

Review of Francesca Bray, *Technology, Gender and History in Imperial China. Great Transformations Reconsidered*. London & New York: Routledge, 2013

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As the title of its introduction implies, the ambition of Francesca Bray's new book is to demonstrate the "Power of technology" in explaining and understanding a society's culture and history. And this book has brilliantly achieved its goal and convinced its readers of the importance of technology as an indispensable key for understanding Chinese society in the late imperial period.

Many readers are familiar with Bray's influential book on technology and gender published sixteen years ago (*Technology and Gender. Fabrics of Power in Late Imperial China*. Berkeley: University of California Press 1997) which has shaped the way historians and anthropologists think about technology and society in Chinese history ever since. It eloquently shows technology not simply as material practices for managing nature, but especially as forms and expressions of subjectivity and social relations in everyday life, simply put, as part of culture itself. The new book is not only a condensed version of this earlier work but reaches a new level of synthesis by engaging more closely with recent works on Chinese history and STS theories. By highlighting "*nong*" agriculture as China's fundamental cosmo-political realm where proper socio-political and gender relations were defined and understood, Bray shows ever more clearly the centrality of gendered agricultural work (gynotechnics as well as androtechnics) in the making of late imperial China's political economy and governmentality. Compared to the 1997 work, this book presents a more holistic picture of gender and technology as part of Chinese history and culture. It should be a must-read for students and scholars of all levels researching Chinese history, gender studies, and anthropology of technology.

Although most of the 8 chapters of the book are edited versions of earlier publications between 1997 and 2008, they are revised and organized in such a way that, together, they present a well-structured and coherent account, revealing Bray's consistent pursuit of the topic since 1997. Three sections follow the introduction: Section I,

“Material foundations of the moral order” consists of two chapters depicting and analyzing the domestic space and farming landscapes; Section II, “Gynotechnics: crafting womanly virtues” in three chapters reworks and enhances the three main themes on women’s work of the 1997 work: in the domestic space, in textile production, and as mothers; Section III, “Androtechnics: the writing-brush, the plough and the nature of technical knowledge” in three chapters forms a coherent part on the production of “*nong*” knowledge as a science and the way it defined Chinese masculine identity. This last section, besides adding “androtechnics”, not discussed in Bray’s 1997 work, to complement “gynotechnics” that were already intensively discussed, also substantiates the notion of “*nong*” agriculture that is the idealistic cosmo-political sphere where late imperial Chinese men and women conceived their daily work and life. Under this section, chapter 7 “A gentlemanly occupation: the domestication of farming knowledge”, a hitherto unpublished paper, compares official and private treatises on agronomy, highlighting the different levels of knowledge construction, and how even local practices and skills formed “an ethical-technical knowledge cluster focused on ritual and social propriety, family well-being and the perpetuation of the lineage and its patrimonial property” (p. 218) The historical framework of this book remains the same as Bray’s 1997 study: the Neo-Confucian period from 12th- century Song dynasty to the late Qing of the early 19th century. The structure of the new book, on the other hand, articulates more forcefully the author’s idea of culture as embedded in gendered material practices, as ways of living, working, and interacting within a shared cosmo-political order.

As expected, one of the most valuable chapters of this new book is the introduction, where Bray provides a lucid and critical overview of anthropological/STS theories on technology to demonstrate how important they are in offering new insights on late imperial Chinese culture. She notably highlights the STS notion of “sociotechnical system”, a “seamless web” in which the social and the technical, the material and the symbolic merge. Under this light, some of the practices that had been treated in her earlier book, including the ancestral shrine in domestic architecture, now acquire new explanatory power of post 12th- century Chinese society. The introduction also summarizes key recent works on Chinese late imperial history (many of which inspired by Bray’s

1997 work) to further articulate the significance of women's work, and statecraft policies as sociotechnical systems in that history. As a scholar initially nurtured in the Needham tradition, Bray then engages interestingly with Kenneth Pomeranz's "Great Divergence" thesis that attempts to answer the question "how it was that China managed so much for so long" (p.25), which, for Bray, is actually a more productive way of asking, and thinking the "Needham question".

This book elegantly begins and ends with the analysis of the *Gengzhi tu* (Pictures of tilling and weaving), a Neo-Confucian icon of the ideal "nong" social order. Bray deconstructs the icon by skillfully juxtaposing the materials and procedures of women's and men's work, activities, and desires within the sphere of "nong" not only as a domain of economy and technology, but especially as a quintessential Neo-Confucian cosmic order. This deconstruction seems to imply, on the other hand, that the various sociotechnical systems in late imperial China tend to preserve rather than to disrupt social stability (On p. 251 Bray admits that illustrations of texts on technology often played a "archaicizing role", p. 251). These systems thus seem to be efficient in accommodating subsequent adjustments within the late imperial political economy since the 12th century, but unable to induce fundamental changes within the system. They might even be oblivious to emerging changes. Would this be a general characteristic shared by all sociotechnical systems of late imperial China? If so, the historian may continue to ask if this situation underwent fundamental changes after the 19th century, and if so, what would be the historical process producing such changes? Would it also be possible that the conservative character of late imperial sociotechnical systems has actually persisted until today?

Bray's new book will certainly continue to inspire, including questions that go beyond the scope of the book, and her approach and methodology will remain valuable for future research on technology and culture in China and elsewhere, past and present.