Hung Yueh Lan*

Miura Baien and 18th Century Japanese Intellectual History: The Acceptance of Western Knowledge and the Theory of Yin-Yang and Wuxing

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Abstract: This paper will focus on Miura Baien (1723–1789) to have a glimpse of how Edo intellectuals viewed Western and traditional Chinese knowledge, and how they thought about the world and nature in the middle of Tokugawa period. Miura is a thinker who has created an exquisite system that is almost unmatched by others in Japanese intellectual history. Maeno was a Japanese physician and pioneer of Dutch learning. Both of them deny the view of nature and the body based on the theory of Yin-Yang and Wuxing, and accepted the intellectual shock brought about by Dutch learning. Therefore, I will use the views of these two Edo scholars to discuss the criticism and application of the theory of Yin-Yang and Wuxing in Edo Japan, and their understanding of Western knowledge. Furthermore, I will also compare Miura Baien with Dai Zhen (1724–1777), a Chinese thinker who was born around the same period, to argue that Western learning in Qing China, and the theory of Yin-Yang and Wuxing were how to be used. By doing so, this paper would like to illustrate the unique thoughts of Miura Baien and characteristics of 18th century Japanese intellectual history.

Keywords: Miura Baien; western knowledge; Confucianism

Japan entered the so-called era of Sakoku (锁国, locked country) in the early seventeenth century, in which severe regulations were placed on trade and foreign relations. However, missions from the Joseon Dynasty and Ryukyu could still enter Japan, and merchant ships from China, Taiwan, and the Netherlands could also trade in Nagasaki. They brought not only goods but also many books published in Ming-Qing China and Europe. As far as the question of how Western knowledge was developed in Edo Japan, in addition to Nanbangaku (南蛮学, Southern Barbarian learning), Rangaku (兰学, Dutch learning), many western

***Corresponding author: Hung Yueh Lan**, Associate Research Fellow, Institute of History and Philology, Academia Sinica, Taiwan, China, E-mail: hungyueh7@gmail.com. https://orcid.org/0000-0003-1234-2318

books which were translated into classical Chinese during the Ming and Qing Dynasties, were also exported to Japan. Because of the policy of ban on Christianity, many of those books have become banned books in Edo Japan. However, after mid-eighteenth century, compared to China, the Jesuit Missions left China and the new western knowledge was no more imported from Europe, Edo Japan although adopted Sakoku policy politically, it was already in the state of opening the country for the western knowledge. Not only the Dutch learning developed, but also many banned books on Western learning in Ming-Qing China began to be circulated. This difference in turn affected the way Japan and China faced the military and intellectual impactions of the West in the nineteenth century (Yamada, 2017).

On the other hand, Confucianism was highly developed in Edo period. A lot of Edo Confucian scholars used those Confucian theories and concepts, such as Yin-Yang and Wuxing (五行)[1] theory to explain nature and it's relation with human body. However, Yin-Yang and Wuxing theory was not completely accepted by Edo Confucian scholars. For example, Miura Baien (三浦梅园, 1723–1789)and Maeno Ryōtaku (前野良泽, 1723–1803) both were born in 1723, and criticized the so called Wuxing theory.

From the perspective of Japanese intellectual history, the people born around 1720s can be regarded as the first generation that Japanese began to accept a large amount of Western knowledge. This paper will focus on Miura Baien to have a glimpse of how Edo intellectuals viewed Western and traditional Chinese knowledge, and how they thought about the world and nature in the middle of Tokugawa period. Miura is a thinker who has created an exquisite system that is almost unmatched by others in Japanese intellectual history. Maeno was a Japanese physician and pioneer of Dutch learning. Both of them deny the view of nature and the body based on the theory of Yin-Yang and Wuxing, and accepted the intellectual shock brought about by Dutch learning. Therefore, I will use the views of these two Edo scholars to discuss the criticism and application of the theory of Yin-Yang and Wuxing in Edo Japan, and their understanding of Western knowledge. Furthermore, I will also compare Miura Baien with Dai Zhen (1724–1777), a Chinese thinker who was born around the same period, to argue that Western learning in Qing China, and the theory of Yin-Yang and Wuxing were how to be used. By doing so, I would like to illustrate the unique thoughts of Miura Baien and characteristics of 18th century Japanese intellectual history.

1 "Wuxing (五行)" usually translated as Five elements, Five Phases or Five Agents. However these translations are hard to capture the full meaning of Wuxing.

1 The Life, Works and Knowledge of Miura Baien

Miura Baien is a Confucian scholar and physician. He was born in the family of a physician in Bungo Province (Oita Prefecture). His grandparents began to practice medicine, and he also learned medical skills from his father. During his youth, he was educated by Ayabe Keisai (绫部絅斋, 1676–1750) in Kitsuki (杵筑) Domain and Fujita Keisho (藤田敬所, 1698–1776) in the Nakatsu (中津) Domain. But he acquired most of his profound knowledge through self-study (Shimada, 1982).

The memoranda *Urashi Shuki* (浦子手記) that he kept for more than 40 years showed the scope and intensity of his reading. We know that he has read *Zuo Zhuan* (左传,*The Zuo Commentary*), *Shi Ji* (史记, *Records of the Grand Historian*) and other Chinese history books, and works concerning Confucianism, Buddhism and Daoism. Further, there are books on traditional Chinese medicine such as *Nika benmō* (二火辨妄, *Discrimination of Two Fire*), and political theory books such as *Seidan* (政谈, *Taking Politics*) and *Keizairoku* (經濟錄, *Economy Records*), as well as literary works. Further, Books like *Tian Jing Huo Wen* (天经或问, *Questions and Answers on Astronomy and Meteorology*) which concerning Western learning, published in the Ming-Qing China were also included in his reading list (Miura, 1979). From the perspective of modern discipline, those books he had read including works in the fields of history, linguistics, philosophy, astronomy, medicine, political science, and literature.

Basing on his wide reading, He wrote a lot of books. Among them, *Gengo (*玄語, *Deep Words)*, *Kango (*敢語, *Daring Words)* and *Zeigo (*贅語, *Excessive Words)* are well-known. These are the works about philosophy of nature and human society. However, in the Edo period, Miura should only be a regional scholar. In other parts of Japan, he is probably only known as a commenter of Sinitic poetry. Actually, one of Baien's book which wildly read in Edo Japan is a commentary of Sinitic Poetry called *Shitetsu* (詩轍, *Precedents of Sinitic Poetry*).

It was not until after the Meiji period that Miura Baien was noticed by Naitou Konan (内藤湖南, 1866–1934). There are Mirura's works including *Gengo (Deep Words)*, *Kango (Daring Words)* and *Zeigo (Excessive Words)*, together with Tominaga Nakai (富永仲基, 1715–1746)'s work *Shutsujōgogo* (出定後語, *About after coming out of Buddhism*) and Yamagata Bantō (山片蟠桃, 1748–1821)'s work *Yume no shiro* (夢之代, *Instead of Dreams*). Naitou Konan appraised these works as the highly creative works in Edo period (Naitou, 1897).

Then, Miura Baien was also highly appraised by modern Marxist scholars Saigusa Hiroto (三枝博音, 1892–1963) and Kawakami Hajime (河上肇, 1872–1946). Saigusa was the first researcher to investigate Baien's natural philosophy system by comparing them with those of Western learning, asserting that Baien was a

dialectical materialist (Saigusa, 1972). Kawakami Hajime made the first comparison of Baien's economic thought with that of Westerners. According to Kawakami, Baien considered money as a means of exchange and adopted a quantitative theory of money at the price level (Kawakami, 1905). Although the similarity of Baien's philosophy with modern western philosophy or economic thought may has been over-stressed. Because of their research, Miura Baien's thought was able to regain the attention of modern scholars.

Among Miura Baien' works, *Gengo (Deep Words)* is most famous. It is a book about philosophy of nature and human society. This book was criticized "almost hopelessly incomprehensible" (Yamada, 1988). Because *Gengo (Deep Words)* is written in Classical Chinese and does not quote other Chinese Classics at all, it is full of original terms created by Baien himself, so it is very difficult to understand. In contrast, *Zeigo (Excessive Words)* quoted many passages and comments from books that Baien read, when he was writing *Gengo*, which can be regarded as a reference book for reading *Gengo*.

In short, it is not easy for people to understand Miura Baien's highly original thoughts. On the other hand, it is undeniable that his philosophy is built on the basis of his East Asian traditional knowledge of China, Japanese Confucianism, and traditional Chinese medicine, as well as Western knowledge obtained from Ming-Qing China and works of Dutch learning. In the following, we will focus on his acceptance of Western knowledge and his understanding and criticism of the theory of Yin-Yang and Wuxing to analyze his thoughts.

2 The Philosophy of Miura Baien and the Theory of Yin-Yang and Wuxing, Western Knowledge

Gengo (*Dark Words*) was his major work. He revised it 23 times in many years before it was published. The manuscripts of *Gengo* contain over 200 diagrams. He used these diagrams to explain his thinking of the nature. "Gen (玄)" is an important concept in his philosophy. It means a kind of color of reddish black, which means the existence of the root of the world, originated from Taoism. Although his philosophical thought has the color of Taoism, it actually inherits Neo-Confucianism theory of Qi (气) and natural philosophy (Yamada, 1988).

Scholars of Neo-Confucianism basically used the theory of Qi and the theory of Yin-Yang and Wuxing (earth, fire, metal, water, and wood) which developed from Han Dynasty as the framework to explain the origin and development of the cosmos. In the theory of Neo-Confucianism, the interaction of Yin and Yang on the Qi of the cosmos, then which set in motion the Wuxing (five phases) of cosmic change and

yielded myriad things. Then the theory of Yin-Yang and Wuxing was combined with "Tai Chi (太极)". Further, this system of thought was combined with concepts such as " Li (理)"and "Qi (气)" in Neo-Confucianism. In short, Tai Chi, Yin-Yang and Wuxing, constitute a view of the body and nature, which dominates various academic fields such as astronomy, medicine, and music in traditional China (even East Asia) (Takeda, 2018). This is the premise for Miura Baien to construct his thoughts.

Miura Baien criticized and distrusted the category of Wuxing, and believed that the Wuxing are not natural numbers in the universe. However, he was not the first one to assert this. He said that some people have long known this mistake (Miura, 1978a). Miura Baien criticized ancient Chinese medical books for explaining the problems of the human body with the Wu Xing, and criticized the problem of fire (火) being divided into "Junhuo (君火, sovereign fire)" and "Xianghuo (相火, ministerial fire)" in traditional medical books. He thought this is useless argument (Miura, 1978f).

The theory of Wuxing was wildly used in traditional Chinese medicine, especial in the theory of so called "the four eminent physicians in Jin and Yuan period (金元四大家)". We know that the criticism of traditional Chinese medicine in Jin and Yuan period was a common intellectual tendency of the so-called Ancient Formula School (古方派) in Edo Japan. Moreover, most physicians of Ancient Formula School did not believe in the theory of Yin-Yang and Wuxing.

For example, Goto Konzan (後藤艮山, 1659–1733) believed that modern Chinese medicine adopted the theory of Yin-Yang and Wu Xing, so it is harmful and should not be taken (Gotō, 1971). His disciple Kagawa Shūan (香川修庵, 1683–1755) not only did not believe in the theory of Yin-Yang and Wuxing, but even regarded all traditional Chinese medicine as heresy (Kagawa, 1982). Secondly, Yoshimasu Tōdō (吉益东洞, 1702–1773), the most famous physician of Ancient Formula School, also said:

> The discussion of the internal organs, the limbs, and the bones are different in different books. In sum, their main points all based on reasoning by principles, the words of the debating. The internal organs, the limbs, the bones and the nine orifices are all created by nature, not human beings. Physicians take the Theory of Yin-Yang and Wuxing to debate, but the treatment using this theory is ineffective. (Yoshimasu, 1980)

As such, Physicians of Ancient Formula School thought that the theory of Yin-Yang and Wuxing is not effective for treatment.

Physicians of the Ancient Formula school in the late 18th century, such as Yoshimasu Tōdō, were influenced by the thoughts of the representative Confucian of the Ancient School, Ogyu Sarai (荻生徂徠, 1666–1728). In Sorai's view, Yin-Yang or Wuxing are symbols and categories of knowledge for ancient Chinese sages to understand the world, rather than nature itself. Therefore, excessive adherence to frameworks such as the Wuxing will lead to inability to cure diseases (Ogyū, 1973).

As we have discussed above, Physicians of Ancient Formula school have been dissatisfied with the view of nature and body formed by the theory of Yin-Yang and Wuxing in traditional Chinese medicine. This intellectual tendency further mediated their acceptance of Dutch medicine in late Edo period.

In 1771, when the director of the Dutch merchant came to Edo, he brought the book *Ontleedkundige Tafelen* (the original German edition *Anatomische Tabellen*) with him. Sugita Genpaku (杉田玄白, 1733–1817) purchased the book with the assistance of his feudal clan. In the same year, Sugita, Maeno Ryotaku and others obtained the permission to attend the anatomy site. Both of them brought *Ontleedkundige Tafelen* to the site and decided to translate the book together. They started the translation work in the mansion of the Nakatsu Clan in Tsukiji Tetsupao, and published the book as *Kaitai Shinsho* (解体新書, *New Text on Anatomy*), which initiated the study of Dutch learning in the Edo period (Torii, 2015). Fukuzawa Yukichi (福泽谕吉, 1861–1901) said that the translation of this book is "the beginning of Japan Civilization (Fukuzawa, 1971)".

Scholars of Dutch learning also do not believe in the theory of Yin-Yang and Wuxing. For example, Maeno Ryotaku also criticized the Wuxing Theory. He Compare the Four Elements Theory with the Wuxing (Five Elements) Theory, said:

> The theory of the Wuxing (five elements) is only a private statement of the China, which is different from the public statement of the four elements ……. The so-called Yin and Yang and Wuxing can be counted into hundreds or thousands, just as people say. How can it be natural? (Maeno, 1976)

In his view, the theory of four elements in Dutch learning, which emphasized that earth, water, fire, and air are the constituent elements of matter is the universal truth. Both Maeno Ryotaku and Miura Baien, born in 1723, belonged to the first generation of Dutch learning. Maeno's critique of the "five elements" is different from those physicians of Ancient Formula School. He has further compared it with the four-element theory which brought by the books of Dutch learning, and believes in the four elements theory.

In contrast, Miura Baien also interested in Dutch learning, had read *Kaitai Shinsho*, and even tried to dissect animals such as mice (Miura, 1978e). He is very interested in the knowledge of anatomy. He wrote the book *Zoubutsu yodan* (造物餘譚, *The talk of Creation*), which copied the knowledge related to anatomy such as the "Bone Linking Picture" (連骨圖, The real figure of the human body with bones) held by Negoro Tourin (根來東麟) (Miura, 1978b). Based on this judgment, in Baien's opinion, the traditional Chinese medicine shown by the theory of Yin-Yang and Wuxing has a strong imagination, and not emphasizing experiments and theoretical analysis. Therefore, it is not as good as Dutch medicine (Miura, 1978e).

However, Miura Baien not only studied Dutch learning, but also accepted the knowledge of Western learning from Ming-Qing China. For example, he quoted *Tianjing huowen* (天经或问, *Questions and Answers on Astronomy and Meteorology*) and other Ming and Qing Western works to describe the nature of heaven and earth to construct his nature philosophy (Miura, 1978e). The author of *Tianjing huowen* also discusses the difference between the theory of "four elements" and the theory of "five elements (Wuxing)". Moreover, he developed his views on traditional Chinese medical thought in this knowledge context.

In terms of the critique of the "five elements" of Western learning in the Ming-Qing China, Alfonso Vagnoni (高一志, 1566–1640)'s *Kongji gezhi* (空际格致, *Treatise on the Composition of the Universe*, 1633) presented the theory of the four elements from Aristotle's works. And he tried to convince the Chinese of the error of their ways for including wood and metal as elements (Elman, 2005). In contrast, the author of *Tianjing huowen* You Yi (游艺) also discussed the difference between the "four elements" and "five elements" in *Tainting huwuowen*. Concerning the theory of four elements, the Italian Catholic missionary Matteo Ricci (1552–1610) have introduced it in *Kunyu Wanguo Quantu* (坤舆万国全图), which was printed in Ming China in 1602, and his another work *Qian kun ti yi* (乾坤体义, *Structure and Meanings of Heaven and Earth*). You Yi's understanding of the theory of four elements based on these Ricci's works (Yoshida, 1985; Ayusawa, 1980). However, You Yi attempted to integrate the theory of "four elements" and "five elements" in *Tainting huwuowen*. In his discussion, whether the "four elements" or "five elements" are all some kind of substances and Qi. And they are also can be seen as a kind of knowledge framework for explaining the world (You & Fang, 1730).

On this basis of these Western knowledge from Ming-Qing China's books, Miura Baien said:

> *Tianjing huwuowen*, *Kunyu waiji* and so on also talk about the four elements of the West, and there are also four elements. There are the wood, fire, earth, metal, and water in China, earth, water, fire, wind in India, and the four elements of water, fire, earth, and air in the West. Although their theories are different, after all, they all tools to talk about nature, in this meaning they are all the same. (Miura, 1978d)

Compared with Maeno Ryotaku, Miura Baien is obviously influenced by books related to Western learning written in Chinese during the Ming and Qing Dynasties.

He seems to only regard Western knowledge such as the four elements as another kind of knowledge framework, and does not particularly think that it is more universal.

That is to say, in Miura Baien's view, although these theories are different, they all a kind of knowledge frameworks which were invented to explain the nature.

But what Miura Baien wanted to pursue is to analyze and understand the "principles (条理)" in the nature.

Secondly, as Shimada Kenji pointed out, the most essential characteristic of Baien's thought is the thinking based on the theory of Spherical Earth (Shimada, 1982). Baien often expresses his natural philosophy with circular diagrams. This may show that in his mind, the world is a spherical world, and the world is composed of "principles". The above-mentioned Ming-Qing works related to western studies, such as You Yi's *Tianjing huwuowen*, Fang Yizhi (方以智, 1611–1671)'s *Wuli Xiao Shi* (物理小识, *General Knowledge of Material*), and even Mei Wending (梅文鼎, 1633–1672)'s *Lixue yiwen* (历学疑问, *Questions on Calendrical Astronomy*), all talking about the theory of Spherical Earth. Based on the knowledge of these Ming-Qing western learning books, Baien started its philosophical thinking on the nature of heaven and earth based (Yoshida, 1985).

Miura Baien admitted Wuxing theory is kind of knowledge framework to explain the nature, however it is not the real principles of nature itself. He believed that the principles of nature are formed by Ying and Yang. He said:

> Both Confucius and Buddha are human beings. They created Dao for the human beings. There is something to worry about, so they did the job. From the perspective of heaven and earth, it is also human's behavior. Therefore, if you want to have a grand view of the world, you must stand before a place where Prince Siddhārtha still not conceived in King Shuddhodana's Palace, and Fuxi did not paint on He Tu (River Map), to get the principles. (Miura, 1978c)

From this quotation, we can see that Miura Baien is not like the scholars of Ancient Schools such as Ogyū Sorai. He did not take the teaching methods created by ancient sages as a criterion, but wanted to explore the "principles (条理)" in the nature by himself.

From this aspect, it can be said that Baien is not limited to Confucianism and Buddhism, but aims to understand the principles of nature. On the other hand, Baien has inherited the knowledge of Neo-Confucianism. However, unlike Neo-Confucianism, he rejected the knowledge framework of Wuxing. For Baien, although Song Neo-Confucianism is different from Han Confucianism, it still uses Wu Xing theory to explain the nature of heaven and earth (Miura, 1978e). Although Miura Baien criticized the Wuxing theory, he still choose Yin and Yang as the base concept to develop its philosophical system, and tried to explain what are the structure of "principles" in the nature, and how "Qi (气)" transformed to become everything.

Therefore, Miura Baien attempted to build a new philosophical system to explain the nature. This shows that Baien no longer relies on the old knowledge framework, but hopes to use his own wisdom to explore nature science. He said:

> There are two taboos in viewing the world. Don't put your own will against others, don't cling to old knowledge, so let you don't care about the truth. The Yin and Yang are principles. These principles are derived from the principles of vegetation. (Miura, 1978e)

In Baien's view, when observing the world, in addition to not being excessively involved in subjective opinions, it is even more important not to "cling on to old knowledge". This is undoubtedly the criticism of Neo-Confucianists' understanding of nature based on the theory of Wuxing.

The important thing is that although Miura Baien criticizes the theory of Wuxing, it still chooses to use Yin and Yang as the base axis to develop its nature philosophy and explain the "principles" of the world. However, Baien thought that the past thinkers' discussions on the nature and Yin and Yang are not right, so he wrote *Gengo (Deep Words), Kango (Daring Words) and Zeigo (Excessive Words)* (Miura, 1978e).

Baien said:

> The one is the one Qi. The two are Yin and Yang. One becomes two, and two become one. One is innumerable. (Miura, 1978e)

He constructed his philosophical system from the perspective of dichotomy, with the logic of one being the whole and one one (two) being the part. Therefore, the so-called "principles" refers to the relationship between the whole and the part, from the perspective of the separation and combination of Yin and Yang. He used this logic to build a symmetrical conceptual relationship group.

3 Conclusion: Comparing to Dai Zhen

As we discussed above, Miura Baien's nature philosophy is also closely related to Ming-Qing Western learning. From the perspective of the history of science in East Asia, when Jesu missionaries such as Matteo Ricci went to China to preach, they also brought Western scientific knowledge at that time. They combined theology, philosophy, science, and Confucianism to do missionary work, so they translated many books concerning astronomy, mathematics, and even medicine into Chinese (Kawahara, 2015a). Afterwards, Mei Wending carried out research on Western learning in the form of saying the Chinese Origin of Western learning and he also cited the concept of Neo-Confucianism to explain those Western learning (Kawahara, 2015a). Others, such as Fang Yizhi and You Yi, accepted the influence of Western learning on the one hand, and on the other hand advocated to use the Chinese numerology to integrate those Western knowledge, and at the same time resisted it (Zhang, 1994).

After the Qing Dynasty, Qing Evidential Learning, which criticized Song and Ming Neo-Confucianism and advocated restoration of Confucian classics, gradually emerged. At the same time, Western learning also stimulated Evidential Learning scholars to explore mathematics from the perspective of the Chinese Origin of Western learning (Kawahara, 2015b). For example, the representative Evidential Learning scholar Dai Zhen, who was born around the same time as Miura Baien, was also influenced by Neo-Confucianism and works of Ming-Qing Western learning. In this respect, the comparison between his thought and Miura's thought is quite meaningful. A Japanese scholar Takata Shinji (1893–1975) has noticed the similarities between Miura Baien and Dai Zhen, and advocated that both of them talked about the theory of Qi, and thought principles lies in the Qi (理在气中), and believed that their studies were all connected with modern scientific research (Takata, 1962).

However, Dai Zhen still used Yin-Yang and Wu Xing theory to explain the human nature and his cosmology. For instance, he said:

> Nature is defined as allotment from the Yin and Yang and the five elemental forces (Wuxing) that have become blood and Qi, the knowing mind, objects …. The Heavenly way is just the Yin, yang and five elemental forces. (Dai, 1995)

Dai Zhen not only explained the way of heaven with the theory of Yin-Yang and Wuxing, but also explained human nature with it. In contrast, Miura Baien's philosophy is still the philosophy of Qi, but retains Yin and Yang, criticizes the concept of Wuxing.

Second, It is worth mentioning that Miura Baien later changed Yin and Yang to its ancient character and variant character "㑹昜". This may be his intention to remove the meaning of the concept of Yin and Yang in traditional Chinese thought, emphasizing its discontinuity between traditional Chinese philosophy and his own philosophy (Yamada, 1988).

Therefore, Dai Zhen's method did not lead to the construction of a new knowledge system, but introduced the thoughts of Western learning into his Confucian classics system. This may be related to civil service examination system, and Chinese scholars tended to stick to the concept of the supremacy of Confucian classics, and they accepted Western knowledge through Chinese translation of Western books. In contrast, in the late Edo period, there were no civil service examination system, and scholars had begun to translate Dutch books. On the basis of Dutch learning, Miura Baien had broken away from the shackles of traditional Confucian studies, and seemed to have further constructed a unique theoretical system. From the perspective of global history, we could see that there were various channels to bring Western knowledge into Edo Japan. These channels include such as works of Ming-Qing Western learning and works of Dutch learning.

In sum, why Miura Baien' philosophy is not easy to understand? One of the reason is that there were multi-layered and mixed context of local knowledge composed of Confucianism, Dutch learning, and western knowledge from Ming-Qing China, and even Kokugaku (國學, National learning) which we could not discuss further here. Baien combined these knowledge to construct his thoughts. Not only Baien, 18th century Japanese scholars more or less all share this kind of intellectual tendency. However, their acceptance of Western learning is still quite one-sided, making the knowledge they construct may have the significance of mediating the spread of modern Western knowledge indirectly, but it is also non-modern. It is inappropriate to estimate their works from the perspective of modernity. In the aforementioned article, Shimada Kenji also said that the Miura Baien's work was obviously not the first step in modern scientific thought, but it could be described as "the last and best achievement of Confucian-style natural philosophy." (Shimada, 1982) In fact, not only Miura Baien, a lot of Edo scholars after Baien, such as Hoashi Manri (帆足万里, 1778–1852) and Yamagata Bantō, were influenced by both Confucianism and Western learning, and they all had great achievement in natural philosophy and science.

At last, in addition to the scholars mentioned above, there are actually many important figures and ideas worthy of our research. For example, the aforementioned physician of Ancient Formula School, such as Yoshimasu Tōdō, and even the National learning scholars Motoori Norinaga (本居宣长, 1730–1801) and Hirata Atsuane (平田笃胤, 1776–1843), and Monnou (文雄, 1700–1763) who criticized the *Tainting huwuowen* and developed Buddhist astronomical ideas. Indeed, many figures in eighteenth-century Japanese intellectual history relevant to this article are worth exploring. After the rise of Dutch learning, they all learned relevant knowledge of Confucianism and Dutch learning on the one hand, but on the other hand they developed completely different scholarships. Therefore, how should we understand the intellectual history of eighteenth-century Japan? Perhaps what we need is: a global historical perspective, and at the same time a deep understanding of local knowledge context of Edo Japan composed of Confucianism, Dutch learning, National learning, and Buddhism. The colorful 18th century Japanese intellectual history is waiting to be discovered.

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References

Ayusawa, S. (1980). *Chirigakushi no kenkyū* 地理学史の研究 [Studies on the history of geography]. Harashobou.

Dai, Z. (1995). Mengzi ziyi shuzheng 孟子字义疏证 [Remarks on the meaning of the characters in Mencius]. In D. Zhang (Ed.), *Dai Zhen quan shu* (6, pp. 179–180). Huangshan shunshe.
Elman, B. (2005). *On Their Own Terms: Science in China, 1550–1900*. Harvard University Press.
Fukuzawa, Y. (1971). Prospectus of establishing Rankadou. *Fukuzawa Yukichi Zenshū*, *20*, 387–389.
Gotō, K. (1971). Shisetsu hikki 師說筆記. In K. Aki & T. Furushima (Eds.), *Kinsei kagaku shisō 2*, Nihon shisō taikei, no. 65 (p. 392). Iwanami Shoten.
Kagawa, S. (1982). Ippondo koyo igen一本堂行餘醫言[Ippodo's Remaining Medical Words]. In *Kinsei kanpo igakusho shusei 65* (p. 22). Meicho Syubankai.
Kawahara, H. (2015a). *Western learning spreading Eastward and China, Korea and Japan*. In Seigaku tosen to Higashi Ajia 西学東漸と東アジア (pp. 11–44). Iwanami Shoten.
Kawahara, H. (2015b). *Dai, Z & Western calendrical calculations*. In Seigaku tosen to Higashi Ajia 西学東漸と東アジア (pp. 189–218). Iwanami Shoten.
Kawakami, H. (1905). Miura Baien no Kagen oyobi Motoori Norinaga no Tamakushige ni arawaretaru kahei-ron. *Kokka Gakkai Zasshi*, *19*(5), 79–105.
Maeno, R. (1976). *Kareihigen* 管蠡秘言. In J. Numata & H. Hideo (Eds.), *Yōgaku 1*, Nihon shisō taikei, no. 64. Iwanami Shoten.
Miura, B. (1978a). *Gengo*玄語. In *Baien zenshū 1*. Meicho Kankoukai.
Miura, B. (1978b). *Zoubutsuyodan* 造物餘譚. In *Baien zenshū 1*. Meicho Kankoukai.
Miura, B. (1978c). A letter to Buddhist priest Zyouen. In *Baien zenshū 1*. Meicho Kankoukai.
Miura, B. (1978d). *Kizanroku* 歸山錄1. In *Baien zenshū 1*. Meicho Kankoukai.
Miura, B. (1978e). Zeigo 贅語. In *Baien zenshū 1*. Meicho Kankoukai.
Miura, B. (1978f). Reply to TagaBokkei again. In *Baien zenshū 2*. Meicho Kankoukai.
Miura, B. (1979). Urashi Shuki 浦子手記. In R. Abe (Ed.), Miura baien jihitsu k*ōhon narabini kyūzōsho kaidai*. Bunkazai Hozonkai.
Naitou, K. (1897). *Kinsei bungaku shiron 近世文学史論*. Seikyousya.
Ogyū, S. (1973). Benmei 辨名. In K. Yoshikawa (Ed.), *Ogyū Sorai*, Nihon shisō taikei, no. 36. Iwanami Shoten.
Saigusa, H. (1972). The philosophy of Miura Baien. In *Saigusa Hiroto Chosakusyu 5* (pp. 17–138). Chūō Kōronsha.
Shimada, K. (1982). The thought of Miura Baien: From the viewpoint of the history of Far Eastern Confucia thought. In K. Shimada, & M. Taguchi (Eds.), *Miura Baien, Nihon shisō taikei, no. 41*. Iwanami Shoten.
Takata, S. (1962). Miura Baien and Dai Tung-yuen. *The Studies of Asia and Africa*, *2.3*, 1–19.
Takeda, O. (2018). *Jussuugaku no shikō: Kōsa suru kagaku to senjutsu 術数学の思考:交叉する科学と占術*. Linsen Shoten.
Torii, Y. (2015). *Maeno Ryōtaku: shōgai ichijitsu no gotoku 前野良沢:生涯一日のごとく*. Shibunkaku.
Yamada, K. (1988). *Kuroi kotoba no kūkan: Miura Baien no shizen tetsugaku 黒い言葉の空間:三浦梅園の自然哲学*. Chūō Kōronsha.
Yamada, K. (2017). *Nihon no kagaku: Kindai e no michishirube 日本の科学:近代への道しるべ*. Fujiwara Shoten.
Yoshida, T. (1985). The reception of questions and answers on astronomy and meteorology. *Journal of History of Science, Japan Series II*, *24*(156), 215–224.
Yoshimasu, T. (1980). Kosho Igen 古書醫言. In *Tōdō zenshū*. Shibunkaku.
You, Y., & Fang, Y. (1730). In N. Seikyū (Ed.), *Tianjing huowen(Tenkei wakumon) 天经或问*. Shōyōken.
Zhang, Y. (1994). *Ming mo Qing chu li xue yu ke xue guan x zai lun 明末清初理学与科学关系再论*. Student book.