

Globes: 400 Years of Exploration, Navigation, and Power. SYLVIA SUMIRA. Chicago: The University of Chicago Press, 2014. Pp. 224, maps, color photos. \$45.00 cloth. ISBN 978-0-2261-3900-5.

Sylvia Sumira's illustrated book of the history of (mostly Western) globes will delight both academic geographers and map enthusiasts, with page after page of glossy images drawn largely from the British Library maps collection. But beyond the beautiful pictures and close-ups of cartographic detail, this book is also an excellent jumping-off point for thinking about the materiality of geographic representations of space and how geographic history operates as public history. To do this, the author illuminates the materiality of globes, their role in developing and reflecting technologies of navigation, and how they changed as material expressions of power over time.

Foremost, Sumira explores globes as physical objects, and offers readers a rich vocabulary for describing their physicality. The unfamiliar words, compiled in a glossary, include the language of craftsmanship as well as globe-reading, and compel us to imagine the extent to which people's sense of geographical location and located-ness was once accompanied by analog instruments of calculation. For instance, the majority of the globes that the author presents in the period from the fifteenth to the eighteenth centuries were made in pairs: the *terrestrial* globe, with which we remain familiar today, had a—now long lost—counterpart in the *celestial* globe, for which the user “must imagine the earth at the centre of the sphere and the viewer beyond the heavens, looking down at the universe” (p. 17). These coupled spheres situated the viewer not only in the place where she stood on Earth, but also among the heavens, which were long considered a much more central part of people's everyday experiences. These paired globes were as common in the standard mounted variety as they were in the many “pocket globes” shown throughout the book, in which the case was lined with images of the constellations, in their various forms.

Yet the details of globe production and use over time are not mere ‘factoids,’ but a source of insight into the work that globes have done in the world over time. As the author points out, for much of its history the “globe which turned in a stand and rotated about its own axis did not represent the rotation of the earth; rather, it allowed computations to be made relating to time and seasonal change. The user could discover, for example, when the sun rises at a particular time of the year, at a given latitude, which was important in daily life” (p. 20).

The author also tells us a great deal about the history of globe production. Most globes are made by first printing a series of *gores*—citrus peel-shaped pieces of paper with map images printed on them—which are mounted on a sphere made of paper, cardboard, wood and/or plaster. This technology of printing and mounting arose with the printing press and was improved with various advances in engraving, from wood block to copper plate intaglio to color lithography, that occurred in the sixteenth to the nineteenth centuries. While we generally think about the printing press advancing the mass production of books and book literacy, the ability to print maps and globes similarly had a tremendous effect on geographical literacy.

In addition to the vocabulary of the globe as object, *Globes* offers a discussion of the marks and lines central to understanding navigation. An example of these is *rhumb lines* or *loxodromes*, first found on Mercator's 1541 globe, in which they emanate from 32 points on the globe, these are “lines of constant bearing by which sailors could navigate to their destination. Each rhumb line cuts all meridians at the same angle, so on a globe it gently spirals toward the poles” (p. 54). The vocabulary for thinking about the Earth in these terms helps the uninitiated reader begin to imagine what elements of wayfinding were important to a sailor and how he thought about the physical shape of the planet as he moved across it. The inverse of this is that Sumira also guides us through detailed changes in how globes represent space, as different European explorers' voyages made the maps of the contours of landforms more accurate, and their names became

etched – both figuratively and literally – into the contours of the globe.

This leads us to power – the final word of this book’s title. The subtle but widely distributed changes in globe printing provide an excellent place to begin a discussion among students of geography about the role of the map in systems of imperialism and conquest. These include the funding of explorer missions by monarchs and corporations; the changes in technologies for printing the gores that make up the skin of the globes; the distribution of globes by printing companies; and the change in status of these objects in maintaining empire -- from an object of political prestige to an object of classroom learning. In each of these ways, the globes in this book demonstrate the small ways in which cultures of representation change, and change us with them.

In turn, seeing the evolution of these objects might help us understand what role the navigational tools of our own time play in our everyday lives. While globes were designed to be useful, their purpose as objects of beauty and status cannot be underestimated. Like the one-time set of Worldbooks or even the humble bookshelf, globes have long been a prized symbol of learned people and their literal worldliness. Thus, being able to see the material change over time in how people conceived of the spaces of planet Earth may give the reader some ability to analyze – or at least see the complexity – of a world reigned over by digital maps, and new kinds of empire.

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