

tions to display associated memos and /or document summaries; or b) references for the node with options to display headers, text, coding stripes, cross references with or without node titles, for all documents or only one. A report (or any section of it), or anything else one creates on screen, because everything is a text document, can readily be printed or exported to a word-processing application.

Several default reports are easy to produce in ATLAS/ti: The user can choose a code and print all quotes for it, similar to the ability in NUD*IST to report on a node. ATLAS/ti includes a system-generated coding history; it records who assigned the code to a quote, useful with multiple coders on a large project, and it retains the lineage of merged codes in a system-generated comment attached to affected quotes. A matrix of each document by each code with counts in cells of coding frequencies also is easy to produce. But beyond basic lists, print functions in ATLAS/ti are scant. It is evident from browsing the ATLAS/ti listserve that researchers are frustrated with the lack of print capability, particularly wanting to print out a full document with its codes for project documentation. The software developer's bias is toward on-screen work rather than large print jobs. While using fully the graphic network capabilities is easy and important to exploratory thinking, the only ready way to capture that work is with the computer's print screen function, which in our experience truncates all but small displays.

ATLAS/ti was developed to make full use of Windows graphics capabilities, so its appearance is modern. NUD*IST has DOS roots, and in this version, the tree display that graphically depicts hierarchical relationships among nodes remains crude and rather annoying in its inflexibility; this is especially vexing using the package on a

Macintosh computer. Fortunately, Version 4.0 offers several alternative methods of working with the system not previously available. Both NUD*IST and ATLAS/ti are focused on qualitative data analysis so make provision for export to other software for other functions. NUD*IST, for instance, exports to Inspiration and Decision Explorer, among others, for more sophisticated graphical display and model building. Both NUD*IST and ATLAS/ti export to SPSS for further statistical analysis if appropriate.

For further reading on these two software packages, and other software adapted to qualitative data analysis, see *Computer Programs for Qualitative Data Analysis* by Eben E. Weitzman and Matthew B. Miles, from Sage Publications, Inc. (1995).

reviews

Cartographic Encounters: Perspectives on Native American Mapmaking and Map Use. G. Malcolm Lewis, ed. Chicago: University of Chicago Press, 1998. xx, 318 p., illus., maps, index. \$60.00. Hardcover (ISBN 0-226-47694-4).

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From the earliest days of the encounter between native North Americans and Europeans, maps and mapmaking have played a significant role in the exchanges between peoples with vastly different world views. This book brings together the ideas of a number of scholars representing a variety of academic disciplines in an attempt to trace the history of mapmaking and map use by native Americans, and especially how they were influenced by contact with whites.

The book grew out of a series of lectures which comprised the eleventh Kenneth Nebenzahl, Jr., Lectures in the History of Cartography, held at the Newberry Library in Chicago in 1993. G. Malcolm Lewis, in addition to organizing the program which included talks by Elizabeth Boone, Patricia Galloway, and Peter Nabokov, gave the keynote lectures and served as the editor of this volume. Realizing the need to expand the scope of the work beyond what had been covered at the Nebenzahl Lectures, Lewis solicited contributions from four other scholars who approached the subject of native American cartography in different ways and from different perspectives.

Arranged to reflect the chronology of events concerning this topic, the book is divided into three parts. Part 1 focuses on the 400-year period of the first encounter, Part 2 deals with the ongoing second encounter, and Part 3 attempts to predict future encounters.

Part 1 consists of three chapters written by Lewis which review the history of past encounters. He discusses maps and mapmaking among native North Americans as described and transcribed by whites in the field between 1511-1925, native maps studied by scholars in government bureaus, archives, museums, and libraries between 1782-1911, and perceptions of native cartography ca. 1970, when a 60-year hiatus in scholarly interest in the field was about to come to an end.

After a discussion of possible pre-encounter indigenous mapping, Lewis goes on to describe numerous examples of the types of cartographic encounters which occurred between natives and whites in the field. Evidence of native American maps, mapmaking, and map use during the first 400 years of contact exists for the most part only as described and transcribed by whites. Much of native mapping

was ephemeral, consisting of maps drawn in the ground or snow with sticks, "message maps" drawn on birchbark or left on blazed trees, or even words and gestures. Descriptions of these have come to us almost exclusively in the writings of white observers. Those few examples still extant of maps by indigenous peoples were most often collected and interpreted by whites, who were more likely to preserve artifacts which came closer to their own definition of what is "map-like."

In Chapter 2, Lewis concerns himself with early encounters which did not involve direct contact with the native mapmakers. This includes the use of native maps as sources of information by European cartographers, a practice which dates back to the early sixteenth century. Lewis differentiates here between the acknowledged "incorporation" of native information and the more frequent and unacknowledged "assimilation" of such information by Europeans.

In the late eighteenth century, scholars began to take an interest in native maps, working for the most part with published accounts of maps and mapmaking housed in archives, museums, and libraries. Lewis discusses the many contributions of both German and North American scholars. The Germans were more inclined to study published reports on native maps and mapping, looking for evidence to support the idea of a global evolution of cartography through various stages of development. In contrast, the Americans concentrated their work on the surviving examples of native maps, how they were made, and how they were used.

Lewis characterizes the years from 1911 to 1970 as a "hiatus" in research on native American cartography. He takes stock of encounter scholarship as it was in 1970, before moving on to look at more recent research. At that time, it was dominated by the white point of

view. Some important aspects of native cartography had barely been examined. These included the place of maps in the larger pictographic tradition of native Americans, the variety of contexts in which indigenous peoples made and used maps, and the influence of contact with whites on native mapping. Additionally, studies done up to that point failed to establish the provenance of surviving maps, and lacked an appreciation of the geometry of native maps, which, though different from Western conventions, did have validity. But in Lewis' opinion, the biggest problem which hindered progress in research on native cartography was the whites' adherence to such a narrow definition of what makes a map.

Part 2, by far the largest section of the book, consists of seven independent essays describing research conducted by the seven other contributors to this volume. The diversity of backgrounds represented by these authors, among them art history, literature, law, archaeology, and anthropology, demonstrates that scholarship in this field is no longer limited to the narrow province of the history of cartography. In fact, only one of the contributors besides Lewis is identified as a geographer.

Chapter 4, written by Lewis, serves as an introduction to this part of the book. He surveys the considerable amount of scholarship which has appeared recently, and divides it into what he perceives as three general areas or directions of research: historical (including exploration, archaeology, and history of cartography), anthropological, and current mapping activities of native Americans. He shows how the seven essays to follow fit into these broad subject areas and provides additional information and examples, especially for those areas, such as current mapping by native Americans, which are not treated in a separate essay. Admittedly, most of the research pre-

sented in the remainder of the book is concerned with the historical context of the cartographic encounter.

Elizabeth Boone's essay discusses Aztec maps, or "cartographic paintings." No such maps have survived from the pre-contact period, but the hundred or so that do remain from the early colonial period show varying degrees of European influence. Indeed, the Aztecs did not distinguish between maps and other kinds of "writing" prior to the Spanish conquest, and had to adopt the Spanish loanword "mapa" to describe something which had not previously existed in their own vocabulary. Aztec maps were used not only to show travel routes for present or future movement, but also as historical documents on which to record past movements and actions, and to depict the spatial organization of their territories.

In a chapter that begins with an examination of native American influences on four eighteenth-century European maps of North America, Barbara Belyea draws attention to the problems that result when attempts are made to translate cartographic conventions from one culture to another. The world view represented in native maps is vastly different from that depicted in Western scientific cartography. Too often, whites have equated "different" with "primitive," and have not been willing or able to accept as maps artifacts which did not conform to their conventions of what a map should look like.

Because there are so many different indigenous cultures in North America, it is dangerous to make generalizations about them. In spite of this, Belyea feels that native maps exhibit some constant characteristics across cultures, the most important of which is that, unlike European maps, they are "unframed" and therefore independent of a spatial grid. In her view, we defeat the purpose of learning about

native cartography by first insisting on trying to translate it into our own terms. Instead, we should be concentrating on establishing a dialog with the native cultures which still exist.

Margaret Pearce sets out to investigate "Indian deeds" as a source of information on native mapping of southern New England in the seventeenth and eighteenth centuries. Hundreds of such documents, known as native land transfers or Indian deeds because they recorded land transactions between colonists and native Americans, have survived and can be examined for evidence of indigenous peoples' involvement in the mapping of this region.

Pearce notes that European maps "... portrayed a landscape in which colonial settlement advanced and became visible, and Indians and wilderness receded and were erased." Native mapping was mostly "erased" as well, except in the form of unacknowledged contributions to European maps. Therefore, to find evidence of native mapping one needs to go beyond the conventions of traditional Western cartography and approach other types of mapping activities, such as Indian deeds, with an open mind. Examining these documents in this way, Pearce concludes that both natives and whites mapped property predominantly through words rather than graphics, but they did so in ways which were very dissimilar. While whites relied on written descriptions of the land, natives utilized the spoken word. Although there were few native "maps" in the sense of artifacts conforming to Western ideas of what a map should look like, native "mapping," expressed through words rather than graphically, was common, and, Pearce argues, should not be ignored in the study of native cartography.

In the next essay, Morris Arnold examines one particular artifact, a painted buffalo hide preserved at a

museum, and makes a case for the possibility that the scenes depicted in this painting are put there in a way which corresponds to their actual spatial relationship. Interpreted as a graphic representation with "deliberate cartographic content," this painted hide could thus be the oldest surviving example of an original native American map. Arnold goes on to establish a Quapaw provenance for the painting, and presents convincing evidence that it depicts a battle between the Quapaw and Chickasaw tribes which took place ca. 1740-1750.

Gregory Waselkov discusses native American mapping from an archaeological perspective. North American archaeologists have tended not to make much use of indigenous maps, mainly because such maps are both scarce and hard to understand. Looking at the small number of extant maps made by the indigenous peoples of the southeast, most of which exist only as European copies, Waselkov distinguishes between two kinds of maps which were used for different purposes. One kind related the locations of native villages to other features in the landscape. These were more easily understood by Europeans and also contained the type of information that was useful to them as explorers, settlers, and soldiers. The second kind of native map portrayed social and political relationships in a symbolic manner with which Europeans were not familiar. Since the colonists found them difficult to understand, only a few examples were preserved, more as ethnographic curiosities than for their cartographic value. Waselkov argues that both types of native maps have potential as useful tools for archaeologists, and he presents two examples where this has been demonstrated.

Next, Patricia Galloway discusses the influence that indigenous maps and geographic information from southeastern North

America had on European cartography, specifically the Delisle cartographic establishment. North American mapping at the end of the seventeenth century was dominated by the Delisles, and their maps continued to be widely copied for many years afterward. Southeastern native Americans produced at least two types of maps. Galloway terms them "sociograms," which show the geography of both physical and social space, and "event transcriptions," which show specific activities with a geographical or social reference. She goes on to show how the Delisle maps may have assimilated information from both sociograms and event transcriptions into their cartographic representations of North America.

In the final essay of Part 2, Peter Nabokov concerns himself with some of the ways in which native American depictions of space have played a role in confrontations between whites and natives, in offering a view of native American cosmology, and in providing guidelines for the proper conduct of life. He points out an important contrast in cultural approaches to mapmaking. For many indigenous peoples, it was necessary to learn and know a landscape, to experience its environment first-hand, before being able to depict it on a map. The opposite was true of the European practice of conquering a completely unknown territory by first naming and drawing it on maps, and only then actually experiencing the land or settling on it. Nabokov goes on to describe various aspects of native American architecture, rituals, songs, and stories as they relate to the conceptualization and depiction of space.

As is to be expected in a work written by a group of different authors, the individual essays comprising Part 2 vary in their style and quality. Overall, however, the tone of serious and rigorous scholarship established by Lewis in the

first four chapters of the book has been matched by the other contributors. Their subject matter ranges from the very specific, such as Arnold's detailed examination of one native American artifact and Boone's thorough description of one culture's mapping practices, to more general commentaries on native cartography as a whole, such as those by Belyea and Nabokov, which discuss native mapping across different cultures and through different ways of expressing spatial concepts.

Some recurring themes are evident in almost all of these essays. This group of scholars is much more sensitive to the biases inherent in attempting to analyze and interpret native American mapping from a white perspective. They recognize that the cartographic encounter was a two-way process. Not only were native maps and mapmaking influenced by contact with whites, but European maps of North America were often derived from information and maps provided by native Americans. Several of these essays mention an apparent dichotomy in the types of maps natives produced. One type, conforming more to the traditional Western concept of a map, was used for way-finding or to portray the spatial relationships of landscape features. The other type, more likely to employ a symbolism unfamiliar to whites, depicted a culture's history or described its social organization. Finally, the authors of these essays are willing to expand their definition of what comprises a map far beyond the narrow rubric of traditional Western cartography. But can these boundaries be extended far enough to include even such things as gestures, spoken words, and performance art in a discussion of the history of cartography? These authors would probably argue that they can, and must, if we are to get past a Western-biased view of native American mapping.

The third and final part of the book presents Lewis' predictions as to what may emerge as future encounter contexts. He presents five probable areas: the legal context; language, linguistics, and semantics in translational contexts; cognitive science contexts; social science contexts; and artistic, literary, and performance contexts. He also outlines certain conditions which he feels are necessary for making significant progress in the future study of native American mapping. In agreement with the other contributors to this volume, the first condition he mentions is a new operational definition of "map." This could not be as narrow as the definition held by many cartographers and historians of cartography, but would have to be broad enough to include such things as language and behavior patterns, as long as they contain a spatial component. Secondly, he feels that those interested in North American native mapping must make a greater effort to share their findings with those who are researching traditional cartography in other parts of the world. Along with this they must involve a broader community of scientists and specialists from other fields in their studies. Above all, Lewis believes that the native peoples themselves must be encouraged to become involved in the study of their own cartographic history. In future encounters, it is hoped that descendants of the people who made these maps will offer their own unique insights on them, in order to correct the bias which is contained in most studies conducted thus far.

Along these lines, it is unfortunate that no native North Americans contributed to this book. Perhaps this simply reinforces Lewis' point, that native Americans have not as yet been engaged in the study of the cartographic encounter. He apologizes for not having made more of an attempt himself to discuss his research with native

North Americans, and admits to his frustration at not being able to find contributors willing and able to write about Inuit maps and mapmaking.

This does not diminish the value of this book as an important contribution to the study of native American cartography. It joins other recently published works, including *Cartography in the Traditional African, American, Arctic, Australian, and Pacific Societies*, edited by Malcolm Lewis and David Woodward, which is volume 2, book 3 of *The History of Cartography*, and *Another America: Native American Maps and the History of Our Land* by Mark Warhus which provide further evidence of the renewed interest in this field. Carefully chosen illustrations and a comprehensive index augment this scholarly treatment of a complex subject.

Cartographic Encounters would certainly make a valuable addition to any library concerned with the history of cartography or with native American history and culture. It is not necessary to have a specialized knowledge of native mapping or culture in order to appreciate this book. Indeed, it challenges the reader to rethink some of the most fundamental concepts of cartography, such as what defines a map. Although its scholarly tone and copious footnotes may limit its appeal to a more popular audience, the serious reader will find a wealth of interesting and well-documented examples of research in a field which appears to be on the verge of an exciting, if somewhat controversial, future.