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### The Shanghai Polytechnic Institute: How Did the Chinese Respond to ‘Western Learning?’

As the brainchild of Christian Missionary Walter Medhurst, the Shanghai Polytechnic Institute was established to “enlighten the Chinese” by spreading Western ideas in China and funded by foreigners and Chinese merchants and officials.<sup>1</sup> As one of the Institute’s administrators, the Polytechnic served as John Fryer’s most ambitious mode of spreading Western science to the Chinese.<sup>2</sup> The Shanghai Municipal Council controlled the Institute, formally established in 1876, marking a significant milestone for the Self-Strengthening Movement in China, which stemmed from internal and external conflicts. These conflicts, which included the domestic Taiping Rebellion from 1850 to 1864 and wars with foreign countries like Britain, weakened the power of the Qing government.<sup>3</sup> In contrast to the sophisticated natural Chinese philosophy, the Institute taught Western science to Chinese students in fields such as alchemy, astronomy, and medicine. Viewed as a tool for national defense and power that the Chinese lacked, foreigners and Chinese elites saw technology as the solution to the Qing’s problems.<sup>4</sup> Chinese officials Zhang Zhidong, Zeng Guofan, and Li Hongzhang “led these efforts to expand the military capabilities” of the Chinese, relying on Western modernization to

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<sup>1</sup> "Public Meetings: Opening of the Shanghai Polytechnic Institution." *The North – China Herald and Supreme Court & Consular Gazette (1870-1941)*, June 24, 1876. <https://login.proxy048.nclive.org/login?url=https://www.proquest.com/historical-newspapers/public-meetings/docview/1320160254/se-2>.

<sup>2</sup> Jonathan Spence, *To Change China: Western Advisors in China, 1620-1960* (New York: Penguin Books, 2002), 153.

<sup>3</sup> Benjamin A Elman, “Protestants, Education, and Modern Science to 1880,” In *On Their Own Terms: Science in China, 1550-1900*. (Cambridge: Harvard University Press, 2005), 281-319. <https://www.proquest.com/legacydocview/EBC/3300298?accountid=10427>

<sup>4</sup> Knight Biggerstaff, “Shanghai Polytechnic Institution and Reading Room: An Attempt to Introduce Western Science and Technology to the Chinese,” *Pacific Historical Review* 25, no. 2 (1956): 127-28. <https://www.jstor.org/stable/3635292>.

strengthen the Chinese military for the state-building of the Qing dynasty.<sup>5</sup> Leader of the “Self-Strengtheners” in the 1860s, Zeng Guofan, suppressed the Taiping Rebellion, yet, as a result, realized “the peril the [Qing] dynasty faced without modern steamship and firearms technology.”<sup>6</sup> Zhang Zhidong, the governor of Liangguang province, created a comprehensive Western-style military academy that combined Confucian values, the Qing government’s official religion, and Western techniques and training for the “Self-Strengthening Army.”<sup>7,8</sup>

Historians David C. Wright and Knight Biggerstaff discuss Fryer’s role in founding the Institute and later serving as one of the Polytechnic’s administrators. In addition, they discussed how the school balanced Western science and Chinese thought, as well as why “modern schools” opened in China.<sup>9</sup> The Institute held a quarterly essay competition between 1886 to 1894 with over eighty questions raised by Chinese officials during this period, focusing predominantly on issues dealing with current affairs and Western learning. Wright and Biggerstaff highlighted the importance of the essay scheme for revitalizing the failing Institute, yet neither includes translations in their analysis. Yuezhi Xiong and Phoebe Wai provide a few translated competition essays, stating how the essays include varied responses to Western learning—some welcoming, some skeptical, and some oppositional. “Examination papers of the Shanghai Polytechnic Institute recorded all these responses.”<sup>10</sup> These essays provide a valuable lens into

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<sup>5</sup> Adam Chang, "Reappraising Zhang Zhidong: Forgotten Continuities During China’s Self-Strengthening, 1884-1901", *Journal of Chinese Military History* 6, 2 (2017): 157-192, <https://doi.org/10.1163/22127453-12341316>.

<sup>6</sup> Wright, David. “The Translation of Modern Western Science in Nineteenth-Century China, 1840-1895.” *Isis* 89, no. 4 (1998): 653–73. <http://www.jstor.org/stable/236737>.

<sup>7</sup> Chang, "Reappraising Zhang Zhidong."

<sup>8</sup> Liangguang province is the Chinese term for the Guangdong province, located in southeast China.

<sup>9</sup> David C Wright, “Science as Public Spectacle,” In *Translating Science: The Transmission of Western Chemistry into Late Imperial China, 1840-1900*. (Leiden, The Netherlands. Koninklijke Brill NV, 2000). <https://books.google.com/books?id=DyNXEAAAQBAJ&lpg=PR1&pg=PR4#v=onepage&q&f=false>; Biggerstaff, “Shanghai Polytechnic Institution and Reading Room,” 127–49.

<sup>10</sup> Yuezhi Xiong & Phoebe Wai. “Shanghai Polytechnic Institute: The Home of Science.” In *Eastward Dissemination of Western Learning in the Late Qing Dynasty*, (Honolulu, HI: Enrich Professional Publishing (S) Private, Limited, 2013), 73. <https://ebookcentral.proquest.com/lib/kcl/reader.action?docID=3238211&ppg=74>.

what many Chinese students considered modern based on their responses to Western science, values, and systems. As the *North China Herald* periodical titled “The Polytechnic Essays” highlighted, these essays did not always affirm this Western lens.<sup>11</sup> The *Herald* played an important role in Shanghai, serving as the prime English-language newspaper for the foreign presence in China from 1850 to the 1940s. As such, I have utilized the *Herald* extensively as a primary source, recognizing the newspaper’s positionality but also the usefulness of the source.<sup>12</sup>

In this research paper, I will analyze newspaper articles on the Institution, reports of the school, and the competition scheme essays to uncover some of these perspectives on Western learning, attempting to answer the question of the response to Western learning during Fryer’s time at the Institute from its founding in 1876 until 1896. Using Yuezhi Xiong and Phoebe Wai’s article as a framework for my research, I build upon their work by similarly contending that the competition essays provide a valuable lens to analyze the responses to Western science and assess the success of the Shanghai Polytechnic.<sup>13</sup> By reviewing these primary sources during this two-decade-long period, I will demonstrate, as Wright argued, that the Shanghai Polytechnic Institute failed in its objectives, but the Institute also failed to change the minds of many Chinese. Instead of ringing in Western modernization for China, the Shanghai Polytechnic Institute’s competition essays serve as a window into the varied reactions of the Chinese to Western science during the Self-Strengthening Movement in China.

In 1874, Walter Medhurst wrote to the *North China Herald*, proposing a Chinese Reading Room with the object “to extend the knowledge of the Chinese in regard to Foreign

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<sup>11</sup> “The Polytechnic Essays,” *The North - China Herald and Supreme Court & Consular Gazette (1870-1941)*, Nov 01, 1889. <https://login.proxy048.nclive.org/login?url=https://www.proquest.com/historical-newspapers/polytechnic-essays/docview/1320787845/se-2>.

<sup>12</sup> “The North China Herald Online”. In *The North China Herald Online*, (Leiden, The Netherlands: Brill, n.d. ) accessed Apr 29, 2023, <https://brill.com/view/db/ncho>

<sup>13</sup> Yuezhi Xiong & Phoebe Wai, “Shanghai Polytechnic Institute: The Home of Science,” 73.

countries and topics generally, and thereby to promote good feeling between Foreigners and Chinese.”<sup>14</sup> Wright argued that Medhurst believed spreading Western science to the Chinese would shine a better light onto the Westerners than the Opium Wars had, hoping to get the Chinese public to support more free relations with foreign countries.<sup>15</sup> This hope suggests that Medhurst thought that more open relations with China would presumably lead to better economic and financial gain for the European countries. The opening announcement for the Shanghai Polytechnic in June of 1876 stated that the goal was to “enlighten the Chinese” and “develop in them a taste for the progress and civilization of the West.”<sup>16</sup> John Fryer and Wang Tao became the Institute’s administrators, but early failure, lack of interest, and a near-deserted Institute receiving few visitors by 1885 nearly led to the Institute’s closing.<sup>17</sup> The following year, in 1886, Fryer and Wang saved the Institute with the prize essay competition. By 1890, a column piece titled “The New Departure at the Polytechnic” in the *North China Herald* described the power of the essay competition, “calculated to become a powerful lever, properly and judiciously used for the intellectual uplifting of China.”<sup>18</sup> In 1891, the *North China Herald* labeled the essay prize scheme as one of the “most powerful lever[s] in the hands of the Polytechnic Institution for the enlightenment of China. It admirably carries out the object for which the Institution was established.”<sup>19</sup> Paul Cohen states that Wang played a vital role in this success, garnering the

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<sup>14</sup> Wright, “Science as Public Spectacle,” 129.

<sup>15</sup> Wright, “Science as Public Spectacle,” 130.

<sup>16</sup> “Public Meetings: Opening of the Shanghai Polytechnic Institution,” June 24, 1876.

<sup>17</sup> Wright, “Science as Public Spectacle,” 138. See Emma Teng, “Wang Tao Lands in Hong Kong,” in *A New Literary History of Modern China*, edited by David Der-wei Wang, 108-113 (Cambridge, MA: Belknap Press, 2017).

<sup>18</sup> “The New Departure at the Polytechnic,” *The North - China Herald and Supreme Court & Consular Gazette (1870-1941)*, Aug 15, 1890. <https://login.proxy048.nclive.org/login?url=https://www.proquest.com/historical-newspapers/new-departure-at-polytechnic/docview/1321190937/se-2>.

<sup>19</sup> “The Polytechnic Prize Essays,” *The North - China Herald and Supreme Court & Consular Gazette (1870-1941)*, May 27, 1892. <https://login.proxy048.nclive.org/login?url=https://www.proquest.com/historical-newspapers/polytechnic-prize-essays/docview/1320461958/se-2>.

interest of Chinese officials with his bureaucratic connections and publishing the winning essays.<sup>20</sup> In turn, these characterizations of the essay scheme exemplify the importance of the competition for the Shanghai Polytechnic to achieve its goals and promote the spread of Western learning.

Yuezhi Xiong and Phoebe Wai discussed how the essays helped with the mastery of Western learning for the Chinese students, facilitating them in their familiarity with the material. In the first report titled “Chinese Prize Essays,” which John Fryer published on January 25, 1888, in the *North China Herald*, Fryer discussed the similarity between the essay competition scheme and the Qing government examinations to which the Chinese literati were accustomed.<sup>21</sup> Compared to Wright’s description of a failing Institution discussed during the founding years of the Institute, Fryer’s account suggests that the essay scheme allowed the Shanghai Polytechnic to make “its influence felt far and wide not only among the students of literature, but among the higher class of officials to whose valuable co-operation and personal interest much of the success is due.”<sup>22</sup> The first two years of the essay scheme consisted of quarterly competitions, with topics including comparing two famous Han Dynasty generals’ policies, the naval defenses of China, the advantage of railways, comparing Western and Chinese sciences, benefits of telegraph and steamboat, and the declining profitability of silk and tea.<sup>23</sup> Fryer specifically highlighted the benefits of the essay scheme by emphasizing how the Chinese assimilated to Western science and understood the benefits and advantages of it. In addition, he drew attention the headings of one winning essay: respect the holy religion of Confucius, renew the various branches of

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<sup>20</sup> Paul A. Cohen, *Between Tradition and Modernity: Wang T’ao and Reform in Late Ch’ing China*, (Cambridge: Harvard University Press, 1974), 183.

<sup>21</sup> John Fryer, “Chinese Prize Essays,” *The North - China Herald and Supreme Court & Consular Gazette (1870-1941)*, Jan 25, 1888. <https://login.proxy048.nclive.org/login?url=https://www.proquest.com/historical-newspapers/chinese-prize-essays/docview/1320833104/se-2>.

<sup>22</sup> Fryer, “Chinese Prize Essays,” Jan 25, 1888.

<sup>23</sup> Fryer, “Chinese Prize Essays,” Jan 25, 1888.

learning, promote the discussion of public affairs, give weight to the statutes and laws, facilitate promotion to official positions, reform military administration, extend mercantile pursuits, encourage agricultural industry, improve internal communication, and revise treaties with other nations. The Qing government would utilize and implement all of these recommendations to help the Chinese state restore power—as noted above, this was the reason for the Self-Strengthening Movement. A Chinese official would propose an essay question, and the Institute published the winning essays to make them available to high-ranking Chinese officials to review options based on Western science and systems. Taking a largely pro-Western view, this essay spoke of the benefits of Western science. However, not accepting of foreigners themselves, the essayist referred to the banishment of foreigners from China. In doing so, this split view towards Western science and Western people suggests that Medhurst's goal of creating better relations with the West was not accomplished. Instead, this essayist illustrates that they recognize the benefits of Western learning to strengthen the state yet still hold negative views towards Westerners. In this report, Fryer discredits alternative perspectives to Western science, stating that “[o]ccasionally sentiments occur that are not of the most complimentary or desirable kind towards foreigners and their ways.”<sup>24</sup> In doing so, this sets up a gap where critiques are silenced and not presented as legitimate or correct.

In Fryer's second report on July 1, 1889, on the progress of these essays, spanning July 1887 to July 1888, he noted the increasingly successful essay scheme, adding additional themes to hold more competitions throughout the year by Chinese officials. Fryer uses very pro-Western rhetoric to illustrate his position. He further suggests that expressions in these essays that are not “complimentary to Western nations” would be censored and edited by Mr. Wang-tsz-ching before publication and that “nothing of an offensive or personal character would ever be made

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<sup>24</sup> Fryer, “Chinese Prize Essays,” Jan 25, 1888.

public.”<sup>25</sup> This censorship creates a narrative that the spread of Western science was smoothly disseminated to the Chinese, even if not in reality. Fryer suggests the former in his reports. In addition, Fryer seems to attack the intelligence of Chinese literati, stating that the low number who entered essay submissions for some questions totaled thirty and represented the “general ignorance of literati on everything outside the ordinary curriculum of Chinese study.”<sup>26</sup>

Additionally, an 1896 *North China Herald* periodical states that “[o]ur students in Western countries do not need to unlearn the Ptolemaic system of the universe; they are all believers in Newton and this is what the Chinese would and should become with a reconstructed system on modern lines.”<sup>27</sup> This statement supports a modernity based on Western ideas, disregarding the long history of Chinese science. Suggesting that the Chinese are essentially ‘un-enlightened,’ it also implies that the Chinese only need to be introduced to Western learning to understand its advantage. Published in 1896, the same year Fryer stepped away from the Institute, this periodical suggests that perceptions around this claim of Western superiority existed throughout the period this research paper analyzes. This positionality distorts the historical record, implying that the essayists wrote little critique of the Westerners or Western science. Together, these *North China Herald* articles further undermine any critiques of Western science by the essayists and effectively erase this narrative from the official account, making it difficult to understand the true perspective of the students at the Institute.

This official narrative constructed by Fryer that the Chinese essayists are largely praising Western learning, yet critical of any dissent towards Western science, is muddled by a column

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<sup>25</sup> “Report: Second Report of the Chinese Prize Essay Scheme in Connection with the Chinese Polytechnic Institution and Reading Rooms, Shanghai,” *The North - China Herald and Supreme Court & Consular Gazette (1870-1941)*, Jul 20, 1889. <https://login.proxy048.nclive.org/login?url=https://www.proquest.com/historical-newspapers/report/docview/1321163132/se-2>.

<sup>26</sup> “Report: Second Report of the Chinese Prize Essay Scheme,” Jul 20, 1889.

<sup>27</sup> “Chinese Political Essays,” *The North - China Herald and Supreme Court & Consular Gazette (1870-1941)*, Jul 17, 1896. <https://login.proxy048.nclive.org/login?url=https://www.proquest.com/historical-newspapers/chinese-political-essays/docview/1369501572/se-2>

piece in the *North China Herald* titled “The Polytechnic Essays.” Published on November 1, 1889, following the second report, the article addresses the thinking of Wang Tao. As the other administrator of the Shanghai Polytechnic, “Wang’s flowery periods” are juxtaposed by the commentator with “Mr. Fryer’s sober but withal encouraging report.”<sup>28</sup> Nevertheless, both draw the same conclusions that the essay scheme benefited the Shanghai Polytechnic and that the Institute was looking up.<sup>29</sup> The piece also addresses why this difference in their portrayals of the essays occurs, stemming from the different audiences that Wang and Fryer addressed:

Mr. Fryer is addressing a calmly sympathetic European audience, while Wang writes as the apostle of a new faith to a people by no means convinced that all this enthusiasm for isms and museums is not a flouting of the ever-sacred doctrines of the Holy Man.<sup>30</sup>

This statement suggests that Wang is skeptical of Western learning and not entirely convinced of the authenticity of the foreigners’ intentions. Wang states that the underlying intention could be a ploy to continue the spread of Christianity, going against the narrative pushed by Fryer. Further going against this narrative of the superiority of Western learning, in the preface to the new essays released, Wang stated that “talent [...] ‘is not confined to one corner of the world.’”<sup>31</sup> He continued, addressing that if one were versed in both Chinese and Western learning, then they would be better suited to address problems, able to draw upon the best of the two systems. Wang highlighted how Western methods were already helping in the legal system, stating that “[t]he Court has come to gradually appreciate western learning.”<sup>32</sup> This appraisal illustrates that Wang thinks Western learning has benefits that should not be ignored. In addition, despite his initial skepticism of Western science, Paul Cohen highlights that Wang advocated for introducing

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<sup>28</sup> “The Polytechnic Essays,” Nov 1, 1889.

<sup>29</sup> “The Polytechnic Essays,” Nov 1, 1889.

<sup>30</sup> “The Polytechnic Essays,” Nov 1, 1889.

<sup>31</sup> “The Polytechnic Essays,” Nov 1, 1889.

<sup>32</sup> “The Polytechnic Essays,” Nov 1, 1889.



Western learning to China.<sup>33</sup> Wang believed that Western science would help the Chinese state with the Self-Strengthening Movement, which dealt with issues like nationalism and modernization.<sup>34</sup> Cohen described Wang's ultimate goal as "educational and patriotic." Through the Polytechnic, Wang hoped that scientific and technical talent would emerge for the future use of the country.<sup>35</sup> In short, according to his writing, Wang did not dismiss the benefits of Chinese science and learning as Fryer did. Instead, Wang synthesized the two systems, embodying what Emma Teng characterized as "a bicultural and bilingual outlook."<sup>36</sup>

By analyzing these competition essays, I will illuminate three that exemplify the Chinese perspective by highlighting one negative toward Chinese science and two more critical of Western science and foreigners. First, highlighting the pro-Western learning essay, I show it is not 'neither or.' Instead, there were diverse perspectives prevalent, evidenced throughout the essay competition. In an essay published in 1890, the essayist Mr. Yang addresses the question of the advantages of a mint in China. The question proposed by Taotai of Ningpo for the Summer 1890 quarterly competition asked, "[t]he south-eastern provinces now have much foreign money in circulation, and the natives consider it a great convenience to trade. Should China set about coining gold and silver money? Would it circulate freely? Would it be advantageous to the country or the reverse?"<sup>37</sup> Giving context to the need for a mint, Yang begins his response by stating that the importation of foreign opium and China's purchase of

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<sup>33</sup> Paul A. Cohen, "Wang T'ao and Incipient Chinese Nationalism," *The Journal of Asian Studies* 26, no. 4 (1967), 562. <https://doi.org/10.2307/2051236>.

<sup>34</sup> Cohen, "Wang T'ao and Incipient Chinese Nationalism," 564-65.

<sup>35</sup> Cohen, *Between Tradition and Modernity: Wang T'ao and Reform in Late Ch'ing China*, 184.

<sup>36</sup> Emma Teng, "Wang Tao Lands in Hong Kong," 112.

<sup>37</sup> "The Chinese Prize Essay on the Advantages of a Mint," *The North - China Herald and Supreme Court & Consular Gazette (1870-1941)*, Dec 19, 1890. <https://login.proxy048.nclive.org/login?url=https://www.proquest.com/historical-newspapers/chinese-prize-essay-on-advantages-mint/docview/1320865543/se-2>; Yuezhi Xiong & Phoebe Wai, "Shanghai Polytechnic Institute: The Home of Science."

foreign ships and munitions of war have “drain[ed] away the wealth of China to foreign countries,” a result of the external and internal conflicts the Qing dynasty faced<sup>38</sup> He then turns to the conversion rate and the loss caused by dealing in foreign dollars. The Chinese had to pay eighty-five cents of a tael to buy one dollar, even though the real value was seventy-two tael cents. This conversion meant that the Chinese lost thirteen tael cents per dollar.<sup>39</sup> While this loss was very real, according to Yang, he asserts the inevitability of the use of foreign dollars and that it cannot be prohibited. He addresses what he calls “opponents” throughout the essay, calling their language “of narrow-minded pedants than of practical men of the world.”<sup>40</sup> This characterization, while not directly the same as that employed by foreigners, suggests that Yang views people not on board with Western-based modernization, like the mint, as essentially uncivilized and against progress. In addition, Yang further argues that establishing the mint in China would aid its position globally, raising needed funds lost to foreign manufacturing and restoring the loss of China’s “prestige.” In concluding the essay, Yang asserts that the mint should be organized to ensure its stability and permanence. Throughout this essay, Yang withholds criticism directed towards Westerners, instead reserving it for “opponents” of the mint. Not even in his introduction, when he speaks of the reasons for China’s decline in wealth stemming from foreigners, does Yang speak poorly of Westerners. By doing so, Yang exhibits what Fryer laid out in his reports on the essay competition—a generally positive consensus on Western learning as beneficial and needed for China’s development.

Despite this positive essay above on the need for a mint, supporting the need for Western learning and systems in China, not all the essays submitted to the prize scheme were as uncritical. Wang similarly suggested this point in his preface for the published essays. Published

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<sup>38</sup> “The Chinese Prize Essay on the Advantages of a Mint,” Dec 19, 1890.

<sup>39</sup> “The Chinese Prize Essay on the Advantages of a Mint,” Dec 19, 1890.

<sup>40</sup> “The Chinese Prize Essay on the Advantages of a Mint,” Dec 19, 1890.

in 1888, essayists engaged with the question, “how should evils be extirpated from Steamships and Telegraphs so as to insure [sic] permanence to those concerns?”<sup>41</sup> Three essays responding to this question were partially translated and included in an article for the *North China Herald* with added commentary and discussion on these essays. Intended for a Western audience, the three essays are edited to showcase little critique of Westerners, and the essayists are given numbers rather than referring to their real names. When reading between the lines, with essays censored before publication, these three seemingly come close to harsh criticism. With the article only highlighting the main argument of each, essay “No. 1” speaks of the evils, including “the lightness of the treaty tariff,” the “extraterritorial privileges,” “the depression of trade,” and “the indiscriminate engagement of the company’s servants.”<sup>42</sup> Essayists “No. 2” and “No. 3” highlight the extra duties collected by the foreigners, well above the level of the “Native” and for better conditions, like the “godowns” or warehouses.<sup>43</sup> The commentary added in the article suggests the commentator disagrees with the essayists, particularly in essay “No. 1.” Showing a little understanding of the critiques essay “No. 1” raises, the commentator quickly undermines the essay by stating that “No. 1’s feelings on this subject carry him a great deal too far.”<sup>44</sup> This undermining of the points raised by the essay suggests that the essayist is driven by emotions, according to the commentator, rather than logic and rational reasoning. Additionally, essay “No. 1” asserts that a foreign captain who becomes drunk and loses their ship “ought by western law to be put on his trial on a criminal charge, and if his misconduct is grave to be imprisoned for

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<sup>41</sup> "Chinese Essays on Steamship Co.'s," *The North - China Herald and Supreme Court & Consular Gazette (1870-1941)*, Dec 14, 1888.  
<https://login.proxy048.nclive.org/login?url=https://www.proquest.com/historical-newspapers/miscellaneous-articles/docview/1321163066/se-2>.

<sup>42</sup> "Chinese Essays on Steamship Co.'s," Dec 14, 1888.

<sup>43</sup> "Chinese Essays on Steamship Co.'s," Dec 14, 1888.

<sup>44</sup> "Chinese Essays on Steamship Co.'s," Dec 14, 1888.

life.”<sup>45</sup> Yet, this essayist notes that penal laws have proved powerless to touch foreigners.<sup>46</sup> The latter part demonstrates that the foreigners advocating for a Western-based law system, among many others, are not applying the law to their citizens in China as they would if they were living in their home country. In addition, this essay could have been much more critical of foreigners, yet its translation to English, editing, and limited segments could hide some of the harsher Western critiques, as noted above with the censorship committed by the Institute.<sup>47</sup> The article’s commentator essentially asserts that essayist “No. 1” lacks “practical wisdom” and adds that it must be seen whether “Chinamen can navigate their own ships before carrying out the author’s suggestion”<sup>48</sup> This commentary undermines the credibility of essayist “No. 1,” the most critical of the three, rejecting the author’s suggestions for change. Like Fryer, this article’s commentator promotes Western systems and learning as superior. Yet, these essays, particularly “No. 1,” illuminate this harsh critique toward foreigners. Even if only partially translated, this shows that the dissemination of Western learning was not as smooth and free of criticism as Fryer suggests.

Finally, another critical essay on foreigners and Western learning is from 1886, the first year the essay competition was held. The essayist states that:

Chinese attention having been hitherto directed to more serious philosophical and moral studies, the westerner had it is true got a little ahead of him in applied mathematics; but by this time next century the term ‘western science’ would have lapsed into oblivion, the only science left being Chinese. Our grandsons will not long be introduced to algebra by Todhunter, or to Euclid by Pott; they will have (such is the irony of fate) to first study Chinese in order to gain access to the more scholarly treatises of Chang or Tsang-hieh (the original Euclid) and Professor Li on tung-laifa, which, as everybody knows, gave its name to algebra, ‘the eastern system.’<sup>49</sup>

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<sup>45</sup> "Chinese Essays on Steamship Co.'s," Dec 14, 1888.

<sup>46</sup> "Chinese Essays on Steamship Co.'s," Dec 14, 1888.

<sup>47</sup> "Report: Second Report of the Chinese Prize Essay Scheme," July 20, 1889.

<sup>48</sup> "Chinese Essays on Steamship Co.'s," Dec 14, 1888.

<sup>49</sup> "The Polytechnic Essays," Nov 1, 1889.

As one of the first, this competition essay presents a largely critical perspective of the West, suggesting that the Chinese will become superior to that of Westerners and that this negative perception started from the beginning. While not necessarily critiquing the basis of Western science, such as mathematics, the author suggests that the Chinese people are superior to the Westerners and discredits the founders of algebra. In doing so, the author flips the roles of the Chinese and Westerners, where the Chinese are now enlightening the foreigners in a century. This narrative again counters the one presented by Fryer in his reports on these essays, highlighting significant critique. As Fryer attacks the intellect of the Chinese literati, this essayist goes after the intellect of the foreigners. Finally, this again shows that Western science was not as welcomed or smoothly disseminated to the Chinese as Medhurst had hoped with the Shanghai Polytechnic Institute.

The competition essays I have highlighted suggest that Fryer failed to achieve the goals of the Shanghai Polytechnic Institute. Rather than serving as the site for disseminating Western knowledge, the Institute nearly failed in its first decade. Fryer first conceptualized the idea of the essay prize scheme in 1884, and not for another two years, in 1886, that the Institute held the first competition. Holding competitions quarterly, Chinese officials proposed questions and shared the winning essays with Qing government officials. These essays offer a window into the thinking of the Chinese literati connected with the Institute. The essay competition became one of the most “powerful levers” for the Shanghai Polytechnic, run by John Fryer and Wang Tao as administrators.<sup>50</sup> Fryer published reports presenting a widely positive account of these essays. Yet, Fryer wrote his account for his intended foreign audience, and his positionality is evident in the reports. Wang muddled this narrative, highlighting the benefits of both Western and Chinese learning, stating that neither is superior.

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<sup>50</sup> "The New Departure at the Polytechnic," Aug 15, 1890.

By analyzing three of these competition essays on issues including the need for a mint, steamships and telegraphs, and the origin of ‘Western science,’ I have demonstrated that the essays present a much more comprehensive array of voices than Fryer suggested. These essays open a window into the thinking of the Chinese literati of the time, where we can better understand the voices from 1876 to 1896. Restricted by a language barrier, I have had to rely solely on previously translated essays, both complete and partial ones. In addition, as I can only gather sources in English, many of my sources are foreign-created and intended for foreign audiences. Many sources carry biases and opinions based on the author and intended audience, particularly primary sources created by foreigners. Yet, despite this barrier, the competition essays presented represent a wide range of perspectives. From the essay supporting the creation of the mint and highlighting how it would benefit China, to the essay about the need for greater enforcement of the law for foreign steamboat captains, to the essay arguing that Western science would become “Chinese science” in a century, these three essays illustrate my thesis that the Shanghai Polytechnic Institute served as a place to understand the responses to Western science, the Self-Strengthening Movement, and modernization in China.<sup>51</sup> These essays suggest resistance to the idea that Western-based modernization was necessary to strengthen China and preserve the Qing dynasty. Overall, as Wang Tao stated, “talent ‘is not confined to one corner of the world.’”<sup>52</sup> Indeed, there is not one form of modernity, and one is not inherently superior to another.

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<sup>51</sup> “The Polytechnic Essays,” Nov 1, 1889.

<sup>52</sup> “The Polytechnic Essays,” Nov 1, 1889.

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