Catherine Jami

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This densely written and subtly argued monograph represents the culmination of the author’s decades-long effort to reconstruct the fortunes of “Western learning” in the closing decades of the Han Chinese Ming dynasty and the first century or so of the Manchu Qing dynasty, China’s last. Jami’s narrative of how early modern Jesuit mathematical cultures were transformed and how they transformed, in turn, the mathematical cultures of late imperial China opens with a rapid survey of both in the sixteenth century. She then synthesizes recent scholarship on the convergence of these mathematical traditions in the various works produced in the early 1600s by a number of Jesuit missionaries—Matteo Ricci (1552–1610), Giulio Aleni (1582–1649), and Sabatino de Ursis (1575–1620), among others—in collaboration with the prominent scholar-officials and Christian converts Xu Guangqi (1562–1633) and Li Zhizao (1565–1630). Based for the most part on mathematical textbooks written by Christopher Clavius (1538–1612), who had taught several of the missionaries at the Society’s Collegio Romano, these texts were initially linked to others drawn from Jesuit sources, notably the Aristotelian commentaries produced at the Society’s college in Coimbra.

Ironically, Li’s and Xu’s efforts to raise their foreign co-religionists’ visibility by drawing them into a matter of statecraft (calendrical reform) spelled the sundering of this “heavenly learning.” Their successors, including Johann Schreck (1576–1630), Giacomo Rho (1592–1638), Johann Adam Schall von Bell (1592–1666), and Ferdinand Verbiest (1623–1688), helped ensure that the reputation of what would come to be known as “Western learning” survived the dynastic transition in 1644 with new luster, but largely understood as mathematical and technical, not philosophical and metaphysical.

The most striking feature of Jami’s account of this initial period is the attention paid to how Jesuit mathematical activity elicited all sorts of local interest (not always positive) and recognition (not always desired), be it from the surviving Southern Ming court, a regional warlord, or China’s new Manchu masters; scholar-officials and the Jesuits’ Muslim and Chinese competitors at the imperial Astronomical Bureau; and literati networks, especially in the Jiangnan area. Jami points to an especially significant turning point with scholars in this last category: they typically came to know “Western learning” through an encounter with Jesuit texts, not through a direct student-teacher relationship with a Jesuit master. The import of these different modes of engagement
becomes clear in part two, which centers on the Kangxi emperor’s early investment in Jesuit mathematics. The emperor not only intervened on the Jesuits’ behalf in the mid-1660s when they and their fellow Christians at the Astronomical Bureau stood accused of astronomical incompetence, astrological miscalculation, and unwarranted innovation; he also took Verbiest and others on as imperial tutors, a personal monopoly on a distinctive expertise that he deftly deployed to affirm his authority at the expense of his officials as well as the Chinese astronomical traditions they sought to uphold. A chapter on the provincial scholar Mei Wending (1633–1721) sketches a sharply contrasting picture. Thanks to his connections to various Jiangnan scholars, Mei added Jesuit manuscript texts on mathematics and astronomy to his reading of Chinese works on related topics. Analyzing Mei’s collection of some of his own writings, Jami highlights the syncretic approach he took in integrating Western mathematical concepts and techniques into Chinese scholarly practices, historical narratives, and philosophical traditions.

Parts three and four work together to trace the Kangxi emperor’s evolving engagement with “Western learning.” Part three explores the depth of his immersion in lessons taught by his Jesuit tutors, from Verbiest in the 1670s to Tomás Pereira (1646–1708), Joachim Bouvet (1656–1730), Jean-François Gerbillon (1654–1707), and Antoine Thomas (1644–1709) in the 1690s. The textual evidence of these sometimes intensive sessions—the collaborative product of Jesuit writing and imperial editing—covered a range of topics that early modern Europeans would have considered pure and “mixed” mathematics (arithmetic, Euclidean geometry, logarithms, algebra, ballistics, horology, surveying and, of course, astronomy, to name a few). Yet Jami’s concern is with other kinds of diversity evident in the emperor’s Jesuit tutors, especially their conflicting political allegiances to the Portuguese padroado, the papacy, and the French Bourbon kings, as well as their competing intellectual affiliations to the mathematical textbook tradition established nearly a century earlier by Clavius, on the one hand, and more recent scientific approaches espoused by scholars working within the orbit of the Parisian Académie royale des sciences on the other.

The concluding chapter in part three characterizes “astronomy in the capital” in the critical period of the early 1690s, when the Kangxi emperor used his mastery of “Western learning” to hold his Jesuit experts and other officials and subjects, including the Jiangnan scholar Mei Wending, in a fragile balance. The Kangxi emperor’s deliberate tipping of that balance is the subject of part four, which traces his move away from Jesuit mathematical specialists and towards indigenous constituencies whose mathematical expertise he had previously dismissed, notably the Chinese scholar-official and patron of mathematics