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April 12, 2022

Chinese Women's Common Knowledge: Modern Science in the *Linglong* Magazine, 1912-1949

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## Abstract

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By Virginia Qian

In this study, I explore the connections between women and science in the Republican period China (1912-1949) by examining *Linglong*, a women's periodical published in Shanghai between 1931 and 1937. *Linglong* offered a space for Republican women to confront the disorienting atmosphere where public and intellectual debate on women's role in saving the nation and the influx of western information contributed to changing norms and expectations for women. Republican period intellectuals claimed that women's weakness and subordination were linked to the nation's weakness, and women's emancipation linked to modernity. Reading *Linglong*, women asserted some control over how they understood the roles and responsibilities of a modern woman and were no passive recipient of modern transformation as cast by intellectuals. At the same time, there was no clear path to this transformation. *Linglong* displayed diverse presentations of western information and contradictions among its articles. Science in *Linglong* shaped the behaviors of a modern woman and provided them the roots of rational and scientific thinking.

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## Introduction

Science in the Republican period (1912-1949) was at the center of intellectual debates and from there permeated the lives of common people. In the previous decades, other than those who were trained in a western scientific disciplines, most Chinese politicians, intellectuals, or commoners were not in close contact with western science. Having been relegated to the periphery of the lives of the Chinese, Republican science appeared as a concept in-the-making that was constantly reshaped, and a collective hope to those who looked to build a better nation. In my thesis, I study the role of science in the formation of modern Chinese womanhood in Republican China.

As early as the mid-nineteenth century, the Chinese government adopted western science and utilized scientific inventions.<sup>1</sup> During the self-strengthening movement (1860-1880s), science was adopted to strengthen the nation and increase its wealth. Contemporary literati and officialdom supported the model of *tiyong*, a current of thinking that supported the utilitarian aspect of western thought and technology while allowing old traditions to remain at the center of Chinese philosophy. The result of the first Sino-Japanese war, Treaty of Shimonoseki, which was signed in 1895, caught Chinese intellectuals off guard by the extent of China's losses and the regime's military ability in comparison to that of the Japanese. This moment invalidated their faith in the approach of simply adopting western science and technology without also considering its ties to the governing and social order. The old order was now seen as degenerate. The intellectuals saw this moment as proof that their previous reform programs had failed and that defeat shattered China's international reputation. The old systems of thought and guiding principles that served to knit the Chinese people together were reconsidered while there was a shift toward accepting and thinking through modernization.

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<sup>1</sup> James Reardon-Anderson, *The Study of Change: Chemistry in China, 1840-1949* (United Kingdom: Cambridge University Press, 1991).



Science was in the minds of those who looked for a replacement. From the beginning of the twentieth century, when a much larger group of Chinese thinkers were looking for new outlets, science took the center of the intellectual debate about what could guide the Chinese people towards building a new nation and creating a better life. To intellectuals and commoners alike, this foreign concept gradually entered their realm of professional work and everyday living.

Breaking with the old Confucian heritage implied a reorientation of societal order. Since Liang Qichao's declaration in the late nineteenth century that foot-bound Chinese women were parasites of society and a cause of Chinese backwardness, Chinese women were undergoing a transformative period in which their traditional place in the domestic sphere was challenged.<sup>2</sup> Their traditional role and responsibility were part of the Confucian order and that to break with the order implied a reconsideration of Chinese womanhood. For Republican politicians, when the state of the nation's well-being was measured by the state of women's liberation, the woman figure was pushed to the front line of issues that awaited reform. The New Culture intellectuals linked women's emancipation with nation-building and modernity. While Republican women's social responsibility differentiated them from men and was one that entailed a majority of their work to take place in the home, they were at the crossroads of the creation of new approaches to rewrite the old order and restore the confidence of the nation.

The women's journal was a particular genre that emerged during the rapid expansion of print media in the Republican period.<sup>3</sup> These journals invited women to form a community in the male dominated culture. While women's liberation in the Republican period, having been inherited from the late-Qing period, was linked to the well-being of the nation, women's periodicals constituted a space where female intellectuals found agency over their everyday lives and emphasized individual differences. Following the larger trend of the Chinese pursuit of

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<sup>2</sup> Gail Hershatter, *Women in China's Long Twentieth Century* (Global, Area, & International Archive) (Berkeley: University of California Press, 2007).

<sup>3</sup> Yun Zhang, ed., *Engendering the Woman Question: Men, Women, and Writing in China's Early Periodical Press* (Brill 2020).

science as an effort to build a better nation, women's journals incorporated scientific knowledge into its pages.

I will be examining a women's periodical, *Linglong*, in order to look for the ways in which the magazine presented science to women. Between 1931 and 1937, the Sanhe company, founded by Lin Zecang (1903-1961, male), published the *Linglong* magazine along with a series of newspaper and periodicals including *Pictorial Weekly: Changshi – Common Knowledge* (1928–1931), *Linglong* (1931–1937), *Diansheng* (*Diansheng ribao – Movie Radio News*, 1932–1933; *Diansheng zhoukan – Movie Tone: The National Movie Weekly*, 1934–1941) and others.<sup>4</sup> There are 299 issues printed in total while 242 issues have been collected and made available for research. The C. V. Starr East Asian Library of Columbia University digitized the existing issues of the magazine and has provided access to the magazine on its library website.

The name of the journal, *ling*(玲) *long* (瓏), means the tinkling sound of two pieces of jade clicking together. The term can also be used to describe a clever and nimble person. The two literal meanings of the name tie together to represent an aspiration that the magazine imbues in the readers: the typical *Linglong* readers were women who looked for elegance and beauty and possessed a sophisticated mind. In many ways similar to magazines published in the late Qing and early Republican periods, *Linglong* was representative for presenting voices that more often told variegated stories rather than rendered a logically coherent unity.<sup>5</sup> Bounded by its pocket size, the magazine contained articles that were generally short and succinct, ranging from two to three sentences to a short essay. Longer articles were divided and published in consecutive issues. Many articles did not show their author; if they did, the magazine provided little information beyond the author's pen name. While its editorial board consisted mostly of men, the magazine did feature women writers and was intended to capture and foster urban

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<sup>4</sup> Barbara Mittler and Liying Sun, "The Magazine," Chinese Women's Magazine in the Late Qing and Early Republican Period, University of Heidelberg, accessed Nov 20, 2021, [https://kjc-svo34.kjc.uni-heidelberg.de/frauenzeitschriften/public/linglong/the\\_magazine.php?magazin\\_id=3](https://kjc-svo34.kjc.uni-heidelberg.de/frauenzeitschriften/public/linglong/the_magazine.php?magazin_id=3).

<sup>5</sup> Barbara Mittler and Liying Sun, "Historical Significance," Chinese Women's Magazine in the Late Qing and Early Republican Period. University of Heidelberg, accessed Nov 20, 2021, [https://kjc-svo34.kjc.uni-heidelberg.de/frauenzeitschriften/public/linglong/the\\_magazine.php?magazin\\_id=3](https://kjc-svo34.kjc.uni-heidelberg.de/frauenzeitschriften/public/linglong/the_magazine.php?magazin_id=3).

educated female readers. The magazine circulated widely in major Chinese treaty-port cities so that nearly every urban young woman had a copy of *Linglong* in their hands.<sup>6</sup>

The magazine was designed to be read bi-directionally such that the printed orientation of the text naturally partitioned the magazine in two and guided the readers to read the magazine from both the front and back covers. The articles read from the back cover were formatted with horizontally-oriented text, incorporated more progressive content, and provided readers exposure to new or exotic information, such as Hollywood movie stars, western entertainment, and scientific practices. In contrast, vertically-oriented text tended to cover topics that pertained to the interests of women derived from their traditional social role. Science was usually found in the column “Common Knowledge” (*changshi* 常識) in the vertically-oriented section and sometimes appeared in the news articles towards the front of the magazine.

Recent historical treatment of the history of women has tended to focus on women’s liberation in the context of nation-building and paid little attention to science in the formation of modern womanhood. Gail Hershatter’s book, *Women and China’s Revolutions*, explains how women’s work in domestic and public spaces made important contributions to the formation of the nascent Chinese nation.<sup>7</sup> And yet her exploration of modern Chinese womanhood involves little, if any, attention to science. Coming from a slightly different perspective, Hsiao-pei Yen depicts the shaping of a modern woman identity and Chinese women’s agency over their liberation in the pages of *Linglong*.<sup>8</sup> Yen examines the disobedient voices in *Linglong* to explain how their promotion of the lifestyle of a modern woman diverged from state regulations on women’s behavior and were evidence of women’s resistance to state control. Yen explores topics such as women’s dress, consumption, and the sense of a healthy beauty, yet here too, there was

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<sup>6</sup> Barbara Mittler and Liying Sun, “The Magazine,” *Chinese Women’s Magazine in the Late Qing and Early Republican Period*, University of Heidelberg, accessed Nov 20, 2021, [https://kjc-sv034.kjc.uni-heidelberg.de/frauenzeitschriften/public/linglong/the\\_magazine.php?magazin\\_id=3](https://kjc-sv034.kjc.uni-heidelberg.de/frauenzeitschriften/public/linglong/the_magazine.php?magazin_id=3).

<sup>7</sup> Gail Hershatter, *Women and China’s Revolutions*, (United States: Rowman & Littlefield Publishers, 2018).

<sup>8</sup> Hsiao-pei Yen, “Body Politics, Modernity and National Salvation: The Modern Girl and the New Life Movement,” *Asian Studies Review* 29, no. 2 (2005): 165-186.

less attention paid to the role of science and scientific thinking in the formation of this modern Chinese womanhood.

Scholars of modern science, on the other hand, have delineated Chinese endeavors for western science in the context of nationalism and nation-building. They have identified the late Qing as the period during which western science was introduced and initiated by the global trend of industrialization. In the subsequent Republican period (1912-1949), they argued that western science was domesticated. In *Unearthing the Nation*, Grace Yen Shen argues that Chinese scientists invented their own form of nationalism in the creation of the field of geology in China.<sup>9</sup> Chinese geologists closely worked with students to investigate the Chinese land and established internationally recognized scientific organizations, which in turn facilitated western science to take root in China and contributed to nation-building. Danian Hu's study of the growth of theoretical physics explains that the development of the academic discipline was a result of contributions of individual scientists and the influence of Albert Einstein.<sup>10</sup> In these investigations of late-Qing and Republican science, there were seldom traces of women scientists, women's involvement or contribution.

More recently, there has been important work done on individual female scientists and the emergence and influence of domestic science in Republican China. Lan A. Li in her essay, "Invisible Bodies," explores the endeavors of a female scientist, Lu Gwei-djen, in the field of medicine in China and overseas.<sup>11</sup> Li gave readers an entrance into the intellectual and private life of Lu Gwei-djen. For Lu, science was a means to go on an individual quest of nationalism and cultural legacy while her female identity spoke to her nearly isolated self-placement in the Cambridge research community. Helen Schneider's book, *Keeping the Nation's House: Domestic Management and the Making of Modern China*, traces the proliferation of

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<sup>9</sup> Grace Yen Shen, *Unearthing the Nation: Modern Geology and Nationalism in Republican China*, (United Kingdom: University of Chicago Press, 2014).

<sup>10</sup> Danian Hu, *China and Albert Einstein the Reception of the Physicist and His Theory in China 1917-1979*, (Cambridge, MA: Harvard University Press, 2005).

<sup>11</sup> Lan A. Li, "Invisible Bodies: Lu Gwei-Djen and the Specter of Translation," *Asian Medicine* (Brill 2018): 33–68.

educational opportunities and disciplines designed for women in the 1920s and 30s and explains the transformative ability of science in education in bringing about women's emancipation.<sup>12</sup> She argues that the discipline of home economics both prepared women for their role as homemakers and empowered female students to enter professional fields. Schneider outlined the intellectual discussions of women's responsibilities and how these discussions translated into the formation of women's education. Schneider's work is an example where science played a prominent role in shaping the roles and responsibilities of a modern woman.

Helen Schneider's work provides guidance to my reading of the *Linglong* magazine, particularly in the context it provides and its methods in reading magazines. In the first chapter, Schneider carefully examines a number of Republican period women's magazines. In these magazine articles there arises a societal imaginary about the modern and nuclear family. Whether or not readers' own home circumstances mirrored such a family, this vision of a modern, nuclear family life reflected a broader cultural sensibility that sought to break away from hackneyed lifestyles and embrace modernity.

Her work also oriented my reading of science in the *Linglong* magazine. While science was incorporated in educational curricula that trained female students to become home managers and professional workers, magazines and periodicals reached a wider audience and promoted new ideals of home management that incorporated scientific approaches. Science as presented in magazine articles differentiated from academic scientific disciplines by being more amorphous and wide-ranging. It also supplemented the academic study of science by appearing in more intimate and personal ways.

In Yun Zhang's study of science in Republican women's journals, she argues that magazine contributors employed newly emerging scientific and biomedical knowledge to

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<sup>12</sup> Helen M. Schneider, *Keeping the Nation's House: Domestic Management and the Making of Modern China*, (Vancouver, British Columbia: UBC Press, 2014).

emphasize individual experiences in the promotion of a modern and ideal woman.<sup>13</sup> In her study, we can see that science played an important role in the formation of modern womanhood. Yet her study focuses more on the utilization of biomedical knowledge to promote a healthful living and pays less attention to how *Funü shibao* conveyed scientific thinking to women and broadened their horizon more generally.

Finally, I offer a roadmap to my thesis. The first chapter provides background information on intellectual discussions on women's responsibilities and the design of their education. The second chapter focuses on the science in the women's magazine. The first section of the chapter provides examples of *Linglong's* incorporation of science in its articles. It explains the forms in which science appeared in the magazine, and how it reflected the characteristics of Republican-period science. Then, it shows that science in *Linglong* contributed to the construction of a modern woman in the way that it provided a basic yet intuitive sense for the scientific. Often appearing as the subsidiary to the main subject of articles, science often provided female readers with the skills to move beyond boundaries of cultural beliefs and knowledge structure. This chapter will look at scientific terminology and science in narratives of social phenomena.

I use the word "science" when I actually refer to "western science," and throughout the thesis I omit the word "western" and see the two as interchangeable insofar as the historical actors themselves perceived science as western science. This does not mean that I equate "science" with "western science," nor do I consent to the narrative of modernization, for which science was an element of modernity that only originated in Europe and from there spread to the rest of the world. My discussion includes the binary of the western science and traditional methods as it serves to clarify the distinction between pre-existing concepts and elements of modern science that came into the awareness of the general public during the Republican period. This distinction of western and traditional elements was not evidence to the argument of

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<sup>13</sup> Yun Zhang, ed., *Engendering the Woman Question: Men, Women, and Writing in China's Early Periodical Press* (Brill 2020).

the linear movement of science from the west to other regions. As Fa-ti Fan points out, non-western societies did not receive western scientific practices in the form of exact reproduction, and instead, their adoption was a “creative process of appropriation, translation and innovation.”<sup>14</sup> In my thesis, I include a section that examines the adoption and incorporation of western science into the *Linglong* magazine specifically. In fact, the appearance of science in *Linglong* reflects a mix of the *tiyong* model in the late Qing approach to science and popularization of science in the Republican-era. As I examine how science in *Linglong* displayed utility and practicality, the binary usage of western and traditional elements serves the purpose of displaying the process in which historical actors reacted to the influx of western science and integrated it with local practices. The *Linglong* magazine intimated that its readers should adopt and make use of western science with their own creativity.

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<sup>14</sup> Fa-ti Fan, “Redrawing the Map: Science in Twentieth-Century China,” *Isis* 98, no. 3 (2007): 524-538.

## Chapter 1

### Background

In 1915, Chen Duxiu (1879-1942) published a manifesto, “Call to Youth,” where he opened up to China’s youth on their ability and responsibility to reinvigorate and reform the society.<sup>15</sup> His proposed six principles put forth a set of contrasting elements and endorsed the independent over the servile, the progressive over the conservative, the aggressive over the retiring, the cosmopolitan over the isolationist, the utilitarian over the formalistic, and the scientific over the imaginative. These contrasting elements were both a repudiation as well as advice for the young as they were beginning to lead the new era. Chen urged the younger generation to reconsider the ancient teachings and pedestrian customs so that they could abolish existing ills and lead Chinese society towards modernity.

Chen unreservedly expressed that there was not one young Chinese who would be exempt from the responsibility of contemplating the nation’s future. Chen asserted that every young Chinese person must seek physical and moral independence and be discerning of signs and natural tendencies towards the servile. He wrote, “. . . all belief should be left to the natural ability of each person; there is definitely no reason why one should blindly follow others. On the other hand, loyalty, filial piety, chastity and righteousness are a slavish morality.”<sup>16</sup> In his argumentation, Chen underscored four moral qualities as factors that worked against individual independence. Of these four, three concerned Confucian ideals of the noble person (*junzi*), while the fourth, “chastity,” was different for being a specifically female moral dictate.

The last of the six basic principles that Chen proposed was the call for scientific inquiry. Chen drew the line between scientific pursuits and imaginative postulations. He classified

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<sup>15</sup> Chen Duxiu 陳獨秀, “Call to Youth” 敬告青年, 青年雜誌 1, no.1 (1915), quoted in Pei-kai Cheng, Michael Elliot Lestz, and Jonathan D. Spence, *The Search for Modern China: a Documentary Collection* (New York: Norton, 2013), 240-245.

<sup>16</sup> Chen Duxiu 陳獨秀, “Call to Youth” 敬告青年, 青年雜誌 1, no.1 (1915), quoted in Pei-kai Cheng, Michael Elliot Lestz, and Jonathan D. Spence, *The Search for Modern China: a Documentary Collection* (New York: Norton, 2013), 241.



“religion, art, and literature” as the products of imagination; in contrast, only scientific inquiry supported by “subjective reason” produced truth. Although “science” was not precisely defined, Chen nonetheless laid emphasis on its potentiality. Science was a means to facilitate societal progress, especially in relation to the four professions listed in the essay: scholarship, agriculture, business, and medicine, and these professional communities should reflect scientific pursuit as their predominant aim. In the context that he described, Chen did not give clear directions for how Chinese women, who largely had not entered professional settings, may pursue science. However, by foregrounding the importance of the pursuit of science, Chen’s interest in science stood in contrast to Liang Qichao’s conviction that financial independence was a prerequisite for women’s education and the improvement of their outlook. Chen implicitly pointed out that women should also prioritize science and acknowledge that science must take the place of backward thinking.

Chinese intellectuals who were active contributors in rebuilding and strengthening the nation shifted their expectations for Chinese women, particularly in their roles as wives and mothers. In reconsidering women’s relationship to the family and to the nation, intellectuals came to see women’s influence within the home as not limited to the family alone.

Intellectuals envisioned women’s education as a solution to larger national issues. Liang Qichao, in his 1897 essay, “On Women’s Education,” called for a nation-wide awakening for women’s learning. Liang argued that women should receive education so that they could perform their citizenry duties. Women’s participation in economic production would aid the nation; so too would their improvements of their homes directly shape the nation’s future.

Elites and educators had been considering educational reform and instituting a nation-wide educational system since the late Qing. The Board of Education reconsidered the purposes of education and associated education with the welfare of the state. In 1906, the Board of Education issued a document on new educational objectives and shifted the educational focus to cultivating well-educated citizens: “Looking at the educational systems of foreign countries

there are two main divisions: one is called specialist and the other is called general. But general education is given more attention. It does not lie in creating a talented few, but in creating a majority of citizens.”<sup>17</sup> Under this guidance, intellectuals devised a new ideal for the nation’s younger generation.

The general reorientation of educational objectives pushed women’s education to focus on utility and practicality. In the Republican period, the discipline of domestic science was the beginning of women’s public education. Educators took inspiration from home economics programs, first established at Simmons College in Boston in 1902, because they believed that home economics addressed Chinese women’s particular needs. Visualizing the field of home economics as a specialization of higher learning for women, Chinese curriculum designers devised the discipline to prepare women for their future role as modern housewives.

In discussing Chinese women’s education, Chinese intellectuals aimed to reflect this natural differentiation in the design of coursework so that they might develop women’s innate ability to the fullest. In the fall of 1923, Yenching University began accepting students in the discipline of home economics. Students enrolled in this program were taking courses in food, childcare, and sanitation, and the aim was to prepare them to manage the home. As the curriculum transformed over the decades, the program expanded to three specializations, home management (*jiating guanli*), home sciences (*jiating kexue*), and home arts (*jiating meishu*). It was training students who would be able to take on professional wage-earning positions. The department was founded by an American missionary home economist, Ava Milam, who carried a vision from her studies abroad. Her vision for the development of women’s education in China matched with those of Chinese educators.<sup>18</sup>

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<sup>17</sup> Donghua lu, Guangxu reign, 30: 5474-9, quoted in Paul Bailey, *Reform the People: Changing Attitudes towards Popular Education in Early Twentieth-Century China*. (United States: University of British Columbia Press, 1990), 39.

<sup>18</sup> Helen M. Schneider, *Keeping the Nation's House: Domestic Management and the Making of Modern China*, (Vancouver, British Columbia: UBC Press, 2014), 124.

Mediating between new western knowledge and old Chinese customs and tradition, Republican intellectuals employed new and modern ideas as they rethought women's role in the construction of a new nation. They outlined their idea with the phrase "good wife and wise mother" (賢母良妻 *xianmu liangqi*), which had existed as two separate terms in ancient times but were combined and reappropriated in the Republican period to convey a new focus on women's role in the home.<sup>19</sup> Liang Qichao, for example, justified women's education as necessary for nurturing physically and morally prepared mothers and family carers. For him, educated women would foster and maintain peaceful families and establish a good foundation for their children. Educator Jiang Kanghu also invoked the phrase in his discussion of women's education. Jiang expressed the expectation that women should learn national affairs so that they could assist their husbands in pursuing their goals.<sup>20</sup> Another educator, Chen Dongyuan, although he did not accept that Chinese women should be restricted to the space of the home inside, considered the phrase as a guidance to the future of women's education.<sup>21</sup> As simple as it may sound, the idea conveyed in this four character phrase was once the moral ideal to be attained by earlier Chinese women. In the Republican period, the phrase reflected a range of different opinions and ideologies on new women's civic duties that went beyond traditional ideas of Chinese women as wives and mothers.

In Republican magazines and newspapers, Helen Schneider has traced how a new vision of modern womanhood emerged from ongoing discussions of an ideal and modern family.<sup>22</sup> Intellectuals proposed an ideology for how the modern family should be run and home spaces managed and argued that the status of the domestic spaces represented the outlook of the nation. They saw women as key players in putting this ideology into practice. The modern

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<sup>19</sup> Helen M. Schneider, *Keeping the Nation's House: Domestic Management and the Making of Modern China*, (Vancouver, British Columbia: UBC Press, 2014).

<sup>20</sup> Paul Bailey, "Active Citizens or Efficient Housewives? The Debate over Women's Education in Twentieth Century China," in *Education, Culture, and Identity in Twentieth-century China*, (Hong Kong: University of Michigan Press, 2001), 318-347.

<sup>21</sup> Helen M. Schneider, *Keeping the Nation's House: Domestic Management and the Making of Modern China*, (Vancouver, British Columbia: UBC Press, 2014), 68.

<sup>22</sup> Helen M. Schneider, "The Ideology of the Happy Family, 1915-48" *Keeping the Nation's House: Domestic Management and the Making of Modern China*, (Vancouver, British Columbia: UBC Press, 2014), 20-56.

woman should direct her attention to tasks in domestic spaces and aim to create and maintain a functioning and healthful home. These basic tasks included domestic cooking and cleaning, raising children, managing emotions, making purchasing choices, and using labor.

The domain of women's responsibilities emerged from the belief that men and women diverged in their natural strengths and could both contribute to the nation if they were fitted with responsibilities in accordance to their natural inclination. The "natural characteristics" (*tianzhi*) of women, which included the ability to care for others and tendency to focus on the inner spaces, roughly marked their civic responsibilities.

## Chapter 2

### The Ideal Woman: Scientific and Savvy

Existing scholarship on *Linglong* has examined the magazine from a variety of angles. Scholars have considered *Linglong* and its readership as representative of the voice of the urban women in the 1930s.<sup>23</sup> The magazine was a place where one could find women of all ages being represented as popular icons of modernity and individualism. Seeing *Linglong* as integral to the construction of the model of a modern woman, existing scholarship has explored the magazine from a variety of angles, ranging from its use of photography and its conversations on fashion and women's physique to the image of the female student, and female duties in relation to family and the nation.

Scholars such as Li Keqiang and Zhang Peilin have shown how *Linglong* helped to connect women to modernity. In her 2000 article, Li Keqiang contends that the magazine's inspiring display of women was associated with the notion of modernity.<sup>24</sup> The modern woman should be gracious and sophisticated in appearance, willing to challenge pre-existing social limitations, and decorous in social etiquette. Li explains that the essays, photographs, and letter conversations created a welcoming and stimulating female public space that endorsed modernity. The magazine was a medium where women's voices and conversations could appear in public and transform into an aspiring ideal for its female readers. Li considers women's aesthetics and learning as the major points of discussion on the ways of life of a modern woman in the magazine. In contrast, Zhang Peilin explores *Linglong's* cultural significance by focusing on its engagement with the topic of sexual culture. In "Sexual Culture and Periodical Publication: A Case Study of *Ling Long*, 1931-1937" (性文化與期刊出版: 以《玲瓏》(1931-37)為例), Zhang shows how the magazine's treatment of the topic of sexuality can be periodized into

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<sup>23</sup> Li Keqiang 李克強, "Linglong zazhi jiangoude modeng nvxing xingxiang" 《玲瓏》雜誌建構的摩登女性形象 [Modern Women in the *Linglong* magazine], *Er Shi Yi Shi Ji* 《二十一世紀》雙月刊 60, (2000 Aug): 92-98.

<sup>24</sup> Li Keqiang 李克強, "Linglong zazhi jiangoude modeng nvxing xingxiang" 《玲瓏》雜誌建構的摩登女性形象 [Modern Women in the *Linglong* magazine], *Er Shi Yi Shi Ji* 《二十一世紀》雙月刊 60, (2000 Aug): 92-98.

three parts.<sup>25</sup> *Linglong* introduced to its readers the western scientific field of sexology and broached the topics of sex and physiology in ways that suggested, in her words, “the cultural scenery of a clash.” A discordant display of both Chinese and Western cultures in *Linglong*, she argues, resulted in the clash of new and traditional elements. Liying Sun, on the other hand, explores *Linglong*’s association with modernity through its photography.<sup>26</sup> Through her analysis of editor Lin Zecang’s publishing objectives and the presentation of nude images, Sun reveals how the editorial board deliberately attended to women’s interests so as to formulate a female readership.

Whether the topic of discussion was the pursuit for modernity, the extent to which women’s learning contributed to the nation, or many others, *Linglong* allowed a noisy women’s public forum to arise. In ways not plain to see, science was interwoven into the pages of *Linglong* and manifested its presence through Chinese interpretations and subjective conjectures on this largely foreign concept. A significant element of modernity, science was a part of modern life, as Li Keqiang has shown, that *Linglong* was proposing to the public in its pages.<sup>27</sup> Western science did not belong to Chinese pre-existing knowledge structures, nor in any way did it naturally fit into distinctively Chinese and literary prose writing. Science was rather carefully integrated into the pages of the magazine and took a natural and coherent presentation. Previous studies have traced various themes in *Linglong*, and at times touched upon the topic of science tangentially.<sup>28</sup> Yet to date, none have provided a comprehensive investigation on science. I will examine science and its influence on the magazine’s female readership in this chapter.

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<sup>25</sup> Zhang Peilin 章霽琳, “Sexual Culture and Periodical Publication: A Case Study of Ling Long, 1931-1937,” *Jindai Zhongguo Funiushi Yanjiu* 近代中國婦女史研究 25, (2015 Jun): 117-192.

<sup>26</sup> Liying Sun, “Engendering a Journal: Editors and Nudes in Linloon Magazine and Its Global Context\*,” Chapter 2, in *Women and the Periodical Press in China's Long Twentieth Century: A Space of Their Own?*, ed. Michel Hockx, Joan Judge, and Barbara Mittler (Cambridge: Cambridge University Press, 2018), 57-73.

<sup>27</sup> Li Keqiang 李克強, “Linglong zazhi jiangoude modeng nvxing xingxiang” 《玲瓏》雜誌建構的摩登女性形象 [Modern Women in the *Linglong* magazine], *Er Shi Yi Shi Ji* 《二十一世紀》雙月刊 60, (2000 Aug): 92-98.

<sup>28</sup> Western science was, for example, an important element in Zhang’s discussion of sexual culture in *Linglong*.

To explore the place of science in the pages of *Linglong* means encountering a complicated set of attitudes that combined an antagonism against past cultural constraints on women with an acceptance towards women's practical needs within the current constraints. One 1933 *Linglong* article was representative of this tension.<sup>29</sup> The article was an assessment of two prevalent views on whether a modern woman should labor within or outside the home. On one side, the argument was that women should stay within their division of work in the home, and on the other a forceful demand that women should achieve economic independence through working outside the home. Contending that both views were too theoretical, the article first affirmed the view that a modern woman should establish economic independence, because economic independence was their defense against "men's oppression and confinement" and the foundation of becoming a modern individual. And yet, the article also suggested that familial duties, including rearing children and cooking, should not be overlooked. It posed the rhetorical question, "who else would be able to take on the tasks in the home, if not women?" The article conveyed its dreams for a modern woman, while it admitted that they faced a dilemma between working in and outside of the home, between ideals and current needs. In the end, it was difficult for the writer to make any choice other than asserting that a modern woman should let go of neither. The article's ambivalence was evident elsewhere in the magazine.

Besides these conflicting attitudes, there was also a recognition of the need for women to catch up in self-growth if they were to be counterparts to men. In 1935, Song Meiling, who was then a leading figure of the New Life Movement, published a transcript of her speech in *Linglong* titled "The Civic Spirit of Self-sacrifice and Women's Responsibilities" (國民犧牲精神與女界責任).<sup>30</sup> In the speech, Song recognized college graduates and female listeners in her audience. She alerted them to the predicament of the nation and contended that their civic duty entailed serving the nation without reservation. Female citizens, she argued, should naturally take their part in contributing to the nation. Women must not neglect their duties as they could

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<sup>29</sup> *Linglong* 101(1933): 1015-1017.

<sup>30</sup> *Linglong* 196(1935): 1920-1923.

make their contributions in the home, at schools, and directly to the nation. Song especially pointed out that to achieve gender equality, instead of wandering pointlessly for change, the nation and the female population should prioritize women's learning and self-improvement. In spirit, practical knowledge, and outlook, women must draw level with men.

While intellectuals and officials discussed the question of female citizens and the younger generation, there was a parallel development occurring in print media, where magazines and periodicals constructed a creative place for urban educated women to access and perceive ideas of modernity, female citizenship, and foreign trends. The magazines were a place where ideas and concepts could be experimented, and at the same time, they were more closely tied to the everyday moments of its female readers. The magazine was also a place where ideas were disseminated and newest trends taking form.<sup>31</sup> As women's magazines picked up and celebrated scientific ideals, they helped create a public forum where ideas of science were selected to match the interests of a modern woman. On the other hand, women themselves looked for modern and scientific methods in magazines so that they could find the most efficient solutions to their tasks in the home.

*Linglong* grounded its readers in this new perspective in its articles of science. The magazine presented factual knowledge, yet its focus was usually not on teaching them scientific knowledge but rather giving them the tools to gain skills in the domestic realm and make connections with spaces outside of their home. *Linglong* told its readers that a modern woman should carry a new and scientific sensibility.

Science that appeared in *Linglong* aimed to define a modern woman who is able to 1) identify new and foreign terms and understand the context they appear in daily lives; 2) acknowledge that science allows them to find new explanations for various issues, which is better than how they used to make sense of things; and 3) make sense of these phenomena

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<sup>31</sup> Joan Judge, "Republican Ladies," in *Republican Lens: Gender, Visuality, and Experience in the Early Chinese Periodical Press*, (United States: University of California Press, 2015), 49-78.



themselves, though in a very basic and superficial level and for practical matters, and solve small problems for their family and others in the community.

Chinese women were confident in their own distinctive way of handling issues and making sense of various phenomena. They made observations and thought through processes that they observed. However, their ability to describe their observations were bounded within the existing cultural framework and predetermined by language. While the readers were flipping through the pages of *Linglong*, what they received was not the simply and narrowly classified knowledge. The different forms of science that defined a modern woman did not derive from teaching them factual knowledge but rather by introducing ways for its readers to think and act. For Chinese women, science was an awareness yet-to-be found and actualized in their mind.

*Linglong* essays put its readers in a scientific language context. It did so in a few ways: it exposed its readers to the terminology of science, familiarizing them with its basic components of language; it introduced the logic of science through descriptive and explanatory texts, and meanwhile as it took its readers out of the social context where traditional logic grew, it was a tool that provided its readers with the freedom to make new interpretations. *Linglong's* textual world associated science with practical scenarios so that the abstract settled into an applicable and ready-to-use form for the magazine readers.

### The Appearance of Science in *Linglong*

Science in the Republican period appeared as a large and amorphous notion. In magazines, ideas of science were selected and transformed into quotidian and approachable knowledge. Often appearing in the column of “Changshi” (common knowledge) in the *Linglong* magazine, science was well-integrated into a collection of common knowledge for women, as displayed in its name. The character *chang*, which is a literal translation of “common,” can be extended to mean routine (常规 *changgui*), the order of things (伦常, 纲常 *lunchang* or *gangchang*), and constancy (恒常 *hengchang*). These various meanings of *chang*, when taken

together, direct one's attention towards the anticipated and orderly daily activities that accompany one as one performs the principal tasks in life. Concretely, the *changshi* column, which gathered practical methods and useful ideas in home management, was designed for those who dealt with home affairs. The column was an eclectic and all-embracing collection, which included introductory essays on the nature of items such as rivets, soy sauce, tooth, lemon, rust, radio, baking soda and vitamins; explanatory essays on a phenomenon such as why a radio might emit a low volume of sound, the symptoms of tuberculosis and other epidemic diseases, and psychological reasons behind committing suicide; and essays on how to resolve an issue, such as how to get rid of ink spots, how to prevent infectious diseases, how to resolve insomnia, how to determine the gender of a newborn, and how to protect oneself from gas-filled bomb (毒氣砲).<sup>32</sup>

The fact that *changshi* was a separate functioning column displayed the editors' intention to instill modernity. Western science as it appeared in this column was a source for learning new practices and skills. Science during the May Fourth Movement was a major element adopted to dismantle Chinese traditions and achieve modernity. In the *Linglong* magazine, the *changshi* column was placed alongside articles on women's concerns about relationships with men, love and marriage, and beauty. These articles often explored a new womanhood using elements of modernity. Science was reshaped and selected to not only meet women's concerns, especially for familial affairs, but also reorient their behaviors and lines of thinking.

In many instances, essays in this column experimented with the adoption of western scientific ideas and integrated them into traditional methods. This was often seen in essays that presented simple remedies so that readers could self-diagnose small illnesses and offer easy treatments. These remedies were often presented in phrases or brief sentences. In 1932, one essay gave advice on resolving several skin conditions.<sup>33</sup> Each skin condition was listed as a

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<sup>32</sup> *Linglong* (1931-1937).

<sup>33</sup> *Linglong* 78(1932): 1310.

single entry where the writer, in some instances after providing a brief summary of symptoms, presented a remedy for resolving the condition. A close analysis of the remedies reveals how the author mixed local and western elements, be they specific substances or the units of measurement. The first remedy for treating freckles, for example, involved a series of ingredients whose foreignness was evident in their names and the use of grams. It suggested mixing 0.2 grams of potassium cyanide (青化鉀), 25.0 grams of salicylic acid (楊酸), and 4.0 grams of *suanmao* wine (possibly sour wine of blister beetles, 酸蝥酒). Once these three ingredients were well mixed, 12.0 grams of glycerol (甘油) was added, poured into a glass jar, and then mixed with a glass stirring rod. Finally, an appropriate amount of *le wen da* wine (possibly lavender wine, 勒文達酒) was added until the mixture reached a thin consistency. In contrast, the ingredients and preparation process for a remedy for bad breath were more demonstrably Chinese: it asked for one tael of sharp-leaf galangal fruit (益智) and two mace of liquorice root (甘草), finely ground into powder form medicine. One mace of this powder was to be taken in the mornings and evenings.

This essay is representative of many instances where the writer used a mix of scientific and Chinese elements to present a unified and orderly approach. In other essays, writers presented disparate entries to resolve one issue; or, they combined elements of mixed origins to present another remedy. As they selected local and scientific approaches, the writers of these articles did not contest the validity of one or another approach. In other words, they adopted science as they saw fit to set forth a solution. For magazine readers, both local and western remedies were equated to the latest and modern solution without differentiation of cultural or medical origin. In these essays, both magazine editors and readers saw that science could be placed in tandem with traditional approaches. The adoption of scientific approaches was an unsystematic process of collection and synthesis.

At other times, these essays created their own line of reasoning as they latched onto local approaches and merged with western models. In doing so, the writers adopted scientific and

modern approaches while they formulated such ideas that were more intimate and accessible to Chinese readers. Published in 1937, an essay titled “The Science of Winter” proclaimed that it utilized science to explain bodily changes in cold weather.<sup>34</sup> Raising awareness of three physiological changes during winter, the essay stated that blood circulation was critical to understanding these changes and recounted their pertinence to other bodily states and sensations, particularly sleep and feelings of warm and cold. The author posed three questions: why does one’s body produce more urine in winter, why do hands and feet remain cold, and why do blood vessels contract? For the first two questions, the essay described that blood vessels under the skin would contract as one’s body was exposed to low temperatures. It explained that blood circulation slowed down as blood vessels contract, and therefore, one would feel coldness in hands and feet. The essay also drew on the idea that blood deficiency was directly related to one’s sensations and well-being. It argued that during the winter season, the lack of blood circulation would lead to an excess of blood in the brain, and thus one would not sleep very well.

Tracing blood in the history of Chinese medicine, Bridie Andrews has shown that meanings of blood in Chinese medicine and the ways in which people perceived the function of blood shifted. In the period between 1850 and 1950, western missionaries and Chinese writers translated western medical works and synthesized Chinese and western observations of the human body. The idea of blood circulation as a critical factor of bodily well-being was present in an earlier popular physician’s handbook, *Hooper’s Physician’s Vade Mecum: A Manual of the Principles and Practice of Physic; With an Outline of General Pathology, Therapeutics, and Hygiene*.<sup>35</sup> The first edition of this English medical manual was published in London in 1809, and the last English edition in 1886. The Chinese translation of the text, published in the 1880s in the Jiangnan Arsenal, placed blood as the kernel to thinking about illnesses and therapies. As

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<sup>34</sup> *Linglong* 273(1937): 428-430.

<sup>35</sup> Bridie Andrews, “Blood in the History of Modern Chinese Medicine,” in *Historical Epistemology and the Making of Modern Chinese Medicine*, edited by Howard Chiang (Manchester: University of Manchester Press, 2015), 113-36.

an earlier scientific approach to understanding bodily functions, the emphasis on blood was also reflected in the *Linglong* essay.

“The Science of Winter” did not end at blood circulation to the brain. Instead, the scientific explanation of blood circulation was inserted into the context of cultural attributions regarding the natural state of women. In the paragraph that followed, the essay referred to the phrase “head cold and feet warm”(頭冷腳熱) and stated that this was the idiomatic expression for a healthy state of people (implicitly men). It further stated that for fragile and elderly people, and women whose “innate state was cold” (冷性), their natural state would not be as described by the phrase “head cold and feet warm.” In other words, the cultural attribution of women being naturally cold would make them more inclined to be affected by cold weather. For a healthy, male body, their head was naturally cold, because there was no excess of blood present; for women, their bodily state of coldness and insomnia was closely linked to a deficiency of blood in the limbs and an excess of blood in the head. In this essay, the notions of cold and warm, which were linked to a lack of blood circulation, were not distinguished from bodily sensations of coldness. Rather, they were intermingled to present a coherent explanation. Adopting a western medical approach, the author saw it as natural and most fitting to present their own invention of a medical explanation.

Science also came into the *Changshi* column in different forms - it was indicative of the magazine writers’ experimentation with scientific ideas and the ways in which they could be appropriated into an unknown and shifting women’s sphere. As the roles of Chinese women aligned with ideals of modernity, science became a necessary element of their everyday lives.

### Knowing the Language of Science: Terminology

*Linglong’s* modern woman should be curious about terms from different scientific disciplines. When she met new and foreign terms, she would learn their names, basic functions, and their associated settings. When she was working on her daily duties at home, she should

know that the tools that these terms referred to came from an authoritative source and were trustworthy for her to use. With this in mind, we can see that the magazine introduced new terminology to familiarize its readers with scientific concepts that could improve the quality and efficiency of everyday tasks and break the limit of their perception of everyday objects.

In the magazine, scientific terms and other originally Chinese characters often formed homogenized and consistently fluent Chinese sentences, despite their differing tonality as a result of their being translations of foreign terms. In many instances, these terms were not taken apart and given separate explanations or definitions. In fact, separate definitions would not serve the purpose. Their way of coming into a flowing array of other Chinese characters and phrases allowed magazine readers to build their own grasp of usage and meaning of the terms according to the subject of the specific articles.

In 1932, an essay, “Economical Supplemental Food” (經濟的補品), used the terminology of nutritional substances to support its recommendation of certain foods over others.<sup>36</sup> It also provided a guideline for selecting *bupin*, a group of foods that were characterized as supplementing other foods that served to fill one’s stomach. The essay recommended foods that contained nutritional substances, such as chicken eggs, cow’s milk, and soybean curd, over traditional supplemental foods, such as ginseng and velvet antler because the former contained nutritional substances such as fats, protein, lactose, and minerals. While the essay claimed that the traditional *bupin* were unworthy of their prices because the value of food should be determined by its nutritional contents, these new types of nutritional foods were also categorized as *bupin*, suggesting that these foods could perform a similar function as the previous, more traditional forms of food. This method of searching for foods smoothly fitted in the traditional beliefs for the function of *bupin*. For readers, they could easily assume that the function of foods that contained new nutritional terminology suited their perception of *bupin* in a traditional sense. On the other hand, in introducing the terms of nutritional substances, the

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<sup>36</sup> *Linglong* 70(1932): 927.

essay was putting forth a sense for the scientific that functioned with a separate and independent logic than the previous, more traditional beliefs on what could be considered as contributing to one's well-being. In this sense, the ways in which readers should look for appropriate supplemental foods shifted to a focus on terminology. These terms, carrying new ideals of healthy and modern living, were representative of the value of foods that contained them. A modern woman would be able to recognize that foods contained these nutrients and therefore would not need to search out other, more traditional supplemental foods.

Another 1932 essay, "Common Knowledge in Chemistry" (化學常識), introduced its readers to the names of chemical substances using basic methods of chemical experiment.<sup>37</sup> The magazine opened with the line, "it is fine if cotton textiles and wool are stained with a small amount of acids. But they will change quite a lot if they meet sodium hydroxide." Immediately creating a lively setting, the essay placed chemical substances such as "acids" and "sodium hydroxide" amongst textiles that women tended to be familiar with. Using a few different textiles, such as wool, cotton, linen, as the experiment board, the essay made sense of the substances by briefly commenting on the reaction of the textiles. The essay pointed out that for the same substance, different textiles may react "in an opposite way." It also differentiated the reactions by strength and ranked them as "not of concern", "change", or "obvious change." The essay mentioned a few obscure chemicals, and without explicitly describing their reactions or their composition, the author paired them with a textile and stated that the textile "should be used with" this type of chemical. The essay shifted its focus from pairing textiles with chemical substances to introducing more chemical substances. They served a common purpose of removing a stain from a no longer specified and generalized textile, "cloth." The essay also deliberately presented and graded the reactions. In different sections, there were appropriate real-life settings and materials for which the chemicals can be understood, played with, and possibly put into use. Upon the creation of game-like scenes using common items, this essay

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<sup>37</sup> *Linglong* 63(1932): 591.

explained the mechanism of chemical experiments, where the terms of chemical substances were its key.

Two years later, in 1935, *Linglong* continued to promote science to women by stressing the necessity of identifying scientific terms. In addition, the magazine also allocated more space to this objective so that it could provide full commentaries on specific terms. For instance, the subject of an essay published in issue 184 was vitamins. The title of the essay posed a question: “What is ‘Vitamin?’” (何謂「維他命」?)<sup>38</sup> In a relatively longer essay that covered three full pages of the magazine, the author Li Mingzhu dived into nutritional science and gave an account of this nutritional substance - the vitamin. The fact that vitamins were not perceptible through the human senses, the essay argued, did not mean one should not believe that it existed. Instead, this substance was analogous to a group of other nutritional substances, such as protein, fat, carbohydrate and salt. More so than previous essays, this essay did not treat the term “vitamin” as a single obscure concept and instead explicated four types of vitamins. For each type of vitamin, the essay summarized in which foods the vitamin could be found and the illnesses that resulted from its deficiency. The validity of vitamins was also proven, as the essay pointed out, by scientists who had conducted “chemical analysis.” The exploration of vitamins was more refined, and more structured scientific knowledge began to take shape.

In the same year, another essay discussed vitamins.<sup>39</sup> The essay promoted tea, because vitamins were discovered in none other dried products except for tea. The article underscored the significance of this discovery to the prevention of minor illnesses, such as anemia. The fact that vitamin C could be found in tea demonstrated to the magazine readers that an obscure substance, derived from western scientific research, was not in fact alien to their everyday lives. It was there in products they consumed on a regular basis.

Taking terminology out of the context of scientific discipline and introducing it to women was not in and of itself surprising, but the process of identifying and learning terminology gave

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<sup>38</sup> *Linglong* 184(1935): 1093-1095.

<sup>39</sup> *Linglong* 213(1935): 4000-4001.



women practical knowledge that could be applicable to daily lives, and more importantly helped demystify western science. *Linglong* did not aim to systematically teach women scientific knowledge. In essence, its treatment of science was still disorganized and sometimes amounted to haphazard pieces of information. And yet, these scientific terms also lent women a bridge to understanding various disciplines of science. They placed women in a particular mindset that they would not have gained without encountering and seeing their realistic capabilities.

### Adopting Science in Practice: Making Sense of Social Phenomena

The modern woman should also adopt new approaches as they encounter social phenomena. During the Republican period, a clash of traditional and modern gender roles contributed to the rise in female suicide. Newspaper publications of female suicide incidents and the results of social surveys increased public perception of suicide as one of society's ills. May Fourth intellectuals saw female suicide as the result of women's oppression by the patriarchal tradition. Female suicide was often phrased not as the decision of the individual, and women's virtue was often seen in the context of dignity of her family.

In the Ming-Qing times, female suicide was a public gesture.<sup>40</sup> A woman's decision to let go of her life was often seen in relation to her marital and familial status. Widows who committed suicide following the death of their husbands were praised for their high moral character. This tradition of publicly naming and rewarding members of the local community for Confucian virtues continued beyond the dynastic period and into the twentieth century. Katherine Carlitz suggested that one of the causes of Republican female suicide was the clash between emerging ideals of gender equality and persisting celebration for faithful wives and virtuous women.<sup>41</sup> Women were rewarded official honors from the Republican government for such qualities as fidelity (*jie* 節), *zhenlie* (ready to die to preserve one's chastity 貞烈), filiality

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<sup>40</sup> Paul Ropp, ed., *Passionate Women: Female Suicide in Late Imperial China* (Brill 2001), 3-21.

<sup>41</sup> Katherine Carlitz, "The Role of Gazetteers in Promoting Suicide in Republican China," *Journal of Oriental Studies* 46, no. 2 (2013): 1-21.

(*xiao* 孝). Local literati established the reputation and pride of their local county as they compiled biographies of eminent scholars, filial sons, and virtuous women in county gazetteers. Despite a dramatic shift in political regimes in 1912, there remained a social expectation for continuity with the past. Traditional ideals of a woman's virtue still met social needs.

And yet Republican-period female suicides were also different, because the broader media environment treated them differently. Mainstream newspapers captured incidental events of female suicide and through steady coverage put on the impression that the nation was plagued by a suicide epidemic.<sup>42</sup> As a popular magazine for women readers, *Linglong* played its own part in this emerging trend of print discussion on female suicide. In issues 74, 76 and 245, the magazine included essays on this topic and presented female suicide as a problem that a modern woman should be able to use scientific means to make sense of and resolve on their own. The magazine presented female suicide not only as a problem of men and society that must be resolved by men, but also as one that women should take an active part in helping to tackle for their female friends and kins.

In a 1936 essay that covered several pages of the magazine and titled "Suicide and Psychological Assistance" (自殺與心理救濟), female suicide was approached from three points: the twisted mindset of the suicidal, criminalization, and how to perform a psychological rescue.<sup>43</sup> The essay began with a call to attention on suicide,

"Suicide has become a serious societal phenomenon. While its reasons are complicated, its influence on society deserves the same amount of attention. But it is very difficult to help on the issue of suicide, and we should especially avoid criminalization. The only intervention to suicide is psychological assistance.

The psychological explanation of suicide is that one has expected too much from oneself. Most hopes come from one's belief in one's ability or social status, as well as other added factors or relationships. When one thinks that one's hopes should be easily fulfilled, and they turn out not, one loses one's

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<sup>42</sup> Peter J. Carroll, "Fate-Bound Mandarin Ducks: Newspaper Coverage of the "Fashion" for Suicide in 1931 Suzhou," *Twentieth-Century China* 31, no. 2 (2006): 70-96.

<sup>43</sup> *Linglong* 245(1936): 2048-2052.

mind. One's nerves are tested. If this is not properly resolved so that one can handle the distress, one might go on the path to suicide."<sup>44</sup>

In explaining the individual rationale behind suicide, the essay looked at those with suicidal thoughts as individuals as opposed to seeing them as primarily defined by their relationship to men or family. It underscored the will of the individual as determining the decision to commit suicide. Psychological analysis was an approach that addressed the issue at the level of the individual. On the other hand, the article still acknowledged that the root problem of female suicide was associated with expectations related to social and familial relationships. The well-being of the individual was associated with their social surroundings. Problems from irreparable relationships and social expectations could not be easily resolved without a fundamental uprooting of social norms, so it encouraged women to proactively tackle this issue through scientific means. In the context of psychological well-being, the essay defined those whose mind and spirit were agitated as the mentally ill (*jingshenbing*). Then, it proposed a few ways to release one from the state of distress. In performing psychological analysis for oneself and others, the essay encouraged its readers to attend to members beyond one's immediate family. It opened a path to preventing female suicide without social assistance or reliance on men. Instead the act of reasoning through the causes and solutions helped acquaint readers with the difficult situation and directed readers' attention to the issue of gender. In other words, by designating female suicide a social phenomenon, women were encouraged to see themselves as responsible for caring for themselves and others.

In a similar fashion, the magazine's treatment of tuberculosis also emphasized the importance of women recognizing their role as caring for themselves and others, but with a focus on specific behavioral changes.<sup>45</sup> Scientific practices often manifested in assisting women

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<sup>44</sup> Ibid.

<sup>45</sup> In 1933, a group of China's medical leaders, including Liu Ruihen, Yan Fuqing, Wu Liande, Diao Xinde, and Niu Huishen formed the National Anti-Tuberculosis Association of China (Zhongguo Fangjiao Xiehui, NATAC) and popularized the idea that China was embroiled in the tuberculosis epidemic. In the absence of a governmental program on tuberculosis, the association was dedicated to providing information on the transmission of the disease through public lectures, education for factory workers, merchants, and students. A focus of the anti-tuberculosis movement was to raise awareness and reduce daily and trivial habits that worked against the ideals of cleanliness.

to make the correct choice. *Linglong* echoed calls for behavioral change as advocated by those in the anti-tuberculosis movement, and at the same time, it believed that its readers should possess a more thoroughly scientific understanding of the disease. In issue 94, 131, 133, and 191, the magazine published articles on tuberculosis. The essay in issue 133 was a comparison of the three symptoms that indicated tuberculosis and provided a series of observations for each. Under the subsection on cold (*shangfeng*), the essay explained that a person may display the symptoms of having caught a cold that repeatedly ameliorated and exacerbated on its own. The nature of the recovery cycle often misguided the sick to overlook the illness, and in extreme cases, resulted in the loss of one's life. The essay warned its readers to take precaution against such illnesses and keep a keen eye on the development of this specific type of tuberculosis. In contrast, the second subsection explained that the most common type of tuberculosis displayed symptoms that resembled bronchitis, so one could more easily diagnose their illness with an X-ray or blood inspection. The differentiation of the three types of tuberculosis followed a western medicine classification of diseases. The essay did not intend to provide a reliable diagnostic procedure through its descriptions of symptoms as they only provided rudimentary explanations for its readers. Rather, the essay's focus on these three symptoms sought to alert its readers of the hidden differences and thereby avoid misdiagnoses. Science did not play the predominant role in informing the details of the matter, but it provided the overarching guidelines, which one should follow.

The presence of scientific terminology alerted female readers to the fact that traditional knowledge should not be the only source from which they could find answers as they attended to their daily tasks. Scientific terms were not only the carriers of another much larger knowledge structure but also, through immediately useful and practical methods and everyday objects, gave female readers the tools to accurately speak and exchange their beliefs about science in ways they had not been able to do so. Terminology was the most straightforward manifestation of science in *Linglong*. Science in *Linglong* also shaped a modern woman's behaviors. When a

modern woman adopted the scientific, she was adopting novel principles that functioned in ways inseparable from the local norms and beliefs.

One issue included a short anecdote titled “When the Whale Collided with the Steamship,” which appeared as a floating box on the page.<sup>46</sup> The anecdote was intended to be didactic and presented in a similar form to traditional Chinese fables. In the moment before a brutal collision, the sailors on the steamship discovered an unrecognizable blurry shape in the ocean. Steering the ship as they would normally on any typical maritime journey, the sailors were unprepared in the event of a crash and found themselves in shock. In their examination of the accident, they discovered that their ship was unscathed, but the incident took the life of the whale. Beneath the main title of the story, there was a six character phrase that provided a succinct summary of the story: “The Flesh cannot Conquer the Steel” (肉體不敵鋼鐵). There was an element of unexpected loss and trauma in this story, as foretold in many Chinese fables, and yet, the emphasis lay not on the loss but on the ways in which past troubles always illuminate the path forward. The whale and the steamship were symbolically figured as flesh and steel, and their physical collision represented a more epistemic clash between status quo and progress. One should build an intuition towards the winning icon. This anecdote was a representation of the emotional affinity and closeness for the scientific.

On a magazine page filled with affectionate and expressive writings about fashion and love relationships, the parable tinted the colorful page with a bit of shock and a slight sense of grief. What “the steel” represented specifically was left unstated. Science appeared in indeterminate and inconsistent forms in *Linglong*. The magazine provided a space where ideas of science were tested and molded into concrete forms.

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<sup>46</sup> *Linglong* 65(1932): 708.

## Conclusion

*Linglong* gave its readers the key to seeking a modern and scientific way of life. Science almost consistently appeared in *Linglong* throughout its seven years of publication. Yet for female readers, they most likely did not find themselves learning a separate branch of knowledge but rather encountered unsurprisingly familiar narratives of everyday scenarios. The voices within *Linglong* resembled that of a close friend or an elderly sister who had broken down a complex issue into simple steps. Science appeared in the guise of typical and everyday objects and stories that reduced the threshold to learning scientific knowledge and facilitated the popularization of science in the form of everyday behaviors.

Republican intellectuals reconsidered the role of women in accordance with the goal of nation-building. The development of women's new responsibilities marked a continuation from the distinction of inner and outer spaces in the Chinese tradition, which corresponded to the differentiation of the activities and responsibilities of men and women. While tasks were not distinctly distributed between men and women, the generic sense was that Chinese adolescent women remained indoors, and with adulthood their major daily activities originated and flourished in the inner spaces, the major domain where women spent their time and attention. Meanwhile, women were no longer exempt from opportunities for public education. The design of the discipline of women's higher education reflected an attempt to prepare women for the needs of a modern family. Educators believed that the modern woman was a manager of domestic spaces and care-takers of her family and communities. The design of Chinese women's education, the home economics discipline, often incorporated scientific techniques and knowledge in its courses in home-managing tasks.<sup>47</sup>

The Republican period was the time when science gained more popular awareness, and the foreign concept gradually entered the minds of commoners who were not involved in a

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<sup>47</sup> Helen M. Schneider, *Keeping the Nation's House: Domestic Management and the Making of Modern China*, (Vancouver, British Columbia: UBC Press, 2014).

scientific profession. The appearance of science in *Linglong* often accorded with the practical intention of the articles. Although science often contributed important messages in an article and was more than an accompaniment to the rest of the article, it seldomly appeared as the singular focus of its own articles. The forms in which science appeared fluctuated in correspondence to the purposes of the articles and how foreign knowledge could be smoothly incorporated into a coherent and presentable tale. These forms of science displayed deliberate selection and reorganization and represented efforts to creatively adopt components of a vast concept for utility. Although in most times science was a minor component of *Linglong*, if one took a general glance at its contents, science nonetheless played a significant role in creating a bridge to modern ideas to the common female readers.

Science in *Linglong* illuminated how a modern woman should shape her thinking and behavior. It was the building blocks of an intuition that a modern woman should possess. Specifically, two forms of science assisted in the process of taking female readers out of the cultural and linguistic boundary of perception and norms of behavior. New terminology in *Linglong* articles were at times carriers of ideals of modern lifestyle, and at other times, they were also venues by which female readers could grasp the basic operation of science. Science, when carried out through the discussion of a social phenomenon, was often a point of view and a line of reasoning. Ideas of science carried its own logic of approaches, yet they did not function on its own. Female readers adopted new methods to make sense of their surroundings, and in doing so, they were no longer the followers of existing local patterns and behaviors.

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