



**Miri Shefer-Mossensohn.** *Science among the Ottomans: The Cultural Creation and Exchange of Knowledge.* Austin: University of Texas Press, 2015. 262 pp. \$55.00, cloth, ISBN 978-1-4773-0359-7.

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The current state of scholarship on Ottoman science cries out for synthesis. A rising tide of research has pulled down old pillars—decline, transfer, diffusion of modern sciences from Europe—that once gave shape to the historiography of science in the Ottoman Empire, as in most Islamic contexts. Recent studies point to Ottoman participation in early modern networks of knowledge production that transcended the empire's borders, whether in terms of the exchange of material goods and technological artifacts; the movement of scholars, merchants, bureaucrats, and sailors; or the circulation and translation of books. Meanwhile, late Ottomanists have devoted increasing attention to the role of science, technology, and medicine in nineteenth-century projects of social and political reform. But nearly all of this historical revision has transpired in the pages of monographs and scholarly articles. Missing is the kind of synthetic analysis, legible to non-specialists, that would assemble the work of diverse research projects into a new narrative of Ottoman science.

In other words, Miri Shefer-Mossensohn's *Science among the Ottomans: The Cultural Creation and Exchange of Knowledge* is a timely book. Although the author's background is in the history of Ottoman medicine, here she draws less on her original research than on the breadth of recent

scholarship on Ottoman learning. Employing the lens of "culture," the book aims to show how specific institutions, spaces, epistemologies, methods of learning, and considerations of politics, gender, and commerce shaped a uniquely "Ottoman" science that was diverse in its interests and productive of knowledge in its own way. *Science among the Ottomans* began as a textbook, and its strengths, as well as its limitations, cluster around two distinctive features that seem closely related to the author's original, pedagogical motives: the book's thematic structure, and the accessibility of its style.

A four-part thematic structure organizes the book's sprawling subject matter in ways that should be thought-provoking to scholars and helpful to students. Chapter 1, "Framing 'Knowledge,'" surveys the sources of knowledge that Ottomans drew upon to ask and answer questions about their world, as well as the terms and categories that they used to describe this knowledge. The second chapter, "Where and How Does Learning Take Place," emphasizes the *medrese* (school), but also contains useful discussions of apprenticeship, the court (including the harem), and travel. Thus, the first half of the book explores the epistemologies, material resources, politics, and social relationships that shaped the pursuit of knowledge.

The second half of the book turns to topics that suggest the dynamism of Ottoman science. Chapter 3 is titled “The Transfer of Knowledge to, from, and within the Ottoman Empire,” and the awkwardness of this heading reflects the author’s desire to escape the conventional meaning of “transfer,” with its connotations of knowledge produced in one location, transmitted in whole to another, and used without adaptation. Instead, Shefer-Mossensohn seeks to highlight processes of “sifting and selection, translation, citations, copying, and circulation of people, ideas, and instruments” (p. 87). (It is fair to wonder why “transfer” should be retained at all.) A final chapter, on “State in Science,” explains the imbrication of science with elite patronage, pious endowments (*evkaf*), and, in the nineteenth century, new political demands and institutions.

This thematic structure has the analytical benefit of situating Ottoman knowledge in its social contexts, and of highlighting the connections among different areas of study. It also has pedagogical advantages. Instructors in history of science and medicine courses, for example, may be able to assign sections from *Science among the Ottomans* without having to provide much additional reading on Ottoman society, since the book offers a reasonably detailed introduction to the languages, institutions, and social networks that connected Ottoman scholars, bureaucrats, and rulers. Moreover, because the book’s themes echo approaches that have long been prevalent among historians of science—attending to language, space, circulation, and translation—any of the book’s chapters could easily be read alongside studies of science in a variety of early modern contexts, from England to China.

In addition to these strengths, the thematic structure of *Science among the Ottomans* contains a few notable weaknesses. Foremost among the latter is the absence of a clear and consistent narrative of change over time. To be sure, each chapter remarks on the relationship between Ottoman

endeavors and pre-Ottoman precedents, as well as new trends in the late Ottoman era. These discussions are uneven in their depth of analysis, however. For example, the chapter “State in Science” attends to late Ottoman investment in technologies of communication and transportation, but the scientific materialism that inspired the Young Turks goes unmentioned. And the burden is on readers to piece together disparate sections, scattered in different places across several chapters, to develop a sense of how science, technology, and medicine came to have new meanings and assume new roles in the eighteenth and nineteenth centuries. (The incorporation of centers of Arabic learning after 1517 is another diachronic distinction that readers could miss too easily.) The danger is that students, among other readers, may fall back on a sense of all things “Ottoman” as belonging to a vaguely defined, unchanging period of premodern time—which is surely not the author’s intention.

The book’s thematization also does not advance a strong argument that would situate Ottoman history with respect to other histories of science in global or “non-Western” context. While Shefer-Mossensohn offers the concept of “generics” as a way of understanding Ottoman ingenuity, the book does little to elaborate on the utility of the term. In medicine, as Jeremy Greene has recently shown, the making of generics raises significant questions about the production of equivalence. An engagement with such extant literature on generics, coupled with a sustained elaboration of the term throughout the book, might indeed have yielded fresh ways of thinking about the Ottomans’ place within networks of material circulation and technical know-how. As the book stands, however, its most persuasive argument is “that Ottoman society and culture were a fertile ground for diverse scientific activity” (p. viii). This is a point worth making, especially in survey courses, but it does little to position Ottoman history within current conversations about science

and empire, early modernity, or the origins of globalization.

The other distinctive feature of *Science among the Ottomans*, also perhaps originating in the work's pedigree as a textbook, is the clarity of the author's prose. Shefer-Mossensohn consistently avoids the emphasis on technical development that long characterized the literature on science in Islamic contexts, limiting its readership to specialists. The book gains readability, too, from a refreshingly broad construal of "science": some of the most intriguing sections deal with subjects like gardening, even as traditional heavyweights like astronomy and medicine receive their due. The book will doubtless leave readers with a sense of Ottomans as having been actively engaged in a variety of ways of making and using knowledge.

At times, however, the lack of technical detail may leave readers with little sense of how Ottomans thought the world worked, and hence, unable to appreciate the significance of the arguments that Shefer-Mossensohn recapitulates. As a case in point, the section on Ottoman interest in Paracelsus notes that iatrochemistry differed from humoral medicine—but what the humoral understanding entailed, as a way of situating the body within a larger cosmography, authorizing specific habits and interventions, is not explained. To give a narrower, but equally illustrative, example: Shefer-Mossensohn writes that the "double-faced" nature of Hamidian clock towers, which showed both *alafranga* and *alaturka* time, displayed the state's "attempt to calibrate interaction with the outer world while holding on to indigenous traditions" (p. 149). This is an elegant synopsis of recent work on Ottoman temporality, but without an explanation of how *alaturka* time differed from *alafranga*, it seems declarative rather than persuasive. The problem is not that the book lacks detail. Biographical sketches and intriguing anecdotes abound. The level of detail fluctuates,

however, in a way that is not always calibrated to support the book's key arguments.

*Science among the Ottomans* opens an important conversation. The book's thematic structure seems likely to make it a productive interlocutor for future efforts at synthesis in the field. Students will benefit from the book's accessible summary of a range of recent scholarship, while scholars from other fields (including those preparing lectures) will be grateful for the book's extensive footnotes and strong bibliography, which serve as an effective guide to more-specialized studies.

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