his ‘lord’ could be understood as functioning on two distinct levels simultaneously. Read more naively, however, the piece simply comes across as a man’s address to a lover whom he cannot forget: he laments the loss of the relationship, reaffirms his love, and realizes that it is pointless to try stifling the way he feels. The brevity and plasticity of *ghazal* poetry mean that there are no barriers to understanding this poem as an abstract, intellectualized meditation in which the poetic persona reanalyses his memories as a way of bridging the mundane and the spiritual. Equally, however, there is nothing to stop us remaining inside the speaker’s head and the psychological experience of navigating a purely human relationship. Given the heterogeneity of Sa’di’s first audiences, I wonder whether the poet’s ideas should be understood less as a frame and more as a process: Sa’di, the lyric subject and the auditor all vacillate between the phenomenal and the noumenal, but perhaps rarely in step with one another.

In addition to the thoughtful questions that it raises, *Beholding Beauty* is rewarding in other ways too. The author’s translations are generally sensitive, and some take on a power of their own in English, such as the half-line ‘you ought to be plucked and tweaked like a lute string’ (p. 50). The verb used in the Persian original, *gūshmāl khūrdan*, literally meaning ‘to have one’s ears boxed’, is being employed here to refer to tuning the pegs of the lute—visual analogues for ears—as the instrument sits on the player’s knee, and so the image could be understood as an analogy for fondling the ears of a beloved who sits in the lover’s lap. It is easy to see why the author transposes the image slightly.

Overall, *Beholding Beauty* is an extremely thorough study of structures of feeling in the verse of one of Iran’s greatest poets, showing how much sustained close reading can reveal. Its utility for those of us who research Persian literary history is obvious, but it will also appeal to comparativists, historians of Mongol Iran, and cultural historians.

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*Baghdad and Isfahan: A Dialogue of Two Cities in an Age of Science ca. 750–1750*


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I

This is a curious book. Much of my time reading it was taken up with trying to decide what exactly I had in my hands. The author herself cautions the reader in the preface that ‘this book is meant as a “novel reader”: novel in the sense of a
new form of historical work, not just a storytelling genre; and reader, as a selective guide to sources, not just a book audience" (p. xii). Nominally, it is the story of the exact sciences in the Muslim world, geographically between Baghdad and Isfahan, and temporally between 750–1750. So much the title tells us. A quick glance shows that it is notably not a work of new research so much as a summary overview and discussion of the state of the field. So a work of synthesis? A textbook? Not really. The author has chosen to structure the book around the conceit of a dialogue between the two cities in question based on a manuscript that she discovered (p. 1), as well as the academic trajectory of an imagined student, a certain Charles Leo Scribner, who progresses through her classes, visits her exhibitions, and undertakes research echoing her own across Europe and the Middle East. A fictional composite, Leo is there both to offer the reader a way in to what is at times a dense summary of academic work, but his growth also represents for the author the reader’s growth through the book (p. 7). I found this conceit unconvincing.

The book is divided into seven chapters, representing the product of the author’s teaching, research, and exhibits between 2005–2019 (p. 4). The first chapter lays out Leo’s choice of a manuscript of the Dialogue of Baghdad and Isfahan as the subject of his senior thesis, contextualizing it with a discussion of science between the founding of the former city in the eighth century and the collapse of the latter in the eighteenth (p. 22). Kheirandish uses Leo’s education as a vehicle to alternate between something of a descriptive account of Harvard’s Widener library and a series of potted summaries of foundational works on history of science in the Muslim world by authorities such as George Sarton, A. I. Sabra (whose work figures prominently throughout the book), and Hans Daiber (pp. 22–3). We follow Leo to London where he views the manuscript of the Dialogue, and then are transported back to an imagined Baghdad of the thirteenth century where a scribe Kamal-i Isfahani writes the Dialogue (p. 29) and to an Isfahan of the eighteenth century, where a scribe named Jamal transcripts it (p. 38). The second chapter begins with a curious juxtaposition of Nādir Shāh and Newton, the centrality of Newton to modern science here heavily emphasized (pp. 45–6), before summarizing the main themes in Leo’s (i.e. Kheirandish’s) classes at Harvard, ‘Science in the Islamic Middle Ages’ and ‘Alexandria to Baghdad’, including detailed descriptions of class excursions (p. 49). This approach allows Kheirandish to agreeably meander through descriptions of authors (Averroes, Birūnī, Ibn Sīnā, etc.), places (the Whipple Museum in Cambridge, MIT, etc.), and texts (Birūnī’s Book of Instruction; Šūfi’s Book of Constellations) without presenting the reader with much of a narrative beyond intellectual productivity and tracing the echo when not an influence of the Islamic world on European modernity. The second half of the chapter returns to Baghdad and Isfahan, this time with discussions of figures such as Khwarizmi and ʿUmar Khayyām (p. 62), Yahyā al-Maghribī, and ʿAlī Qūshjī (p. 74). The chapter ends with a rumination on why Newton came to the insights he did about the Earth’s motion and Qūshjī did not, despite his already having all the pieces he needed to make that leap (pp. 75–6).
It is worth pausing here, and considering what type of story Kheirandish is telling. For while she provides a richer, more expansive version of events than that found in a number of survey articles on the exact sciences in the Islamic world, the strong focus on astronomy and optics (Kheirandish’s own specialty) is the same, and the implicit acceptance of the teleology of the story’s arc ending with Newton, then Einstein, is also here. The cultivation of the exact sciences between the two cities of the title, however intense and celebrated it may have been during the millennium she repeatedly dips into, is framed by its inability to have developed into what took place among a small group of European thinkers from the seventeenth century onwards. As such, her approach is at odds with a number of recent developments in the study of the exact and natural sciences in the Islamicate world that focus on, among other things, the importance and centrality of the occult sciences, the diffusion of simpler scientific knowledge through educational networks among broader portions of the population (instead of the achievements of celebrated individuals), and the necessity of studying the exact and natural sciences outside of a Eurocentric teleology ending with the so-called Scientific Revolution. Kheirandish’s narrative paints a rich picture of what it means to study the exact sciences in the Islamicate world, including travel to libraries around the world, the staging of exhibitions, and performances, but there is little here that is new research, and I was repeatedly left wondering as to the book’s actual audience: for the narrative that she tells, there are shorter, clearer overviews such as the entry, in vol. 4 of *The New Cambridge History of Islam* (eds. Robert Irwin and William Blair, 2010), by Sonja Brentjes and Robert Morrison ‘The sciences in Islamic societies (750–1800)’, 564–639; and for a theoretically nuanced, sweeping narrative survey there is Ahmad Dallal’s *Islam, Science, and the Challenge of History* (New Haven, CT: Yale University Press, 2010). Kheirandish’s book distinguishes itself from these other sources with its use of the *Dialogue* as a frame to summarize a great deal of scholarship and by having the character of Leo stand in for the reader’s own discovery of the work she glosses. I could not help but feel that she should either have cut Leo and the *Dialogue* (somewhat interesting, but distracting) or to have fully embraced fiction as a device to present her broader narrative.

The third chapter returns to the founding of Baghdad in the eighth century, and through the lives of al-Fazārī and Ibn Nawbakht discusses the importance of astrology in the founding of the city and the influence of prior Persian scientific traditions on the early Muslim community (pp. 90–6). The fourth follows Leo from Cambridge, London, Paris, and Istanbul as he continues to research the *Dialogue*, and now also learns a great deal about the optics of Ibn al-Haytham (p. 104), and more unexpectedly, of Ibn Sinā (pp. 120–3). The fifth opens with a
A description of a Virtual Gallery of an exhibit—‘Windows into early science’ (organized by Kheirandish)—that Leo visits (pp. 125–6) and then moves on to a conference in Iran on the four-hundredth anniversary of discoveries made by Galileo (p. 131), which allows Leo to also visit the site of the Maragha observatory, and Isfahan itself. The chapter rounds out with an extended discussion of Averroes’ (Ibn Rushd’s) astronomy, and then Naṣīr al-Dīn al-Ṭūsī’s Book of Constellations (p. 143). The sixth chapter begins with Leo visiting and working on multimedia projects related to the Dialogue (p. 152), including a description of a short documentary—‘A quartet of early scientific traditions’—made by Kheirandish. It then takes up the career of fourteenth-century Damascene time-keeper Ibn al-Shāṭir (pp. 158–62) before turning to those of the fifteenth-century Iranian astronomer Kāshī, the sixteenth-century Istanbul astronomer Taqī al-Dīn (pp. 166–72), and the seventeenth-century resident of Isfahan, Bahā’ al-Dīn (pp. 172–80). It is in her discussion of the latter’s career that Kheirandish offers the reader one of her most extensive ruminations on why intellects such as Bahā’ al-Dīn were not able to achieve results comparable to his European contemporary Galileo: the reason is twofold, the absence of the telescope, and the lack of a scientific community in Iran that had preserved the richness of previous centuries of scientific work (pp. 176–7). The seventh chapter opens with new discoveries regarding the Dialogue manuscript, before returning to Ibn al-Haytham’s insights and then turning to Leo’s interest in a Museum of Chances, an apt framing for Leo’s (and thus Kheirandish’s) ultimate understanding of the trajectory of the exact sciences in the Muslim world—a series of chances and opportunities repeatedly missed or lost (pp. 190–5; 205). The book’s final pages take the reader through a description of a House of Stars exhibition in Isfahan, which frames the author’s final comments on a tradition that had not succeeded in fulfilling the chances realized by Galileo and Newton, but which might yet connect the Muslim world with the broader trajectory of human success in the sciences (p. 208).

This is, again, a curious book. It is deeply learned and reading many of the individual case studies of authors or texts reminded me of listening to an erudite lecture. And indeed, the entire book is in a way like attending a very well-prepared class on the exact sciences in the Islamic world with a professor who brings in exhibitions, digital media, and takes the class on exciting trips. But it is too idiosyncratic to be a textbook and would perhaps have benefited from having been structured as a memoir, a genre that would have allowed its author to recount her own journey by which she acquired the substantial knowledge on display in this book.

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