



The History of Cartography in a Nutshell

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Abstract

This is a *very* short history of cartography. Notes and links to images are included at the end.

Keywords: maps, cartography, history, portolan charts, map projections, Claudius Ptolemy, Gerardus Mercator, Fra Mauro, Peutinger Table, C.F. Cassini de Thury

Editor's Note:

About five years ago Professor Valerio was asked to prepare a short article on the history of cartography for a multimedia presentation by the Istituto e Museo di Storia della Scienza of Florence. He was astounded to learn that his article could only be thirteen lines long, but he nonetheless complied. The following is a translation of that article.

Most of us are familiar with much longer accounts of this subject, such as the multi-volume *History of Cartography* being published by the University of Chicago Press, or the single volume edited by James R. Akerman and Robert W. Karrow, Jr., *Maps: Finding Our Place in the World* (Chicago: University of

Chicago Press, 2007).

But, as the Reader's Digest has taught us, there are few limits to condensation. Prof. Valerio's exercise in extreme condensation is interesting in itself, and it might be useful as a model for such purposes as museum exhibitions and Web sites introducing the history of cartography. Numbers in the article correspond to citations of maps illustrating his text. Where possible, Web links to these maps have been included.

The History of Cartography

Mapping (1) is a very ancient way to bring order to one's spatial surroundings by using graphic techniques. Humans modify the parameters of spatial representations to meet their changing needs (2). Thus originated city plans (3 – 4), route maps, regional (chorographic) maps (5), and world maps (6)—depending on the scale of reduction. Nautical charts (7) came into being with the development of maritime traffic (8-10) in the Mediterranean basin (11). An evolutionary paradigm, which only considers the development of geographic accuracy and precision in mapping, is not applicable to the history of cartography (12). Maps are not always concerned with the depiction of material reality. In the case of religious cartography (13), medieval “Mappaemundi” (14) reflect the anxieties and expectations of Western societies. Modern route maps and the distance maps of antiquity (15-16) serve the same purpose, and their syntax is not substantially different. With the formation of modern states, cartography became an instrument for war and for controlling territory (17). This initiated (18) the mathematical construction of maps (19) and their geometric formalization (20). Along with the standardization of conventional signs and the development of new methods of projection, these developments matured in the eighteenth-century Age of Enlightenment (21-22).

Notes and Illustrations:

1. Bedolina Map (second millenium B.C.). Petroglyph of the Bronze Age, which shows part of the cultivated land in the Val Camonica (Lombardy-Italy). The site also includes zoomorphic, anthropomorphic, and magical symbols.) Ausilio Priuli, *Incisioni Rupestri della Val Camonica*, Priuli & Verlucca editori, 1985, figg. 20, 21, 22. Also in: *History of Cartography*, vol. I, fig. 4.28. (Online at: <http://librarycog.uwindsor.ca:8082/artblog/librarycog/1133754522>)
2. Plan of Nippur. Probably one of the most ancient urban images at a reduced scale. Dates from the mid-second millennium B.C.) Hilprecht Collection, Friedrich Schiller Universität, Jena. *History of Cartography*, vol. I, fig. 6.7. (Online at: http://z.about.com/d/archaeology/1/7/B/h/beijing_45pr.jpg)
3. Cadastral map of Orange (France). The marble map of Orange, dating from the first century A.D., not only showed land ownership, but also major physical and cultural features, including rivers, roads, and centuration). Musée Municipale d'Orange. *History of Cartography*, vol. I, fig. 31.16. (Online at: <http://archaeology-images.com/photo-galleries/France/Orange-museum/image1.html>)
4. Marble Plan of Rome. The most important urban plan of antiquity, constructed of marble over an area of 13 x 18 meters, brought to completion around 208 A.D. (Now in Musei Comunali, Rome.) E. Rodriguez

Almeida, *Forma Urbis Marmorea*, Quasar, Roma 1981, tav. 1 and 2. Also in: *History of Cartography*, vol. I, fig. 13.25. (Online at: <http://formaurbis.stanford.edu/>)

5. Regional Ptolemaic map. Chorographic map of the British Isles taken from a Byzantine codex of the thirteenth century, following the Geography of Claudius Ptolemy from the second century A.D. Biblioteca Apostolica Vaticana (Urbinae Graecus 82). S. Gentile, *Firenze e la scoperta dell'America*, Olschki, 1992, Tav. VII. (Similar map at: <http://www.polona.pl/dlibra/doccontent?id=61&from=editionindex&from=3search&dirids=16&lang=en>)

6. Map of the world known to antiquity. From a Byzantine codex that reproduces the planisphere described in the *Geography* of Claudius Ptolemy from the second century A.D. Biblioteca Apostolica Vaticana (Urbinae Graecus 82). S. Gentile, *Firenze e la scoperta dell'America*, Olschki, 1992, Tav. VI. Also in: *Colombo e l'apertura degli spazi*, vol. I, p. 38-39. Also in: *History of Cartography*, vol. I, plate 9.

7. Carta Pisana. Probably created in Genoa, this is the oldest known nautical chart. Dating from the end of the thirteenth century, it shows the entire Mediterranean basin, and includes series of wind roses used for navigation and the construction of maps.) Bibliothèque Nationale, Paris (Rés. Ge. B 1118). *Colombo e l'apertura degli spazi*, vol. I, p. 298-299. (Online at: <http://www.capurromrc.it/mappe/!0143pisana.jpg>)

8. Vesconte Chart. From an atlas attributed to Pietro Visconte, the first cartographer to sign his own map (in 1311). The atlas was completed in 1321. Biblioteca Apostolica Vaticana (Vat. Lat. 2972). *History of Cartography*, vol. I, plate 29. (Online at: <http://www.henry-davis.com/MAPS/LMwebpages/228F.html>)

9. World map of Andrea Bianco. From a nautical atlas dated 1436. Biblioteca Marciana, It. Z 76, f.2v. *Colombo e l'apertura degli spazi*, vol. I, p. 415. (Online at: <http://www.henry-davis.com/MAPS/LMwebpages/241.html>)

10. Set of rules (martelojo) for navigational estimates. From a nautical atlas by Andrea Bianco dated 1436. Biblioteca Marciana, It. Z 76, f.2v. *Colombo e l'apertura degli spazi*, vol. II, p. 596. (Explanation of the marteloio rule online at: http://brunelleschi.imss.fi.it/michaelofrhodes/navigate_toolkit_basics.html)

11. Chart of the Adriatic sea. Drawn on parchment by Grazioso Benincasa in 1472. Museo Civico Correr, Venezia. *Carte da Navigar*, Marsilio 1990, p. 48, 49. (Online at: http://www.library.nd.edu/medieval_library/facsimiles/facsintro/smap/it.html)

12. Borgiano planisphere. A circular world map engraved on copper with a diameter of 63 cm. from the first half of the fifteenth century. Biblioteca Apostolica Vaticana, Borgia XVI. R. Almagià, *Monumenta Cartographica Vaticana*, vol. I 1944, tav. XI. There are also several color reproductions.

13. World map of Fra Mauro. This world map represents the culmination of medieval cartography, in which mythical and fantastic elements are combined with the more modern representation of the coasts of Europe and Northern Africa found in portolan charts. It was made at the request of the Signoria of Venice in the second half of the fifteenth century. Biblioteca Marciana, Venezia. *Colombo e l'apertura degli spazi*, vol. I,

p. 174-175. Also in: *History of Cartography*, vol. I, plate 18. (Online, but the map upside down, at: <http://www.bldt.net/Om/IMG/jpg/FraMauroMap.jpg>)

14. Fra Mauro map (detail). *Colombo e l'apertura degli spazi*, vol. I, p. 439.

15. Peutinger Table. Dates from the twelfth or thirteenth centuries. Derived from a fourth century map, which identified all of the roads of the Roman Empire, along with milestones and distances. Österreichische Nationalbibliothek, Vienna (Codex Vindobonensis 324). L. Bosio, *La Tabula Peutingeriana*, Maggiolo, Rimini 1983, fig. 38 and 40. *Colombo e l'apertura degli spazi*, vol. I, p. 26 Also: *History of Cartography*, vol. I, plate 5. (Online at: http://www.romansites.com/carta_dell'impero.htm)

16. Map of the London "Tube" (Online at: <http://www.tfl.gov.uk/assets/downloads/standard-tube-map.pdf>)

17. Aragonese map. The Aragonese Kingdom of Naples was the first modern state to create large-scale maps of its own territory, both for political and administrative as well as military purposes. Archivio di Stato di Napoli, Piante e disegni, cart. XXXII, 2. Partially reproduced in V. Valerio, *Società Uomini e Istituzioni cartografiche nel Mezzogiorno d'Italia*, Istituto Geografico Militare, Firenze 1993, p. 40 (now also in *History of Cartography*, vol III, p. 949).

18. Map of the world by Mercator. Published in 1569, it is the first depiction of the world using an isogonal projection, which changes the loxodromes of the globe into straight lines on a the map. Paris Bibl. Nat. Cartes et Plans, Rés Ge. A 1064. R. Shirley, *The Mapping of the World*, Holland Press 1983, plate 102 (la scheda ha anche la localizzazione di altre copie). *Colombo e l'apertura degli spazi*, vol. II, p. 816-817. (Online at: <http://www.atmos.washington.edu/~earth/earth1/Earthmap26.jpg>)

19. Map of the measurement of a meridian arc at Quito. With the measurement of two arcs of the meridian—one near the North Pole and the other near the Equator—French scientists attempted to provide a definitive answer concerning the shape of the earth. The mission at the equator was conducted by C.M. de La Condamine between 1736 and 1741.) L. A. Brown, *The Story of Maps*, Dover, New York, 1979, p. 263.

20. Cassini Map. The first great modern geodetic survey undertaken by C.F. Cassini de Thury. A copy from the National Library of the University of Pavia, a sheet of which (no. 67, Poitiers) is reproduced in *L'Europa delle carte*, ed. M. Milanese, p. 107. (Online at: http://cassini.ehess.fr/cassini/fr/html/1_navigation.php#)

21. Transverse Mercator Projection. Created by J.H. Lambert in 1772, it was further developed by C.F. Gauss in 1822 with a complex formula to take into account the ellipsoidal shape of the earth. J. P. Snyder, *An Album of Map Projections*, U. S. Geological Survey, Professional Paper n. 1453, 1989, p. 13. (Online at: <http://www.uwgb.edu/DutchS/FieldMethods/UTMSystem.htm>)

22. French table of conventional signs. In 1803 a commission was drawn together to develop uniform signs and conventions for topographic maps. The result was the first standardization of all cartographic processes from conception to engraving. Plate 4 of *Memorial Topographique et Militaire* n. 5, Parigi 1803. (Online at: <http://www.sunysb.edu/libmap/coordinates/seriesb/no10/signes.jpg>)

[Top](#) | [MAGERT Home](#) | [Coordinates Home](#)