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Review: Pamela O. Long, Openness, Secrecy, Authorship: Technical Arts and the Culture of Knowledge from Antiquity to the Renaissance (Baltimore and London, 2001)

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Openness, Secrecy, Authorship: Technical Arts and the Culture of Knowledge from Antiquity to the Renaissance.

By Pamela O. Long. Baltimore: Johns Hopkins University Press, 2001. Pp. xii+364. $55.

In our well-defined world of classicists, medievalists, and early modernists, books like *Openness, Secrecy, Authorship* have become increasingly rare. Pamela Long, ignoring all those unspoken caveats about periodization—Pericles to Henry Oldenburg, is she crazy?—has courageously gone where few others dare to go by crafting an argument that extends from antiquity to the Renaissance and beyond. After all, we professional historians, abandoning grand narratives for better things, have mostly left big history to the sociologists and economists. Not that Long aims to provide one more master narrative. Rather, it is precisely by embracing a long time frame that she hopes to challenge widely accepted generalizations about secrecy and openness.

Building on scholarship that emphasizes the links between artisanal culture and the scientific revolution, Long acknowledges that devices, instruments, and machines played a crucial role in the rise of the new experimental philosophy. In fact, one of her driving questions builds on that foundation. What, she wants to know, were the conditions for the scientific revolution? In other words, what preconditions had to be satisfied before the mechanical arts could be implicated in making knowledge claims about the natural world? Long insists that it took a complex set of long-term developments to set the stage: the rise of commercial capitalism, the expansion of artisanal trades, the increasing cultural importance of objects, and the development of "conspicuous consumption" by elites. As objects and the manufacture of objects assumed greater cultural importance during the Renaissance, the mechanical arts liberated themselves from the low-status stigma of craft know-how and became associated with knowledge about the world itself. It might be technology's coming-of-age story, with authorship playing the role of catalyst; for by Long's account it was authorship that not only created alliances between artisans, humanists, and powerful elites, but also transformed certain mechanical arts "into discursive, even learned subjects, preparing them for use in investigating the world" (p. 247).

For Long, secrecy and openness are values, cultivated by distinct "cultures of knowledge." This implies that we cannot make overarching a priori claims about how certain social, economic, or technological structures determine secrecy and openness. Generalizations assuming "uniformity across historical eras," she argues, "such as the one that proposes that most craft production involved craft secrecy, are untenable" (p. 100). Stressing the lack of evidence for craft secrecy in antiquity, Long suggests that it first

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arose in the urbanizing context of the Middle Ages, together with proprietary attitudes about technical knowledge. While antiquity accorded low status to artisans, the Middle Ages saw increased appreciation for the technical arts, as members of the new urban merchant and banker classes ornamented and remade the cities over which they ruled. This increased appreciation for technical skill translated into improved status for the artisans who possessed it.

The fifteenth and sixteenth centuries witnessed a boom in writing on the mechanical arts. Long argues that this expansion in technical authorship did not result from the invention of the printing press but emerged from within manuscript culture. She examines the books produced during this time—works on everything from gunpowder and fortification to sculpture and fountains—as part of the larger cultural phenomenon of authorship, arguing that the expansion of writings on the mechanical arts during this time "came out of a growing proximity of techne and praxis" (p. 141).

Filled with details about everything from Philo of Byzantium's pneumatics to Lazarus Ercker's professional ambitions, *Openness, Secrecy, Authorship* can occasionally be difficult to navigate. With frequent sketches of particular authors and contexts, it is certainly wicked to summarize and sometimes provides too little information about too many things. Still, there is plenty of interesting, relevant, and carefully researched material here. It may take an army of specialists to sort it all out, poking holes here and quibbling there. (I, to my lasting shame, found nothing seriously wrong with the sections on sixteenth-century metallurgy.) But the larger framework of Long's project should provoke new research for years to come. It will, at the very least, encourage us to keep asking big questions.

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Glass: A World History.

By Alan Macfarlane and Gerry Martin. Chicago: University of Chicago Press, 2002. Pp. xii+255. $27.50.

The last book I read with this title was the American edition of *4,000 Jahre Glas* by Fritz Kämpfer and Klaus G. Beyer, a narrative history of glass and glassmaking. This book is something completely different. Despite its subtitle, and the statement on page 7 that it embraces "the whole known globe," it is not a comprehensive history, even though it does begin with a short history of glass in the Near East and Europe from its origins to the seventeenth century. Instead, Alan Macfarlane and Gerry Martin (professor of archaeological science at the University of Cambridge and cofounder of Eurotherm Ltd., respectively) present a highly unusual overview of the role of glass in the civilizations of Eurasia in the last thousand years.