesis covering English and French cartography in the eighteenth century. (There is a new chapter for the book, following through the preparation of Blaskowitz's map of Narragansett Bay and its derivatives as a case study in cost and consumption.) This is required reading for anyone interested in the economic underpinnings of cartography.

Woodward, David. *Maps as Prints in the Italian Renaissance: Makers, Distributors & Consumers*. Panizzi Lectures, 1995. London: The British Library, 1996.

This small work is noteworthy for the serious consideration it gives to the place of consumption and fashion in driving not only the market for printed maps, but also the form and content of those maps. It also exemplifies the end to which detailed artefactual analysis should be directed, specifically the understanding of the conditions and processes of map or book production.

7.3. Maps and Constructed Images of Place, Space, and Identities

Conley, Tom. *The Self-Made Map: Cartographic Writing in Early Modern France*. Minneapolis: University of Minnesota Press, 1996.

Conley expands our approach to early modern cartography by matching the then inherently spatial form of printed text to the inherently textual nature of spatial representations. His particular concern is to trace the interrelations between the dramatic rise in mapping practices in the 1500s, the development of spatial representations, and the formation of the sense of self which so clearly defines modernity.

Del Casino, Vincent J., Jr., and Stephen P. Hanna. "Representations and Identities in Tourism Map Spaces." *Progress in Human Geography* 24, no. 1 (2000): 23-46.

A pioneering, critical study of the tourist map and its objectification of the exotic, the spectacular, and the mundane for the consumption of the tourist. Its case study of maps of the Bangkok sex trade raises some intriguing parallels between the mapping of land and the mapping of bodies.

See also Stephen P. Hanna and Vincent J. Del Casino, Jr., eds., *Mapping Tourism* (Minneapolis: University of Minnesota Press, 2003). Their introduction and final chapter recast the earlier article; the other chapters address the construction of "tourism spaces" generally and do not have much to say directly about maps.

§ Edwards, Jess. *Writing, Geometry and Space in Seventeenth-Century England and America: Circles in the Sand*. Routledge Studies in Renaissance Literature and Culture, 5. London: Routledge, 2006.

Edwards is concerned less with actual maps and mapping practices as he is with the traces of geographical mapping and land surveying in early modern English literature. This is a cultural history of the *image* of the mapmaker and surveyor, in their studies and the field, in plays, poems, and manuals. A recurrent theme is the role of authorial self-fashioning and professional promotion. Edwards is not really able to connect the two modes of geographical and property mapping, reaffirming their general separation in the historical record. The first chapter provides a very useful overview of recent trends in the history of cartography.

Francaviglia, Richard V. *The Shape of Texas: Maps as Metaphors*. College Station, TX: Texas A&M University Press, 1995.

This small book explores the iconic role of the outline of Texas. Francaviglia examines all sorts of popular cartography, from road signs to belt buckles, in order to demonstrate the meaning and 'naturalness' with which we imbue our human-made regions. This should be read in conjunction with Anderson's commentary on map logos [[complete reference](#)].

§ Lane, K. Maria D. "Geographers of Mars: Cartographic Inscription and Exploration

Narrative in Late Victorian Representations of the Red Planet.” *Isis* 96 (2005): 477-506.

§ Lane, K. Maria D. “Mapping the Mars Canal Mania: Cartographic Projection and the Creation of a Popular Icon.” *Imago Mundi* 58, no. 2 (2006): 198-211.

A pair of studies that elucidate wonderfully the manner in which the technologies of compiling geographical maps were applied to turn multiple telescopic observations of precise portions of the surface of Mars into the mythic system of canals. Lane places this intellectual phenomenon within a popular mania and anxiety about the possibility of advanced life on Mars.

Schulten, Susan. *The Geographical Imagination in America, 1880-1950*. Chicago: University of Chicago Press, 2001.

In the first critical approach to the popular/mass cartography in the U.S.A. in the nineteenth and twentieth centuries, Schulten explores the relationship between geographical education, mapping, and the popular images of the world held by Americans. The focal point of her study is the shift in American geopolitical perceptions from isolationism to taking center-stage in world politics after 1940.

Wolff, Larry. *Inventing Eastern Europe: The Map of Civilization on the Mind of the Enlightenment*. Stanford: Stanford University Press, 1994.

An exploration of how western Europe configured and reconfigured “Eastern Europe” in the eighteenth century. Cartographic representation played a significant role in constructing the new divide between east and west (which replaced the older divide between north and south Europe).

§ Wood, Denis, and John B. Krygier, eds. *[Art and Cartography]*. Special Issue of *Cartographic Perspectives*, no. 53. n.p.: North American Cartographic Information Society, 2006.

A suite of articles that draw intriguing and novel connections between maps and art. Indeed, these are the first essays I’m conscious of having read that consider the intersections of maps and art by engaging with the ideologies of “map” and “art.”

§ For a slightly different take, refer also Janet Abrams and Peter Hall, eds., *Else/Where: Mapping. New Cartographies of Networks and Territories* (Minneapolis: University of Minnesota Press for the University of Minnesota Design Institute, 2006).

Yonemoto, Marcia. *Mapping Early Modern Japan: Space, Place, and Culture in the Tokugawa Period (1603-1868)*. Berkeley: University of California Press, 2003.

A fascinating study of a non-western cartographic culture, specifically one in which geographical maps permeated several literary genres (gazetteers, travel literature, satirical fiction, etc.). This work is an important example of the cultural analysis of the significance of geographical mapping within print culture (like Helgerson) rather than within governmental administration (like Winichakul [complete reference](#)), and of the blurring of the categories of “map” and “writing.”

§ See also Yonemoto’s “Silence Without Secrecy? What is Left Unsaid in Early Modern Japanese Maps,” *Early Modern Japan: An Interdisciplinary Journal* 14 (2006): 27-39.

7.4. Urban Mapping: Imagining Cities

Gilbert, Pamela K. *Mapping the Victorian Social Body*. Albany: State University of New York Press, 2004.

No-one interested in modern urban cartography—and more generally the construction of space and community—should miss this work. Gilbert’s interest is in the British mapping related to cholera epidemics in nineteenth-century London and British India (and not only Dr. Snow’s famous—and contested—1855 map of the 1854-55 London outbreak), mapping that influenced Charles Dickens’s conceptions of metropolitan society and that significantly shaped British conceptions of themselves and of Indians as a distinctly different other. Overall, this is a very successful integration of literary and cartographic histories.

Kagan, Richard L. “*Urbs* and *Civitas* in Sixteenth- and Seventeenth-Century Spain.” In *Envisioning the City: Six Studies in Urban Cartography*, ed. David Buisseret, 75-108. Chicago: University of Chicago Press, 1998.

Kagan provides a crucial framework for the analysis of early modern city views and maps. He argues that spatial representations actually fall within four groups defined by the perspective of the maker (whether internal or external to the city) and by the particular conception of the city being represented (whether *urbs*, the built environment, or *civitas*, the community). This framework allows us to interrelate spatial representations to other strategies for representing cities, ranging from holy-day parades to portraiture. With respect to more modern imagery, Kagan’s work reminds us that representations of entire cities are as much about community as the urban fabric.

Kagan returned to these issues in the introduction of his *Urban Images of the Hispanic World, 1493-1793* (New Haven, CT: Yale University Press, 2000).

Schein, Richard H. “Representing Urban America: 19th-Century Views of Landscape, Space, and Power.” *Environment and Planning D: Society & Space* 11 (1993): 7-21.

A tightly argued and compelling essay that examines the late-nineteenth-century “bird’s-eye views” of industrial cities in the U.S.A. in terms of their construction of idealized conceptions of community and their almost naked claim to be empowering, truthful imagery. I have had great success teaching this article in conjunction with John F. Kasson, *Rudeness & Civility: Manners in Nineteenth-Century Urban America* (New York: Hill and Wang, 1990), esp. 70-80. (Schein’s arguments are not necessarily relevant for similar views of non-industrial cities.)

7.5. Cartography and the (Early) Modern State

§ Biggs, Michael. “Putting the State on the Map: Cartography, Territory, and European State Formation.” *Comparative Studies in Society and History* 41, no. 2 (1999): 374-405.

This is a useful and broad summary of the mapping by European states of their territories before 1815. Very importantly, Biggs argues that maps are not just “ruses of power” (as in the “hard” critique of cartography: [section 4.2.5](#)), but that they are conceptual devices that configure the way we think about the world and its divisions, and in particular the “state.” However, Biggs gives too much credence to the modern cartographic ideal, so that he is able for example to compare small-scale regional maps of the fifteenth and sixteenth centuries with much larger-scale topographical surveys carried out by the eighteenth-century French and their emulators.

Buisseret, David, ed. *Monarchs, Ministers, and Maps: The Emergence of Cartography as a Tool of Government in Early Modern Europe*. Chicago: University of Chicago Press, 1992.

The quality of the essays in this volume is variable, as is the conception of government (king or bureaucracy?). Nonetheless, this collection opened up a whole new arena of historical research. Of special note are Barber’s meticulously referenced essays on the English bureaucracy and Vann’s unfortunately brief essay on the territorial conceptions of the Austrian Habsburg empire.

Buisseret returned to the basic theme of this book—why map use expanded so significantly between 1400 and 1800—in his *The Mapmaker’s Quest: Depicting New Worlds in Renaissance Europe* (Oxford: Oxford University Press, 2003).

Craib, Raymond B. *Cartographic Mexico: A History of State Fixations and Fugitive Landscapes*. Durham, N.C.: Duke University Press, 2004.

Craib pursues a two-pronged investigation into the role of maps in the formation of an independent Mexican state in the nineteenth and twentieth centuries. First, at the geographical scale, he explores the fixation of federal and state authorities on rationalizing their knowledge of the country, with delineating state boundaries, and with emplacing every locality on the map of the country; integral to this fixation was the deployment of geographical maps to represent the entire country in the ongoing public negotiations about the country's nature and national identity. Second, Craib explores the role of the surveying and mapping in agrarian reform and the rationalization of overlapping jurisdictions and property rights; this section explores the role of the farmers and landlords in contesting state authority and its spatial rationalization and, in so doing, shaping the state's knowledge of itself.

Hannah, Matthew G. *Governmentality and the Mastery of Territory in Nineteenth-Century America*. Cambridge Studies in Historical Geography, 32. Cambridge: Cambridge University Press, 2000.

Hannah employs Foucault's late idea of governmentality—the negotiation of state power over entire territories and their populations, rather than individuals, by means of the social sciences and social policy—to understand the rise of social and geographical investigation, the census, and thematic mapping in the nineteenth-century U.S.A. This is an important work in delineating the contribution of cartography to the modern state as well as the inherent limits to such contributions.

Kain, Roger J. P., and Elizabeth Baigent. *The Cadastral Map in the Service of the State: A History of Property Mapping*. Chicago: University of Chicago Press, 1992.

An innovative and wide-ranging analysis of state-sponsored, very large-scale, property mapping. Kain and Baigent explore the taxation and land registration systems of western and northern Europe, together with their early colonies. They do not provide much comparative analysis, but their work is highly suggestive: comparisons between apparently similar states reveal strikingly dissimilar reasons and styles of cadastral mapping; similar forms of mapping were undertaken by institutionally dissimilar states.

§ Kivelson, Valerie A. *Cartographies of Tsardom: The Land and its Meanings in Seventeenth-Century Russia*. Ithaca, N.Y.: Cornell University Press, 2006.

Kivelson discards the habitual treatment of seventeenth-century Russian cartography as poorly developed, incomplete, and destined to be replaced by the “scientific” reforms initiated by Peter the Great. In particular, she explores two cartographic modes—the high-resolution mapping of real and human property in the Russian heartland and the low-resolution mapping of Siberia and its peoples by Semen Remezov and other agents of the Russian empire—as

manifestations of the distinct character of the Russian state and of the Orthodox faith. In the process, Kivelson reveals the Muscovite empire to have been a complex layering of territories and responsibilities in which serfs and indigenous peoples were tied directly to certain districts, with mapping playing an important role in this process.

Konvitz, Josef W. *Cartography in France, 1660-1848: Science, Engineering, and Statecraft*. Chicago: University of Chicago Press, 1987.

A pioneering study of the interrelations between different arenas of cartographic activity—systematic surveys, territorial reorganization, hydrography, engineering surveying, and thematic mapping—and their intersections with government and state administration. Konvitz’s particular concern was to locate improvements in cartographic technology during a very long eighteenth century not in some innate characteristic of cartography but in the particular and various needs of the French state.

Winichakul, Thongchai. *Siam Mapped: A History of the Geo-Body of a Nation*. Honolulu: University of Hawaii Press, 1994.

In this very important, influential, and detailed analysis of cartographic cultural imperialism, Winichakul examines how the Thai state promulgated the Western conception of space—displacing traditional Siamese conceptions in discursive arenas controlled by the state—in order to construct a national territory that would resist, ideologically, the territorial encroachments by the British and French empires during the nineteenth century.

§ See also Winichakul’s “The Quest for ‘Siwilai’: A Geographical Discourse of Civilizational Thinking in the Late Nineteenth and Early Twentieth-Century Siam,” *Journal of Asian Studies* 59, no. 3 (2000): 528-49.

7.6. Colonial and Imperial Cartographies 1: Early Modern Period

Hotstetler, Laura. *Qing Colonial Enterprise: Ethnography and Cartography in Early Modern China*. Chicago: University of Chicago Press, 2001.

Hotstetler examines the intersections of cartographic and ethnographic representation in the particular context of the consolidation of Qing (Manchu) China’s control over the interior southern province of Guizhou in the eighteenth century. At the center of this effort were the surveys undertaken by Jesuit missionaries, surveys which are often interpreted as indicating China’s cartographic dependence upon Western models of map making. But Hotstetler deftly argues that these surveys, in origin and form, were essentially Chinese undertakings intended to create a sense of national, “Chinese” identity.

Mignolo, Walter D. *The Darker Side of the Renaissance: Literacy, Territoriality, and Colonization*. Ann Arbor: University of Michigan Press, 1995.

An intriguing exploration of the interconnections of literature and map in the representation of the Spanish empire in the Americas. Some of Mignolo's assertions with respect to early modern cartography need to be read judiciously; his overall approach complements Helgerson. See Padrón, below [[complete reference](#)].

Mundy, Barbara E. *The Mapping of New Spain: Indigenous Cartography and the Maps of the Relaciones Geográficas*. Chicago: University of Chicago Press, 1996.

A tremendous study of colonial cartography “on the ground.” The Spanish government sent out requests for geographical information; it received a series of texts and maps that reveal a complex, syncretic society. None of the maps were purely indigenous or European in form or content, but all entailed hybridized representations. A key study for breaking out of the emphasis on the metropolitan mapping of empires.

Padrón, Ricardo. *The Spacious Word: Cartography, Literature, and Empire in Early Modern Spain*. Chicago: University of Chicago Press, 2004.

Padrón narrates the slow process whereby the Spanish came to write and comprehend—through textual accounts and in maps—their possessions in the Americas. His particular interest is in the concepts of space that circulated through geographically informed discourses, of plays and poetry, as well as maps and actual geographies, exploring how they informed and shaped and reconfigured one another. That is, Padrón has undertaken a careful and detailed analysis of a particular spatial discourse; his conclusions have weight and power. Of special interest is his argument that the modern, singular idea of “map” develops through the process of comprehending the New World.

7.7. Colonial and Imperial Cartographies 2: Modern Period

§ Bia•as, Zbigniew. *Mapping Wild Gardens: The Symbolic Conquest of South Africa*. Englischsprachige Literaten Afrikas / African Literatures in English, 13. Essen: Verlag Die Blaue Eule, 1997.

This intellectually rewarding study by a literary scholar of the interrelations of mapping and imperialism in a “failed” settler colony deserves much wider readership among historians. Bia•as sees imperialist cartography as an exercise in wish-fulfillment in which fantasies are projected and, to varying degrees, made real. The work is motivated by scholarship in literature (e.g., Paul Carter

and Graham Huggan), politics (e.g., Benedict Anderson), and philosophy (e.g., Michel Foucault) rather than by historians of cartography, who are conspicuous by their absence from the bibliography; in this regard, it exemplifies the general academic trend towards an appreciation of the cultural complexity of mapping practices.

Burnett, D. Graham. *Masters of All They Surveyed: Exploration, Geography, and a British El Dorado*. Chicago: University of Chicago Press, 2000.

This wonderfully written work is a critical study of the role of the “explorer,” a mythic figure in the history of European overseas expansion. Drawing on the work of Carter, Edney, and Winichakul, Burnett explores the nineteenth-century mapping of British Guiana as the layering of multiple myths atop a base stratum formed by the early modern legend of “El Dorado.” An historian of science, Burnett successfully incorporated art history as well as cartographic history to produce an excellent interdisciplinary book.

Carter, Paul. *The Road to Botany Bay: An Essay in Spatial History*. London: Faber and Faber, 1987; New York: Alfred A. Knopf, 1988; Chicago: University of Chicago Press, 1989.

This brilliant work was initially swamped by the other books marking Australia’s centenary, but has since gained a loyal following. Carter introduces the idea of “spatial history” as an antidote to the prevailing mode of “imperial history”; that is, land is not a static and unproblematic arena within which history unfolds, but rather the shifting configurations of the land in texts, graphics, and cartographics has a history in its own right, a history which undermines the mythic ideologies of regular history.

See also Carter’s *The Lie of the Land* (London: Faber and Faber, 1996).

DeRogatis, Amy. *Moral Geography: Maps, Missionaries, and the American Frontier*. New York: Columbia University Press, 2003.

A careful study of Connecticut’s Western Reserve, in present-day Ohio, during the Early Republic, when the settlers and Congregationalist ministers on the frontier and the community leaders back East all equated a well-ordered, regularly surveyed, and productive landscape with Protestant morality. DeRogatis thus outlines a significant religious and moral component to the rectangular land surveys that would partition the American West, in addition to the Enlightened rationality more commonly ascribed to them.

Edney, Matthew H. *Mapping an Empire: The Geographic Construction of British India, 1765–1843*. Chicago: University of Chicago Press, 1997.

This was the first detailed analysis of a state-sponsored survey from a critical perspective. In the process, Edney outlined the role of mapping and surveying in defining both the territorial and ethical conceptions of the British empire in India; he also examined the shifting technologies of large-scale surveying—and specifically the adoption of triangulation—between the eighteenth and nineteenth centuries.

§ Stone, Jeffrey C. “Imperialism, Colonialism and Cartography.” *Transactions of the Institute of British Geographers* ns 13 (1988): 57-64.

In this generally overlooked essay, Stone revisits the fabled moment of the empiricist historical narrative, when Enlightenment consolidated cartography as a science. This process is often expressed through the mapping of Africa: the pre-1700 habit of littering Africa’s interior with icons of elephants and lions gave way to a scientific respect for blank spaces. But Stone demonstrates that this was merely an aesthetic shift and that traditional forms of European imperialism and mapping continued right up until the 1880s and the partition of the continent. Only with active colonialism did Europeans engage in detailed surveys, which were over overwhelmingly focused on cadastral concerns.

7.8. Cartography and Nationalism

§ Brückner, Martin. 2006. *The Geographic Revolution in Early America: Maps, Literacy, and National Identity*. Chapel Hill: University of North Carolina Press for the Omohundro Institute of Early American History and Culture.

An complex study of the educational use of maps to overcome the disparities between the colonies and instead congeal a national “American” identity in the fledgling United States. This process further underpinned the development of an autonomous U.S. tradition of geographical expression in maps and texts. A significant component is Brückner’s discussion of the word-maps formed from movable type and included within educational texts in lieu of expensive copper-engraved maps.

Helgerson, Richard. *Forms of Nationhood: The Elizabethan Writing of England*. Chicago: University of Chicago Press, 1992.

This break-through text demonstrated the multiple links between mapping and other representational strategies. Helgerson examines poetry, legal treatises, plays, religious tracts, political economy, maps, and geographical accounts in a complex account of the construction of “Englishness” (Court vs. country; England vs. Europe; Modern vs. Ancients, etc.) in Tudor and early Stuart England. This work contributed substantially to the proliferation of interest in maps among scholars of early modern literature.

Herb, Guntram Henrik. *Under the Map of Germany: Nationalism and Propaganda, 1918–1945*. London: Routledge, 1997.

Herb addresses the role of mapping in constructing a German sense of national territory after the division of the empire in 1918. The ideological delimitation of the “true” German nation-state permeated all shades of political discourse, not just that associated with the National Socialists. It was so prevalent that it underscored the formation of an “objective” and “scientific” discipline of cartography.

See also Herb’s “Persuasive Cartography in *Geopolitik* and National Socialism,” *Political Geography Quarterly* 8, no. 3 (1989): 289-303.

§ Ramaswamy, Sumathi. *The Lost Land of Lemuria: Fabulous Geographies, Catastrophic Histories*. Berkeley: University of California Press, 2004.

A crucial study of the very strategic mappings by Tamils in southern India of “Lemuria”—a landmass that nineteenth-century scientists supposed to have anciently reached across the Indian Ocean in order to explain the distribution of marsupials—as the ancient homeland of the Tamil people and the site of their great historical sagas. As such, these maps became a focal point of Tamil identity and resistance to the cultural dominance of northern Indians.

§ See also Ramaswamy’s “Catastrophic Cartographies: Mapping the Lost Continent of Lemuria,” *Representations*, no. 67 (1999): 92-129, and “History at Land’s End: Lemuria in Tamil Spatial Fables,” *Journal of Asian Studies* 59, no. 3 (2000): 575-602.

§ Ramaswamy, Sumathi. “Maps and Mother Goddesses in Modern India.” *Imago Mundi* 53 (2001): 97-114.

§ Ramaswamy, Sumathi. “Visualising India’s Geo-Body: Globes, Maps, Bodyscapes.” *Contributions to Indian Sociology* 36, no. 1 and 2 (2002): 151-189.

§ Ramaswamy, Sumathi. “Enshrining the Map of India: Cartography, Nationalism, and the Politics of Deity in Varanasi.” In *Visualizing Space in Banaras: Images, Maps, and the Practice of Representation*, ed. Martin Gaenzle and Jörg Gengnagel, 165-88. Wiesbaden: Harrassowitz Verlag, 2006.

Important studies of how independence and postcolonial movements adopted logo maps of South Asia created by the British and adapted them to the needs of Hindu cultural forms and Indian nationalism. In this respect, these essays constitute a crucial supplement to Benedict Anderson’s explication of logo maps and nationalism [[complete reference](#)].

Withers, Charles W. J. *Geography, Science and National Identity: Scotland since 1520*. Cambridge Studies in Historical Geography, 33. Cambridge: Cambridge University Press, 2001.

A wide-ranging study examining the role of geographical knowledge—including mapping—contributed to the identity and significance of Scotland as a distinctive and coherent place and of the Scots as a “nation.” Withers’s particular interest is in the several geographical discourses—especially within the “public sphere” (chaps. 3 and 4) and nineteenth-century British imperialism (chap. 6)—which yoked the geographical specialist to much wider audiences.

8. Suggestions for an Initial Reading List

A first assault on the literature might comprise the following works:

Harley, “The Map and the Development of the History of Cartography” (to understand the history of the field). [[complete reference](#)]

Harley, “Maps, Knowledge, and Power.” [[complete reference](#)]

“Theoretical Aspects of the History of Cartography” *Imago Mundi* (1996). [[complete reference](#)]

Wood, *The Power of Maps*, esp. chapters 2 (social complexity and cartography), 3 (conventional nature of maps), and 5 (pp. 95-107, on a strategy for reading maps). [[complete reference](#)]

Turnbull, *Maps are Territories*. [[complete reference](#)]

9. Bibliographic Tools Useful for the History of Cartography

Researchers will find pertinent works, in addition to those already listed in this document—and in addition to the further works that they, in turn, cite—by means of a variety of bibliographic tools.

9.1. Specialized Bibliographies (Print)

*Researchers should consult the remarkable trove of information in the notes and listings found in the works in [section 1](#), particularly the bibliographies of recent literature found in each issue of *Imago Mundi* (indexed since 1977, and searchable by keyword through JSTOR) and*

in the international directories of research in the history of cartography.

For the older literature in the field, reference must be made to:

§ Phillips, Philip Lee. "A List of Works Relating to Cartography." In *A List of Maps of America in the Library of Congress*. Washington, D.C.: G.P.O., 1901; repr. New York: B. Franklin, 1966.

Library of Congress, *Bibliography of Cartography*. 5 vols. plus supplements in 2 vols. Boston: G. K. Hall, 1973-1980.

Ristow, Walter W., ed. *Guide to the History of Cartography: An Annotated List of References on the History of Maps and Mapmaking*. Washington, D.C.: Geography and Map Division, Library of Congress, 1973 (earlier editions in 1954 and 1960).

Researchers should also browse the key cartographic journals directly, including:

Cartographica, published since 1980 by the University of Toronto Press (previously *The Canadian Cartographer*) and home to many important articles, it was revamped in 2003-2004.

The Cartographic Journal, journal of the British Cartographic Society, includes many works of theoretical and historical significance.

Cartographic Perspectives, journal of the North American Cartographic Information Society, has increasingly published articles of historical relevance in recent years.

Progress in Human Geography includes annual summaries of recent literature in cartography and the history of cartography.

[*Coordinates*](#), an online journal of the Map and Geography Round Table of the American Library Association, replacing the older publication *Meridian*. Both journals have much of historical and general cartographic interest.

MapForum—originally an online journal (<http://www.mapforum.com>), active between 1999 and 2002—was reconfigured in 2004 as a quarterly print publication, filling the niche for the glossy map magazine left when *Mercator's World* ceased publishing. *Mercator's World* (1996-2003) itself was something of a successor to the old *The Map Collector* (1977-1996). These journals all include much of interest to the historian of cartography; indexes are available for the entire run of *The Map Collector*.

The Portolan, the newsletter of the [Washington Map Society](#), also includes many intriguing essays on historical topics, some quite substantial.

For other “hidden” cartographic journals, especially those that do not publish in English, such as *Caert-Thresoor* (1982-) or *Cartographica Helvetica* (1990-), refer to the list of journals in the [Map History gateway website](#).

9.2. Specialized Bibliographies (On-Line)

Robert W. Karrow’s [“Concise Bibliography of the History of Cartography: A Selected, Annotated List of Works on Old Maps and Their Makers, and on their Collection, Cataloging, Care, and Use,”](#) prepared in 1997, with updates through 2000. Karrow identified more than three hundred works within two primary categories: “General Literature,” and “Map Catalogs and Cartobibliographies.”

Evelyn Edson’s [“Bibliographic Essay: History of Cartography”](#) originally appeared in *CHOICE: Current Reviews for Academic Libraries* 38, nos. 11-12 (July/August 2001): 1899-909. This discussion of more than one hundred works, mostly English-language, was posted in January 2002 on the [Map History](#) gateway, with the permission of the American Library Association.

Joanne Woolway Grenfell prepared her [“A Bibliography of Secondary Texts Relating to Early Modern Literature and Geography,”](#) *Early Modern Literary Studies* 4.2 [1998]: no. 16 in conjunction with a special issue of that online journal, dedicated to the interconnections between literature and cartography in early modern Europe.

§ Of more general use is [Peter van der Krogt’s “Articles in Journals on the History of Cartography”](#), a comprehensive and regularly updated listing of articles in the many journals dedicated to the history of cartography. A single, large, HTML file, this can be searched for keywords by using the browser’s search function.

9.3. On-Line Indexes to Scholarly Writing

Much of the recent writing on the history of cartography has appeared within journals representing diverse academic fields and has not necessarily been picked up by the Imago Mundi bibliographies. Many of these articles, especially those in the English language, can be readily found through various online databases of academic literatures. Note that most of these online databases are accessible only through university subscriptions.

9.3.1. General

ArticleFirst: OCLC’s index to 12,000+ journals in science, technology, medicine, social

science, business, the humanities, and popular culture, developed since 1990.

Web of Knowledge (a.k.a. Web of Science): a combination of three citation indexes (science, social sciences, arts and humanities), together indexing 8,000+ peer-reviewed journals. One can search by regular criteria (author, keyword, etc.) or by works cited. A crucial source!

WorldCat: an online union catalog run by OCLC (Online Computer Library Center) that contains more than 64 million records (as of early 2006) for books, maps, and other materials, from the Library of Congress and many academic and non-academic libraries in North America (U.S. and Canada). Despite the title, the cataloging of materials in libraries beyond North America remains very limited. A non-subscription, public-access version is available at <http://worldcat.org>; while stripped down, this is a very useful resource for anyone without access to a university subscription. For older works, which in some cases have yet to be cataloged through WorldCat, reference should also be made to the many volumes of the Library of Congress's *National Union Catalog, Pre-1956 Imprints*.

[Karlsruher Virtueller Katalog \(KVK\)](#): an open-access and multi-lingual portal to a series of major European library catalogs, including national union catalogs, to which bibliographic searches can be submitted simultaneously. This is a very useful tool indeed.

9.3.2. The Historical Literature

America: History and Life: index, with abstracts, to 1,700+ social science and humanities journals in the field of United States and Canadian history, developed since 1964; see also *Historical Abstracts* and the note there.

Historical Abstracts: index, with abstracts, to 1,700+ historical periodicals (in 40 languages), developed since 1955; see also *America: History and Life*. Note that more general treatments of cartographic history, if they do not have a clear geographical arena for their subject matter, seem to fall within the divide between *Historical Abstracts* and *America: History and Life* and so are cataloged by neither; reference should always be made to other indexes and catalogs.

History of Science, Technology and Medicine: RLIN's online version of the ISIS bibliographies in the history of science (since 1975), together with bibliographies in the histories of technology and medicine.

9.3.3. The Geographical Literature

Note that few general and specific online article databases index specifically cartographic journals. As a result, reference should also be made to two indexes of geographical literature.

GeoBase: index, with abstracts, to the scholarly literature since 1980 on geography, geology and ecology. This online database is generally available in those universities which have large Geography departments.

GeoBib is the cumulative (since 1985), online version of the American Geographical Society Collection's *Current Geographical Publications*. Access is open: <http://geobib.lib.uwm.edu/>.

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