

century. Besides studying the “arts of engagement,” it is necessary to explore the arts of government, the rationalities/mentalities of government as it takes on environmental governance. People from various levels deploy different tactics for multiple purposes, as Hathaway points out. However, I keep wondering what problems can be really solved within these environmental “winds.”

Situating problems and possible solutions always has something to do with knowledge/power, and the task requires a critical analysis of political economy (Stevis and Assetto 2001). I do not wish to use Western standards to blame China for a worsening environmental performance. Nevertheless, the crucial fact is that China has become the biggest energy consumer and carbon emitter in the world. Such astonishing economic growth also brings serious environmental risks, including desertification, air and water pollution, water scarcity, soil erosion, and deforestation. Yet, such phenomena belong to far larger pictures, contexts that go far beyond economic and environmental considerations. The “war against nature” under Mao (Shapiro 2001), for instance, cannot be seen simply as the outcome of the influence of a foreign wind—the desire to complete a modernization project (begun in the late Qing) played a crucial role and needs to be contextually analyzed. But researchers must be willing to examine how understandings of state/society/party relations and people’s accommodation tactics can help to bring more fresh air and clean water. Elaborating Chinese characteristics in different fields is crucial; however, I do not think the “harmonious society” and the “scientific development” promoted by the Communist government are enough to create a truly Chinese mode of sustainable development. Pursuing Chinese characteristics has brought miracles in many areas and stimulated fruitful thinking about the world, and I sincerely hope this will also happen in the environmental field. It is a long and rough journey, and Hathaway’s findings do much to point the way to the right path.

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## Francesca Bray, *Technology, Gender and History in Imperial China: Great Transformations Reconsidered*

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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. 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, which has shaped the way historians and anthropologists think about technology and society in Chinese history (Bray 1997). It eloquently shows technology not simply as material practices for managing nature but 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; it 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 cosmopolitical realm where proper sociopolitical 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 is a must-read for students and scholars of all levels researching Chinese history, gender studies, and anthropology of technology.

Although most of the book’s eight chapters 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 steady pursuit of the topic since 1997. Three sections follow the introduction. Section 1, “Material Foundations of the Moral Order,” consists of two chapters depicting and analyzing the domestic space and farming landscapes. The three chapters in section 2, “Gynotechnics: Crafting Womanly Virtues,” rework and enhance the 1997 book’s

three main themes on women's work: in the domestic space, in textile production, and as mothers. And the three chapters in section 3, "Androtechnics: The Writing-Brush, the Plough and the Nature of Technical Knowledge," coherently address the production of *nong* knowledge as a science and discuss the way it defined Chinese masculine identity. This last section, besides adding androtechnics (not discussed in Bray's 1997 work) to complement gynotechnics (which were already intensively discussed), also substantiates the notion of *nong* agriculture: the idealistic cosmopolitical sphere where late imperial Chinese men and women conceived their daily work and life. Chapter 7, "A Gentlemanly Occupation: The Domestication of Farming Knowledge," from a hitherto unpublished paper, compares official and private treatises on agronomy, highlighting the different levels of knowledge construction and demonstrating 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" (218). The historical framework of this book remains the same as in Bray's 1997 study: the Neo-Confucian period, from the Song dynasty of the twelfth century to the late Qing of the early nineteenth. However, this book's structure 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 cosmopolitical order.

As expected, one of the new book's most valuable chapters is the introduction, where Bray provides a lucid and critical overview of anthropological and 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 a "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, acquire new explanatory power for post-twelfth-century Chinese society. The introduction also summarizes key recent works on Chinese late imperial history (many of which were inspired by Bray's 1997 work) to further articulate both the significance of women's work and statecraft policies as sociotechnical systems in that history. Then Bray—a scholar initially nurtured in the Needham tradition, in which scholars attempt to find out why, given China's remarkable scientific and technological achievements before the fifteenth century, the Scientific Revolution did not happen in China—engages interestingly with Kenneth Pomeranz's Great Divergence thesis, which attempts to answer the question "how it was that China managed so much for so long" (25). For Bray, the Great Divergence discussion 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 also, more importantly, 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 page 251 Bray admits that illustrations of texts on

economy since the twelfth 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 whether this situation underwent fundamental changes after the nineteenth century and, if so, what historical process would produce such changes. Is it also possible that the conservative character of late imperial sociotechnical systems has actually persisted until today?

Bray's new book will certainly continue to inspire and to prompt 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.

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