



## Technology and gender: A case study on “iron girls” in China (1950s–1970s)



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### ABSTRACT

“Iron girls” is a unique phrase which has become widely popularized from the 1950s through the 1970s in China. It was a metaphor, applied especially to represent a group of women who were often tall, sturdy and able to do heavy physical work at the site of farmland, factories or engineering projects, and were recognized as the typical outstanding women at the time. By combining the relevant news reports of the period and articles of reminiscences of iron girls themselves, we examined the iron girls' typical occupations and their changes over time, and analyzed the complex relationship between technology and gender behind this phenomenon. It concludes that iron girls were brought into the whole narrative system of China's modernization construction, and their personal liberation was obscured under a powerful metaphor of the mechanization; Technology was involved in the shaping of the new gender stereotypes, but the emergence and popularity of iron girls during this time had no substantial impacts on the development of technology and did not alter the gender stratification in the fields of technology; iron girls got important status at the price of the physical and mental damage; they actually serviced as a tool in the publicity of a kind of ideology of gender equality that attributes to embody the state's will-power in nature.

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### 1. Introduction

Technology and its discourses have always been one of factors shaping women and gender stereotypes in Chinese history. But this has been ignored at least by Chinese academics in the fields of women's history and history of science and technology. Scholars in women studies are more concerned with women's political and economic status, marriage, and family. Most historical case studies about women have paid more attention to leading figures in the fields of literature and the arts. For their part, Chinese scholars in the history of science and technology have paid little attention to gender issues. Professor Li Di, one of the most important Chinese historians of science, once remarked that he had never ignored women in the history of Chinese science and technology, and yet there are only 19 women mentioned in his *Zhong Guo Li Dai Ke Ji Ren Wu Sheng Zu Nian Biao (The Chronology of Scientists and Technological Inventors in All Previous Dynasties of China)* [1]. These 19

women were obviously only a very small proportion of the total (1522), but Li Di said he had seriously tried to find and acknowledge all women contributors. In his opinion, feminist studies of the history of science and technology equaled studies of female scientists and inventors. But historical documents rarely recorded women's deeds in science and technology. In our view, however, it is not absence from the historical literature that is the key problem but a lack of sensitivity to the issue of gender. For instance, there is a lot of historical literature and important archives dealing with women and technology during the period of the Republic of China (1912–1949), but Chinese scholars have made little use of these resources. By contrast, western scholars such as Francesca Bray and Charlotte Furth have done in-depth research on gender and technology or medicine in ancient China. In a word, gender and technology study or feminist history of technology includes but does not equal studies of female superstars. More importantly, it is necessary to explore the interaction between technology and gender and associated historical changes. From this perspective, there are numerous topics worth studying in the history of ancient and modern China.

For example, numerous archaeological findings have shown that

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burial goods are gendered and demonstrate a gendered division of labor during the lives of those buried in the tomb. Tools for making textiles, not weapons, are common in women's tombs. The combinations, arrangements and presentations of technical artifacts in tombs are of further relevance, embodying different forms of power, religious regulations, sense of family, and gendered cultures.

Francesca Bray's study shows Chinese house building, textile technology and reproductive technology were all intertwined with gender during the Song, Ming and Qing dynasties. Since the beginning of the Republic of China, Chinese society has undergone political transformation, a women liberation movement, and the further dissemination of western scientific culture. Over the course of this period, traditional Chinese ideas of gender have changed considerably. Some women have even gone aboard to study in technical fields. As a result, new technologies and public discourse about them have reconstructed the body and gender images of women, including women as nurses, doctors and teachers. These images have become part of political discourse regarding the *Xin Nvxing* (new woman). There is thus no lack of topics to be studied with regard gender and technology relationships.

Since the New China was born, gender discourse has undergone numerous changes. From the 1950s through the 1970s, the women's liberation and gender equality became increasingly important, with the *Tie Guniang* (Iron girls) playing an important role. Iron girls mainly included women active in the fields of agriculture, industry, and especially heavy industry. Their professional identity reflected the strong desire of the government to promote heavy industry and economic development. Women and their bodies, ideas of gender, technology, and modernization of the country were intertwined with each other and influenced the narrative of modernization. Since the 1980s, the aesthetic standards of women have undergone another great change and the image of the actress has replaced that of the iron girls as the primary representative of feminine beauty. Technology again has participated in the construction of women and gender in post-1980s China. (One of the interesting phenomena of this time worth doing research is the popularity of cosmetic surgery.)

As the above observations suggest, iron girls were a special group. They were produced by a distinctive ideology and discourse of the state during a particular time. During this period, women were in unprecedented ways asked or coerced into meeting the needs of national modernization construction, while their own senses of themselves were repressed and controlled. It is thus ironic that the term "iron girls" has on occasion been used as a synonym for gender equality by the government. In fact, technology and its discourse had been used as a force to shape women and create a special view of gender. It is in this sense, then, that the "iron girls" phenomenon can be a good case study of gender and technology in modern China.

However, just in the case of the women scientists and technical inventors in ancient China, iron girls have been ignored by Chinese historians of science and technology. In comparison, Chinese scholars in the field of women and media studies have done some relevant research. Here iron girls studies can be divided into three categories. First are the articles of reminiscences of iron girls themselves, focusing on experiences and feelings of these girls when they were young [2]. Second are academic papers written by scholars using literary criticism and media studies to focus on the body image of iron girls [3]. Third are papers about special types of iron girl gender cognitions among educated young women in the countryside [4], or on problems of gender divisions of labor in the context of the planned economic system [5].

One thing all these studies have in common is a tendency to slight relationships between gender and technology. As historians of technology, our aim in this article on iron girls is to highlight and

improve our understandings of technology, gender and the relationships between them. To this end we will not limit ourselves to the body image of iron girls or special educated young iron girls, but focus on the mutual shaping of gender and technology. We assume that both cultural and material aspects of technology have contributed to the construction of ideas of gender equality from the 1950s to the 1970s in China, while the emergence and popularity of iron girls during this time had no substantial impact on the development of technology and did not alter gender stratification in the field of technology. In comparison, it is the development of technology and industry, not gender equality was the primary aim of the government. Although the media was filled with the reports of iron girls and the discourse of gender equality, it in fact was the strategy of the government to mobilize people all over the country to promote industrial construction.

Before exploring the complex relationships between gender and technology behind the iron girls phenomenon, some basic questions need to be answered:

- What kind of woman was given the "iron girl" title?
- What gender connotation was expressed in this special word?
- What were the typical occupations of iron girls?
- Did typical iron girl occupations change over time?

## 2. The body image and typical occupations of iron girls

Some scholars have analyzed the specific time when the term "iron girls" appeared in China. One influential argument is that it originated from the term *Da-zhai Qingnian Funv Tujidui* (Da-zhai young woman commando), which praised these women's ability to shoulder heavy burdens and their spirit of "*Yi Bu Paku, Er Bu Pasi*" (They feared neither hardship nor death) [[5], p.181]. However, others have criticized this view. Emily Honig thinks the term was used from the early 1960s [4], p.247]. Another scholar Geng Huamin maintains that it dates back to descriptions of some rural unmarried female youth labor activists during China's agricultural cooperative movement in the 1950s [[6], p.69]. Our research suggests that the actual phrase "iron girls" began to appear in the media in the late 1950s and had become popular by the mid-1960s. Although there is no consensus on the specific time when this term appeared, it is universally acknowledged that its most popular period was during the Cultural Revolution (1966–1976). As Zhou Daming and Guo Yongping have written, as a special group in political movement, "iron girls" became a unique symbol in China during the 1960s to the 1980s and is an important phenomenon for scholars "describing Chinese women's liberation movement and deconstructing that collectivization era." [[7], p.6].

In Chinese culture, "iron" means "hard" and "strong". When used to describe persons, it implies that they have strong will-power. The term is also obviously associated in a more strict sense with some special industries such as iron and steel, petroleum, and mining. The workers in these industries often had to deal with machines and oil pollution, and were presumed to be strong and competent to do hard and dirty works involved. By contrast, the word "girl" is associated in traditional Chinese culture with "slender" and "neat" female image doing such things as needlework at home. There is an obvious conflict between these two images. As a combination of "iron" and "girl", what "iron girls" tries to shape is a new gender stereotype which reversed traditional gender concepts in Chinese society. By integrating or eliminating the binary opposition between "iron" and "girl", the media attempted to promote a new concept of gender equality.

This special gender connotation of the phrase "iron girls" was mainly embodied in two ways. First, is the image of iron girls in the

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