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**論說**

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**An Energy Historical Overview of the Ceramics-making Industries of Japan & China: A survey of narratives and empirical case studies related to production & environmental implications of fuel use between late pre-modernity to the contemporary period.**<sup>1)</sup>

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**Abstract**

Energy transitions for many mass manufacturing industries have transited deterministically from wood and timber to hydrocarbons like coal and then oil and natural gas. Some motivations for making this transition were based on fuel efficiency and increasing environmental awareness and progress made in ceramics-firing technologies. This paper is interested to examine narratives related to the deterministic progression of the type of fuel use in the ceramics-making industry. In studying this industry, the paper is interested in three questions: (1) narratives related to the natural progression of fuel use; (2) the impact of environmental considerations on fuel use; (3) technological trends in this area behind conscious decisions in the use of fuels.

Keywords: energy, environment, history, Japan, China, ceramics

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## **Introduction.**

Energy transitions for many mass manufacturing industries have transited deterministically from wood and timber to hydrocarbons like coal and then oil and natural gas. Some motivations for making this transition were based on fuel efficiency, increasing environmental awareness and progress made in ceramics-firing technologies. This paper is interested to examine narratives related to the deterministic progression of fuel use in the ceramics-making industry. In studying this industry, the paper is interested in three questions: (1) narratives related to the natural progression of fuel use; (2) the impact of environmental considerations on fuel use; (3) technological trends behind conscious decisions in the use of fuels. This paper concentrates on fuel use for the kiln-firing process rather than pre-firing production stages due to three reasons. First, the kiln-firing process is a necessary component for all ceramics manufacturing processes regardless of historical time and context. Therefore, it is useful for comparatively studying the evolution of fuel use for the industry. Second, transition from the use of timber and wood to fossil fuels is directly related to technological advancement. This is one of the main factors behind changing energy fuel use. Thirdly, the firing process in the kiln

is arguably the most important production stage because it gives the ceramics the definitive color and glazes that characterizes the appearances of the ceramics. These are visible and observable aesthetic results of different forms of firing techniques and fuel usage. The structure of the paper is as follows. After the introduction, the paper will discuss the methodology used for this paper. This is followed by a historical overview and literature review of fuel use in the ceramics industry, the purpose of which is to point out the deterministic march of energy use towards more efficient and environmentally-friendlier fuels. It is then followed by a concluding section discussing some evolving trends behind traditional ceramics production methods in terms of energy use today. This paper can be read as a historical overview, a survey piece, a history of narratives, an empirical case study, a comparative essay, a review essay, a preliminary scope paper and/or a historical survey piece or a textual and oral interview analytical essay related to the subject matter.

## **Methodology.**

This is a survey piece with a macro historical overview that bases its theoretical framework partially on a world historical perspective on general energy transitions to organize its main arguments and points chronologically. It discusses the transformative use of fuel influenced by environmental, productive and aesthetic considerations. For the section on selected case studies, the paper also utilizes fieldwork based on conversations, dialogues and interviews with ceramicists, artists and potters. The oral historical method of corroboration is employed

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here as conversations and oral interviews provided by the artists are integrated with textual sources on the subject matter. As part of the fieldwork conducted for this paper, the author has carried out observation work in Hong Kong and Japan, speaking to individual artists and visiting museums as well as galleries. At the museums and galleries, the author set about collecting textual narratives related to the subject matter. At the point of this writing, the author is applying for a grant to conduct similar research in mainland China's Jingdezhen ceramics-making region. The paper is also based on textual analysis and the author has spent time in Japan and Hong Kong searching for literatures specifically on energy transitions in the ceramics industry. Japanese manuals on ceramics-making as well as kiln construction proved to be a rich source of information for the author in the area of fuel use. In this paper, these manuals are used as texts for social scientific and humanities analyses in the context of energy transitions in the ceramics-making industry. A possible follow-up research paper in the future may look into Japanese communities and hobbyists who are interested in building or acquiring their own kilns for recreational purposes. This may explain why there is an active publishing industry on the topic of kiln construction and firing methodologies for making ceramics.

The paper does not pretend to be comprehensive but presents some historical milestones of the ceramics-making industry and the energy sources that the industry uses in Northeast Asia for discussion. The writing focuses mainly on the historical period between late pre-modernity (19th to early 20th centuries) till the contemporary era, a period of important transition in energy-related technological

developments in the manufacturing industries of Japan and China. The paper is interested in both observable energy transitions from one fuel use to another as well as related narratives from scholars and practitioners. For the historical section of this essay, the author will utilize some relevant points from his published historiography and survey piece *Re-Centering Trade Periphery through Fired Clay: A Historiography of the Global Mapping of Japanese Trade Ceramics in the Premodern Global Trading Space* for discussion on ideas about energy transitions in the ceramics industry during late pre-modernity. For the section of this paper related to Japan's *mingei* movement, this writing is indebted to Brian Moeran's publication *Folk Art Potters of Japan* which provided the analytical framework for the paper. Moeran's work argues that the *mingei* boom of the late 1950s to the early 1970s was driven by the popular media which highlighted *mingei* folk pottery as a component of Japanese tradition that was eroded by modernization.<sup>2)</sup> For this paper, instead of Moeran's anthropological perspective, the author is utilizing a historical perspective to look at some possible reasons behind the revival and preservation of traditional methods of ceramics production. For the concluding section on ideational trends, the author is relying on his fieldwork conversations and interviews with contemporary Hong Kong potters, ceramicists and artists on ideas and narratives related to post-modernity and fuel use.

## **Pre-modernity.**

The pre-modern export ceramics industries of Japan and China were established based on the use of wood, timber, charcoal and coal fuels

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to power the industry. But energy use in the industry was transformed when modern coal-fired kiln technologies for mass manufacturing were introduced in the late 19th and early 20th centuries. Subsequently, other types of fossil fuels like oil and gas were utilized. Changes in fuel use marked the modernization of the industry in East Asia. The state assisted in this modernization process by providing infrastructure support and welcoming foreign experts to lend their expertise to the modernization process. The case study of Japan is especially instructive of this process. In this historical overview, three questions are relevant here. First, what production processes were altered by this progressive change in energy use? In the same vein, how was the scale of production altered? How did the nature of the products change with evolving fuel usage? Second, did fuel usage change because of environmental considerations? How and when did environmental consciousness come about in the industry? Third, how was the nature of export ceramics trade altered by more effective mass production techniques? This short paper cannot explain all these questions comprehensively but provides some viewpoints for further discussion.

### **Energy transitions in the Northeast Asian porcelain industry- a literature review.**

The next section of the paper reviews secondary literature related to energy use in the ceramic industries of Japan and China. Wanda Garnsey's publication on Chinese kilns *China Ancient Kilns and Modern Ceramics A Guide to the Potteries* is one of the most important existing literatures on the subject matter. Through a comprehensive

study of different kilns located all around China and detailing how these kilns were operated in different dynastic periods, Garnsey's publication indicates how a variety of factors including aesthetics and fuel efficiency were influential on the choice of fuel and energy use in pre-modern Chinese ceramics production as well as the subsequent modernization of Chinese kilns in the modern and contemporary periods. The Chinese are amongst the oldest pottery and ceramics makers in historical terms. They faced conscious choices between different fuel usages in ceramics/pottery manufacture. The author also searched for materials, arguments and narratives related to the decision-making process behind fuel use in secondary literature. Wanda Garnsey's seminal study on the history of kilns in China is probably one of the most prominent works in this area.

“The seventy-odd ancient kilns of a thousand years ago were then situated near the Ju River, with a plentiful supply of brushwood and coal nearby. The older potters working at Yen-ho-tien nowadays thought that both fuels had been used at different times, the fact that wood firing gives greater subtleties and depths in glaze quality add weight to the idea that brushwood was used.”<sup>3)</sup>

Garnsey's study indicated three important points. First, fuel use was closely associated with geography. Three natural resources supply sources are highlighted here: water (river), timber (forests) and coal (mines). This characteristic appears to be a typical feature of major historical kilns in China. Besides the Ju River kilns, other prominent historical examples can also be found in China, e.g., Jingdezhen and

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celadon-originating regions. The famous Jingdezhen kilns in pre-modern times obtained lightweight and thick pinewood that was ideal for use as kiln fuel from Anhui province.<sup>4)</sup> The average kiln firing consumes about 11 000 kg worth of fuel and a large-scale kiln required about 46 tons of fuel daily which depleted forests, necessitating going upstream of Changjiang to obtain more fuel sources.<sup>5)</sup> The coal fuel for making the glazes came by boat from the south.<sup>6)</sup> Therefore, availability of natural resources determined the location of the kilns. In another example, the production of the celadon variety of ceramics is based on fuel use differentiated between the northern and southern regions of China. While southern celadon are fired using brushwood, northern celadon are fired using coal because coal is readily available in northern China.<sup>7)</sup>



Photo above author's own: a contemporary celadon piece, incense burner three-legged.

Although transportation technologies have improved tremendously in the contemporary era, geographical factors remain of some importance even today in both China and Japan. In my conversations with the fourth generation of Hong Kong contemporary potters, they revealed that an older master potter Mr A from the third generation of Hong Kong contemporary potter moved to the rural district of Sai Kung



which contained some raw materials that he found suitable for making some unique indigenous glazes, including jade glazes. Similarly, in the case of Japan, the proximate availability of cedar and pine trees in Japan provided the necessary wood-based fuels for traditional kilns in pottery-making regions like Sarayama, Arita and Shigaraki.

Second, the availability of natural resources had an impact on the aesthetical outcome of the ceramic products although it is difficult to determine historically if the presence of natural materials and commodities influenced the aesthetics of the finished products and the production process or the other way round. Third, coal was historically used in China for ceramics production. While the first and third observations are important and related to energy use for the ceramics industry, they are mainly found in the field of pre-modern historical and archeological studies. Point number two is of greater interest to this paper because it has implications for artists who are trying to reproduce those glaze effects under modern and contemporary conditions for their works of art. The connection between energy source and desired effects of glazes indicates a conscious choice of fuels based on the different desired outcomes of glazes. For a comparative perspective, the author interviewed some contemporary ceramicists in Hong Kong about the aesthetic differences between different types of fuels. One of them, Ms X, noted this in an email message:

“To my limited experience, I do not have any idea of the difference of effect between the pottery fired by coal and that of gas/wood. I guess wood gives the richest variations and accidental interesting color and shades; while that of coal, like electricity

would be more even and steady.”

In the above response, it indicates that besides glaze variation, another important factor is handling. In the pre-modern era, aesthetic reasons sometimes justified preserving traditional firing methods despite the availability of newer kiln technologies. For example, reproducing high quality wares like the *Ju* wares (*Ruyao*) continues to demand individual craftsmanship and attention to careful glaze application techniques rather than mass production methodologies. They require careful individual attention. Contemporarily, energy sources like electricity appear to provide more control over the final glaze and color attainable. Fuel use and its significance with regards to ease of handling can also be found in pre-modern ceramics-making history. One example is the important southern *Longquan* (*Lungchuan*) or celadon variety which are fired using brushwood (pine) timber energy because the fuel is an “easier fuel with which to maintain and control the necessary reduction firing”<sup>8)</sup>. In comparison with these pre-modern examples, handling has become precise today with the use of microcomputer (*maikon* in Japanese language) and panel controls (*paneru* in the Japanese language) found on contemporary models of electric kilns.

Besides fuel handling and geography, another historical factor behind the choice of fuel was based on productivity and fuel efficiency. Fuel use in the modern era placed accent on efficiency of firing so coal was a preferred choice. Some historical Chinese wares were manufactured using coal to meet greater output capacity. For example, the famous *Chun* (*Jun*) wares used coal as an energy source in larger-

scale kilns instead of wood.

“In the vicinity of Yu-hsien, where the old walled city of Chun-chou was located, a large Sung Dynasty Chun kiln site has been found. Though it is now vegetable farming land two kilns have been carefully excavated and roofed over to demonstrate the type of kilns the Sung used here, one measuring 1 metre wide by 2 metres long and the other closer to 2 metres by 3 metres. A larger version nearby measures 3 by 5 metres, the height at the door being 1.6 metres. The city kilns here covered an area of 300 000 square metres. They were fired with coal and were formed by cutting into a loess slope.”<sup>9)</sup>

These large-scale kilns appear to be early proto-industrial kilns built for substantial volumes of ceramics production. Several points are unclear at this point of time. Did the larger kilns in *Chun-chou* (*Junzhou*) necessitate the use of the more productive and effective coal energy? Was productivity more important for *Junyao* than *Ruyao*, thereby accounting for coal use? Can these facts be authenticated by evidence that there are numerically more Junyao than Ruyao in terms of material artifacts? These questions are unlikely to be answered conclusively, and deserve further detailed archeological studies which are outside the scope of this paper. But in terms of the history of energy use in the ceramics-making industry, the two examples indicated above showed that both wood and coal had been used in the Chinese ceramics industry for a long time and for different reasons. Coal requires the additional step of mining and therefore the presence of

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a mining workforce and its division of labor was needed. In the pre-modern period, the location of coal resources sometimes determined the migration of kiln workers and the locations of the kilns themselves.

“During the Sung dynasty a few clans skilled in the potter’s art emigrated across the border from Honan and, finding abundant coal and potter’s clay near the Black Dragon Cave in what is now southwestern Hopeh, they settled down and remained for ten centuries…An age-old division of labour ranks them as diggers of clay and coal, mixers of clay, loaders of kilns, glaze dippers, bakers, decorators and potters…The men who dig clay and coal receive the lowest wages, only ten cents day…”<sup>10)</sup>

This narrative indicated that, not only did the location of energy resources determined the kiln address, their presence also accounted for the migration of human labor. Historically, it was evidential that there was already a systematic use of coal energy and specialized division of labor to extract resources in pre-modern times. Coal became a fuel of choice in early modernity in Asia’s ceramics-making industry.

## **Japan in early modernity.**

Historically, in the context of Northeast Asia, the first modern kilns appeared in Japan near the time of its Meiji Restoration 1868, the first Asian nation in the world to modernize and Westernize its industrial production system for mass production. Originally, like the Chinese and other Asian ceramics industries, Japanese ceramics manufacturing

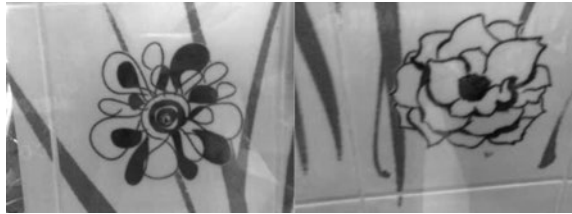
facilities and industries used traditional wood-fired technologies to produce their porcelain. But German chemist Gottfried Wagner (1831-1892) transformed the industry when he introduced modern coal-fired technologies to the ceramics industry, revolutionized the industry and became known as the creator of the modern ceramics industry in Japan.<sup>11)</sup> According to The Kyushu Ceramic Museum, Wagner constructed the inaugural Westernized coal-fired kiln in Arita in 1870 and he supervised the building of another kiln in Tokyo in 1882.<sup>12)</sup> Gisela Jahn's important work on *Meiji Ceramics* details Wagner's (sometimes spelt as "Wagener") contributions to imparting coal-firing methodologies to the Japanese:

“He supervised construction of a coal-fuelled kiln, the first in Japan and the first in a long sequence of experimental kilns that came to an end in 1902, when a construction with updraught was finally mastered. Not until then did coal-fuelled kilns become widely used in the production of porcelain in Japan, not only in Arita, but also in such other centres as Seto and Tajimi.”<sup>13)</sup>

Modernity is also signified by the transition from the use of timber-fired dragon kiln to coal-fired kilns.<sup>14)</sup> From 1897 to 1906, the Japanese state aided ceramics-making regions with the technological transition to coal-fired kilns, including financing a test-kiln built in the Seto Ceramics School in 1902.<sup>15)</sup> Modern coal-fired kilns revolutionized the ceramics industry, allowing smaller-scale folk ware industries to produce highly standardized Western-style dinner table ware as well as other industrial ceramic products such as building tiles.<sup>16)</sup> Modern coal-fired technologies made it possible to have comparable quality control

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for each individual item. This was important because Western dinnerware sets required accurate replication of standardized patterns with little variations in size and patterns. Meiji Japan's Arita and other porcelain-making centers followed these requirements to export wares to Europe and obtain foreign credits needed for national modernization. Such manufacturing processes also became important learning experiences for Japan's overall modernization process, especially as it picks up technical skills for moving on to higher value-added manufacturing. Japan's head-start over other Asian industries in this learning experience and its culture of continuous innovation allowed her to develop sophisticated electric and gas kilns later in the postwar years, making her a world leader in kiln technologies.



Photos above (author's own): examples of contemporary Arita ceramics blue and white tiles on the walls of a train station in Japan.



Photo above (author's own): photo above portrays a hand-drawn Arita blue and white plate.



Photo above (author's own): early prewar Arita blue and white export wares.



Photos above above (author's own): more examples of contemporary Arita wares.

## **People's Republic of China (PRC) and early postwar statehood and modernity.**

Likewise, coal also became an important energy resource in the PRC's early phase of industrialization. The relationship between the location of energy resources and ceramics-firing industrial facilities remains relevant in the modern context here as well. Large-scale ceramics production areas were strategically located near the coal production areas, e.g., in Tzu-po municipality's Po-shan.

“In [1930s] Po-shan the Japanese owned the local coal mines and had started many small domestic potteries, using coal to fire the kilns. After the war when Po-shan was rebuilt some of the old beehive-shaped kilns were rehabilitated to supply the immediate needs of the local peasants and to start a ceramic industry. In 1955 there were one hundred workers who could set about building up the industry but their first products were only of medium quality. After some of the potters had visited the Tang-shan complex in Hopeh Province for further experience the quality had so improved that by 1959 Tzu-po porcelain was being exported to South-east Asia, Canada, Australia, the USSR, Cuba and Europe.”<sup>17)</sup>

There are three important points in this quotation. First, there were some relationship between Japan’s modernity and the PRC’s nascent industrialization. Japan’s modern coal facilities were taken over by the PRC for their own production. The modern coal mines made it possible to supply early modern kilns with energy for production. Second, quality continues to be a motivating factor for fuel use and technological upgrading. Like their Meiji Japanese counterparts, the PRC industrial potters needed to standardize their wares with comparable equivalent quality for export to developed markets overseas in order to earn foreign credits and currencies to finance their nation-building industrialization process. Third, modern coal facilities left behind by the Japanese and primitive bee hive kilns served as learning experiences for the PRC industrial workers to pick up the necessary technical skills to run larger higher value-added manufacturing facilities with greater sophistication in the later stages of their



industrialization process. Po-shan gave rise to a local modern industry that served as a learning experience for other facilities. It also indicates a main objective for running, managing and building any industrial kilns – a desire for continuous constant improvements of quality in the product output. Po-shan's case indicated that, to maintain comparable standards for firing industrial, utilitarian and mass-produced wares, hydrocarbons like coal were now preferable to timber and wood, at least in this early postwar industrial phase in China. Another coal-rich area which utilized coal energy resources is found in Gansu's pre-1949 city of Shan-tan which also had beehive kilns that utilized local coal from smaller mines to manufacture pots.<sup>18)</sup> Coal energy permanently became part of the energy landscape in early PRC industrialization period due to the advent of mass production.

Progression towards higher value-added facilities can also be found in the Hong Kong case study. Ping Chau Island in Hong Kong used to be a major ceramics production and painting center for manufacturing export ceramics with *Guangcai* designs to the developed consumer markets found in the West in the 1960s. But when China opened up the rest of the world economically, Ping Chau found itself bypassed as a ceramics production center due to cost factor. Hong Kong's economy transitioned towards higher value-added manufacturing and service industries.

## **Transition to oil.**

While coal energy was equally utilized in the pre-modern and modern contexts, oil and petroleum energy was the clear demarcation

between pre-modernity and modernity. The march and progression of modernity and modernization did not stop with coal energy use. As China converted to the use of oil and petroleum energy for its mass manufacturing industries, its ceramics industry also made a similar transition. Again, back to the example of Po-shan:

“By encouraging co-operation and exchange of ideas the great ceramic complex at Ching-te-chen in Kiangsu Province has benefited the now extensive industry at the Po-shan State Pottery. The proximity of Po-shan to the Sheng-li oilfields is reflected in the fact that ten of the fifteen continuous kilns in the potteries are now fired with oil, the rest with coal gas produced in their own factory. Po-shan was the first ceramic complex in China to install continuous kiln.”<sup>19)</sup>

Due to the large geographical makeup of China, kiln modernization took place differentially in different parts of the country. In some parts of China, e.g., in the Yixing (I- hsing) kilns, conversion from traditional dragon kilns to continuous coal-fired kilns arrived in the 1960s.<sup>20)</sup> The association of modernity with energy use is not an exception here. The Chinese ceramics industry showed the same progressive transition from timber and wood to coal and oil like other modernizing industries. This transition can also be found extensively in world historical literature related to energy use in the modern period. The progression continued until environmental consciousness and energy shortage led to a rethink on the deterministic progression of energy use based on environmental factors. Below is the author’s diagrammatic representation of the

evolution of hydrocarbon use in mass manufacturing industries:

Diagram of fuel progression from timber/wood to alternatives (author's own diagram).

Timber/Wood → Coal → Oil → Gas → alternative energy resources?

\_\_\_\_\_ [Premodernity to modernity]      [Modernity] [Post-modernity henceforth?] →

As for Japan, she started to rethink about oil use after the 1973 oil crisis when a threatening oil embargo motivated Japan to think about energy efficiency in all her industrial sectors. Japan retooled her technologies to make them more environmentally-friendly and energy efficiency. Consequently, contemporary Japanese kiln-makers find various ways to develop more energy-efficient and environmentally-friendlier oil-driven kilns. These kiln products have been marketed as “smokeless” or “environmentally-friendly (*kankyou ni yasashi*)” that runs on kerosene but can produce the same effects as traditional kilns. This is a revolutionary feature given that kerosene-powered kiln generally give off an odor which may make it unsuitable for use in the household. Other than decreased levels of waste products and emissions, kiln technologies are also touted to have the capabilities to minimize noise levels (another disadvantageous feature of kerosene-fired kilns’ exhaust fan). Continuing interest in oil-fired kiln technologies is also due to the fact that, like coal, oil-based kiln technologies allow ceramics to have finished natural glazes but even the new-generation oil-fired kilns releases carbon dioxide and other emissions into the air. They are also larger and less portable than electric kilns although the insertion of kerosene oil is comparatively easy to manage.

Therefore, besides creating better kilns that utilized oil more

efficiently, Japan kiln makers also considered other alternatives. As the first country to modernize in East Asia, Japan also became the first postwar economy in East Asia to emphasize the environmental aspects of industrialization. Japan experienced the rise of environmental movements led by civil society in the aftermath of a series of high-profile environmental challenges like Minamata in the 1960s and 1970s. Environmental reasons were contributive to the development of environmentally- friendlier and energy-efficiency technologies. Newer kiln technologies paralleled the environmental movement and energy efficiency considerations with the development of gas and electric kilns as viable alternative options to older technologies. Kilns also have heat-retentive properties that contribute to the efficient use of energy.

It is important to add an after-note here. There is evidence to indicate that the post-1973 historical period was not the only time when environmental awareness became prevalent in Japan. Pre-modern texts and evidence indicates that the Saga local authorities in Kan'ei 14 (1637) limited access to the timber forests and hillsides by expelling 826 native ceramicists and prevent the number of Korean pottery-makers coming to the region due to excessive extraction of these resources.<sup>21)</sup> The topic of pre-modern environmental awareness and policies is an important one and should be pursued in a separate study. A significant point to note here is that technological development is not the only solution to energy and environment-related challenges.

Rationalization of consumption is a time-tested alternative or supplement to technological solutions.

## **Transition to gas and electric kilns.**

According to Yao Chun's evaluation, Japan's lead in porcelain is due to continuous innovation in new types of kiln technologies.<sup>22)</sup> Japan adapted German technologies for their own use and embarked on a gas revolution in porcelain manufacturing in the 1970s.<sup>23)</sup> In an age of environmental awareness, coal appears to be inefficient, polluting and dangerous compared to cleaner fuels like oil and gas, although gas has temporarily displaced oil as an even cleaner source.<sup>24)</sup> According to Eiichi Yamashita, the ceramic manufacturing town of Seto used so much coal for firing porcelain that even sparrows flying over the town turned black from the soot pollution.<sup>25)</sup> Natural gas has lower emissions than oil in general terms. Gas kilns are cheap to operate and can fire a larger volume of ceramics in one go and, like oil, it allows finished ceramics glazes to reveal their true qualities but in exchange, it is noisier and has more emissions than electric kilns.

Similarly, like its gas-fired counterparts, the use of electric kilns is now widespread. Their advantageous features are easy handling, clean odorless emissions, portability, compactness and suitability for urban environments. Electric kilns are also known to have quiet and silent operations and easy to handle temperature controls. Because of the ease of temperature control, defective pieces are minimized but the chances of obtaining "accidental" glazes that are aesthetically pleasing are minimized as well. In contrast, because of the quantity of ceramics fired (and the large size of these kilns) and the difficulties in temperature control, longer duration of firing in traditional timber or

coal-fired kilns, the outcome of glazes may not conform to one's intended preference. The difficulties in operating traditional kilns compared with electric kilns also mean that the latter has a liberating effect, facilitating a wider participation of interested hobbyists and recreational potters. This is also helped by the fact that electric kilns are less costly to operate. In fact, Japan experienced a 100V electric kiln boom in 2005, making it possible for many people to realize the dream of having a kiln in the home.<sup>26)</sup>

The author's field study of the fourth generation of contemporary Hong Kong ceramicists indicated three advantages of gas and electric kilns. First and foremost, they were cleaner. Both types of kilns gave off less waste products and emissions compared with timber or coal kilns. Environmental factors were especially important in Hong Kong because of its densely-populated urban environment. Their past experience with burning timber and even recycled furniture pieces resulted in sooty smoke and fumes. Second, these kilns were highly portable and fitted snugly into urban studios. They were easy to use compared with timber or coal fired kilns which required complicated preparation procedures and took up space for storage. There was no need for a community-wide mobilization of human resources for production-related activities. Third, they provided ceramicists and artists with greater control and handling to achieve ideal glazes. But technological, operational and environmental factors are not the only considerations for preserving older methods of production or hydrocarbon-operated technologies. Heritage, traditions and aesthetic factors are motivations to retain older technologies and production methodologies. Some examples of justifications for conservation of older kilns are discussed below.

## Concluding section – protecting heritage.

The concluding section examines some empirical examples of contemporary use of traditional fuels. With technological progress, wood and timber-fired technologies have been relegated to history and old pre-modern kilns are now preserved as a form of heritage. Selected southern Chinese traditional kilns were spared from demolition by heritage agencies, with their production replaced by “technically more efficient automatic electric or oil-fired furnaces”, e.g., the Shiwan (Shihwan Potteries) dragon kiln with dimensions inside the kiln measuring 50 meters in length, 1.7 meters tall and 1.5 meters in width.<sup>27)</sup> This preserved kiln was historically used for firing crystalline and flambé red glazes that require the careful management of the firing process based on pinewood fuel, a traditional technique that serves as important training for younger artisans keen on carrying on this artistic tradition.<sup>28)</sup> Shiwan is not the only prominent pottery-making region to have heritage conservation efforts. Further north, Gan Xueli’s publication indicated the last traditional egg-shaped kiln in Jingdezhen still uses wood to fire ceramics (all other kilns in the area had already converted to using oil).<sup>29)</sup>



Photo above author's own: an example of a large piece of contemporary Shiwan pottery.

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Photo above author's own: contemporary Shiwan tiles made to resemble old tiles mounted at an old Chinese temple in Hollywood road of Hong Kong.



Photo above author's own: a close-up of the Shiwan tiles at the same temple, old mixed with new tiles.



Photo above author's own: another example of construction material-related Shiwan ware found in Hong Kong.



Photo above author's own: a picture of contemporary Jingdezhen dinner ware (mass-produced utilitarian ware) used for serving food in Hong Kong.





Photo above (author's own): modern Jingdezhen studio pieces.

In the author's fieldwork in Hong Kong, the fourth generation of ceramicists revealed the existence of a traditional Wun Yiu kiln *Wanyao* (kiln used for making porcelain bowls) in Tai Po (*Dapu*) Road which is similarly preserved for the same reason as the last remaining traditional kiln in Hong Kong. There are quite a number of online resources related to this kiln and one of the most informative website is run by the Heritage Office in Hong Kong. The Wun Yiu embodies many of the points that are discussed earlier in the essay. First it is built on sloping land that connected the villages of Sheung Wun Yiu, Ha Wun Yiu, To Chi Yin, Cheung Uk Tei. The mining facilities located at the facility indicated a specialized division of labor existed in extracting the natural resources needed for production. Natural resources again determined the geographical position of Wun Yiu which is located near "the rich clay mines in the hills, dense vegetation and the abundance of firewood".<sup>30)</sup> Its dragon-kiln design needed the use of firewood nearby for firing. Though the technologies at this historical site are made obsolete by modern technologies and contemporary environmentally-friendly kilns, they are consciously preserved by the Hong Kong

government as important heritage artifacts.

Not all conservation efforts originate from the state. In the case of Japan, the author visited an *anagama* kiln in Izumi-city in Japan in the summer of 2011 that was reconstructed from ideas related to kiln construction dating back millennia in the Satsuma tradition. I have written a separate paper for this observation study. The construction of a modern *anagama* kiln today typically consists of building a kiln using fire-proof bricks on a natural slope or alternatively building a wooden frame over a piece of flatland before covering up the wooden frame up with bricks. The wooden frames are needed to create the curvature for the kiln cover. When there are no natural slopes available, e.g., on flat plains or agricultural lands in Japan, some kiln-builders build soil ramparts to create the sloping angle. The bricks today are generally held together with applied fire-proof mortar. The base of the kiln is sometimes constructed using bricks or concrete.

Reconstruction or replication of ancient kilns may be important for heritage because the pre-modern climbing kilns (*noborigama*) in the major porcelain-producing centers of Arita and Okawachi are disappearing. The Kyushu Ceramics Museum noted this phenomenon:

“Climbing kilns (*noborigama*) were rebuilt over and over again, bearing the pounding of many years of flame, wind and rain. However, even vital kilns pouring forth greater amounts of smoke disappear from view when shifts in styles occur, leaving only the traces of their former kiln site.”<sup>31)</sup>

Satellite pictures and archeological expeditions have facilitated

the identification and preservation of these old sites. It is likely to take a combination of state, non-state and local community initiatives to restore and revive these kiln sites and uncover artifacts eroded by natural elements. The statement above indicated one important observation which is the highly- visible large amount of emissions from the climbing kilns that are evidential of some form of pollution from using wood and timber fuels even in the pre-modern context. The picture below shows a model of *noborigama* (climbing kiln).



Photo above author's own: a model of the *noborigama* (climbing kiln).

Besides understanding about the past, the preservation, reconstruction and replication of older kilns also serve another purpose. As the author went through a number of guidebooks on kiln tours or pottery-making hobbyist guides published in Japan, he realized that kiln-tours have become a tour industry by itself. Oftentimes, superlatives accompany description of the kilns, depicting them as the largest in a region or the most historical kilns nationally, etc. This is another important topic for further studies in a later paper. The implications of a thriving kiln- tour industry may mean greater prospects of reviving kilns fired using wood, timber or other older

forms of energy resources. These activities that produce souvenir pieces may eventually contribute to the financial sustainability of local communities that owns such historical heritage.

### **Passing on traditional skills.**

The Saga Prefectural Museum owns an eight-volume *An Illustrated Guide to Domestic Production in Hizen Province* which is a visual representation of major industrial activities and facilities in that area dated An'ei 2 to Tenmei 4:1773-84).<sup>32)</sup> The Cultural Object's ceramic volume has drawings of four main stages of production: the tools for making ceramics, wedging, throwing and checking after firing, a rope for transporting fired ceramics and a picture of the kiln.<sup>33)</sup> These texts serve as important cultural heritage that passes down pottery-making knowledge to future generations of ceramics-makers keen to replicate traditional skills involved in making pottery. Besides preserving these forms of heritage artifacts, intangible heritage like artisanal skills are also preserved and passed on to succeeding generations of craftsmen. Some potter communities in Japan like Sarayama continue to use older methods of kiln-firing to keep traditional craftsmanship alive and also return to natural and non- chemical-based methods of glaze application. Moeran's study also contained critical views from the community of the gradual use of 'non-natural' fuels (compared with 'natural' fuels such as timber and wood) in *mingei* folk pottery production processes:

“Almost all *mingei* pottery kilns- including, especially, that of nearby Koishiwara-have been ‘ruined’ by material changes that

upset people' s relation to 'nature' : for example, the substitution of charcoal for wood in the firing of kilns..."<sup>34)</sup>

The statement appears to hint at the importance of factors other than solely aesthetic, energy and technological considerations that are influential on the production of ceramics. Moeran argues that "the philosophy of *mingei* is the sort of moral aesthetic that tends to arise in all industrializing societies that experience rapid urbanization and a shift from hand to mechanized methods of mass production".<sup>35)</sup> According to this interpretation, one differentiating point between making *mingei* pottery as opposed to mass-produced dinner wares is the ingredients and energy commodities used in production itself. Integrated into the definition of folk art itself is an element of the utilization of "natural" materials. Three conditions appear in Moeran's definition of folk arts: (1) crafts made using *traditional* methods, (2) with local community sourcing of *natural* resources and (3) *simple* basic techniques that require the cooperation of the *collective*.<sup>36)</sup> In terms of collectivity, Japan's *mingei* communities that goes beyond kinship ties and is based on community ties and common consciousness of postmodern values like ecological concerns, artistic traditions and manual labor. For example in the Sarayama's folk pottery community in Brian Moeran's study:

"In Sarayama, the household is the basic unit of cooperation, and each individual is first and foremost a member of a household. The corporate nature of the household may be seen in the way all members of one household will greet, thank, or apologize to all

members of another household for anyone of its members' behavior in relation to any one member of that household.”<sup>37)</sup>

Sarayama appears in Moeran's study as a collective social ecology with a functional purpose in manufacturing folk pottery. Traditional ways of firing require tremendous discipline and teamwork within the community. Potters typically wake up early to start the process of firing chopping up timber pieces and inserting them into the mouth of the kiln for firing. They also spent a large part of the year gathering firewood and timber to prepare their scheduled firing work. Using natural resources also mean that the potters have to be disciplined in not excessively extracting these resources. Excessive extraction may lead to depletion of primary or secondary forests and give rise to problems like soil erosion. Environmental concerns have also motivated communities like Sarayama to use natural fuels. For example, Moeran's study of Sarayama folk pottery community featured timber use and recycling of timber products as fuels:

“Kilns are fired with wood which is brought up to Sarayama from lumber yards in and around the town of Hita. The side mouths of the kiln are fired with two-metre strips of cedar. As this wood is too thick to be of practical use in the firing of the main mouth of the kiln, potters have also arranged to have old demolished houses brought up to the community. Thick beams are sawn up by potters (or by hired labour) into suitable lengths and used in the firing of the main mouth of the climbing kiln.”<sup>38)</sup>

The quotation provides some examples of the sort of preparation work that goes into kiln-firing which requires mobilization of community human resources. The use of traditional fuels continues to be important for the production of folk pottery *mingei* in Japan where both pine and coal continues to be used today. In Japan, red pine (*akamatsu*) is sometimes used. In Moeran's study, division of labor continues to be found in Sarayama where an entire community is mobilized for various forms of preparations needed for the pre-firing stages, e.g. gathering timber, chopping them and stacking firewood for storage.<sup>39)</sup> First, wood need to be cut down by lumberjacks and placed in storage spaces. Then, transportation staff is required to move the logs from the timber storage area to the kilns. Cutters are then employed to saw these logs into suitable lengths for insertion into the kilns before the potters and kiln operators take over to use the wood as fuel for firing. All these processes are self-contained within the community and its proximate associates. Due to the interdependence of all these procedures, every step has to be done carefully and in a sustainable manner to ensure natural resources are conserved for the continued prosperity of the local economy. Besides communitarian, environmental and aesthetic factors, in the case of Japan's *mingei* folk pottery movement, Moeran also raises the element of nostalgia as a rationale for older methods of folk pottery production.<sup>40)</sup> Moeran's study however did not clearly indicate whether the use of natural ingredients represents the community's yearning for nostalgic ways of production as a form of counter-reaction against modernization or if his study simply portrays a peripheral community untouched by urban development.



Photo above (author's own): the author came across a colleague's rice bowl in Hong Kong which is a nostalgic reproduction of bowl designs found in the past from the Kitchen Qing era. It is made with less symmetrical perfection with hand-drawn amorphous design.

While community-based production ecologies can be found in rural or suburban potter communities, densely-populated highly-urbanized contemporary environments such as Hong Kong Island's Central district cannot support the same kind of production environment. With the availability of online technologies, raw materials, including fuels, are now sourced online or through specialist shops and delivered via postal mail or shipping. The community of artists and their suppliers in this way has therefore gone digital, tapping into a global outreach and based on individual needs, rather than self-contained within a single community. These urban potters are also mobile and can travel to pottery communities around the world for firing activities. For example, the fourth generation of Hong Kong contemporary potters revealed to me that their urban electric and gas kilns are unable to achieve certain ash effects found in coal/timber-fired firing. Therefore, they travel to Taiwan or Jingdezhen to use traditional kilns found in those areas to fire their products.



## **Epilogue: is postmodernism related to ceramics production in Hong Kong and will it bring back traditional and individualized methods of production?**

In the case of China, post-modernist impulses are often studied in the empirical example of Hong Kong because of its status as a cosmopolitan city that has enjoyed a long period of postwar economic development as a market economy in an advanced stage of capitalistic development compared with the rest of China as one of the four dragon economies. Arif Dirlik and Xudong Zhang edited an impressive volume that examines China's and Hong Kong's postmodernism. In their introduction, they looked at the relationship between post-socialism and the rise of materialism, consumption and the market economy for China. But, the volume distinguishes between Hong Kong-style consumption/capitalism-based postmodernism and post-socialist Chinese postmodernism. Dirlik and Zhang's edited volume positions Hong Kong as a non-post-socialism component of China. Its postmodernist experience is associated more with consumption above all other ethical concerns. Perhaps, one of the most extreme interpretations comes from Xiaoying Wang:

“To a population that was already predisposed to the activity of profit-making, there was no need for a systematic ethical neutralization of the profit motive to remove moral barriers to legally permissible profit making.”<sup>41)</sup>

The accent in Wang's narrative is the dominant influence of market forces in crafting Hong Kong's society and its values. This statement suggests the predominance of capitalistic instincts in Hong Kong to the exclusion of ethics, morality and other non-profit concerns. Viewed from the left or socialist perspectives, this critique of Hong Kong postmodernism conceptualizes a relentless capitalist economy that has lost a sense of ethics and morality, holding closely to material progress and quantitative improvements based on materialism. From the right end of the political spectrum, capitalist or pro-market perspective, this interpretation is a natural feature of Hong Kong's laissez faire economy whose prosperity depends on continued absence of state interference in its economy. It sees nothing fundamentally wrong in maximizing profit-seeking. Post-modernist ideas in Hong Kong is likely to be located somewhere in between these two ends of the ideological spectrum, often an outcome and compromise of the contestation of ideas in the intellectual, social and policy-making spheres. In the natural course of its capitalistic development, social concerns about income gap, housing availability, environmental preservation and egalitarianism are likely to resist complete non-state interference and non-moralistic profit-seeking impulses. They are likely to become natural limitations to unbridled capitalism. On the other hand, post-modernist attempts to resist capitalism are likely to be countered by a more compassionate, consultative, consensual and participative form of capitalism. Capitalism in Hong Kong and its record of success are likely to evolve new features to co-opt post-modernist impulses and neutralize its more confrontational elements. A more compassionate form of capitalism may include distributing equitable handouts to residents, policy provision of



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Photo above (author's own): these are standardized high quality-finished dinner wares from Koransha. It indicates that contemporary technical skills in producing such standard dinner wares have reached new heights of perfection. Note the smooth and symmetrical lines.



Photo above (author's own): the symmetrical and perfect lines of mass-produced contemporary dinner ware made possible by precise firing served on an airline based on China.



Photo above (author's own): another example of mass-produced contemporary dinner ware with perfectly symmetrical lines made possible by precise firing serving dessert in a well-known establishment in Hong Kong.



Photo above (author's own): a hand-made Japanese sauce dish contrasts against the perfect lines of a white-color "Western"-style mass produced kitchen ware.

But, the production of unique art pieces and folk pottery by the fourth generation of contemporary Hong Kong potters represents the other side of the divide with an accent on individualistic production using unique or natural ingredients and materials and emphasis is placed on unique customized artistic designs rather than standardized mass production. Production is individualistic and depends on informal community-based cooperation rather than a massive industrial superstructure that can quantitatively churn out standardized goods. Pottery production by individual studios represented by the fourth generation of Hong Kong contemporary potters that the author encountered in his fieldwork and their individual craftsmanship are philosophical and methodological counter-reactions to mass production and consumption, by design or by accident. It is also not rationalized like mass production because the focus in such production is not productivity and efficiency but individual expression of art- forms. But my dialogues and interviews with the Hong Kong contemporary potters revealed that they were reluctant to identify themselves as post-

modernist. Some of them opined their artistic creations were not based on ideologies or – isms. My contact with them revealed a community that was connected informally through personal networking and friendships. They did not exhibit any ideological ideas about capitalism, consumption or materialism but rather preferred to update each other on arts-related events, exchange personal articles like furniture pieces or souvenirs from travels overseas and share gossip. Their critique of capitalism is restricted to street talk on cost of living, rentals and making ends meet.

These observations appear to coincide with Wang’s analysis is that it may be possible while Hong Kong may not have a coherent social movement promoting folk art, there are pockets of communities driven and interested in producing and preserving traditional art forms, not necessary ceramics-making but a wide variety of folk arts and traditional desserts. These communities can be found in the districts of Sai Kung, Lamma Island, Stanley market and various other outlying and/or rustic villages and areas found off-the-beaten track in Hong Kong.



Picture above (author’s own): Preservation of folk art: traditional Hong Kong’s handmade folk art: A traditional dessert meant for wedding celebrations with the “double happiness” emblem.

But the question is whether these districts are considered as holdouts from modernity or postmodern communities? They are

likely to be an ambiguous mixture of both societies with residents keen to preserve traditional culture as a counter-reaction against the mainstream mass consumption instincts in Hong Kong's cities and towns while enjoying the fact that infrastructural development had not fully reached some of these peripheral outlying districts. In other words, it is a mix between conscious rejection of consumption culture and modernization on the one hand and remnants of rustic village and rural lifestyles in outlying districts on the other hand. Retaining traditional elements may be based on pragmatic lifestyle choices rather than ideologically-based conscious awareness of post-modernism. The non-ideological nature of the contemporary Hong Kong's potters' responses to the author correlates with Wang's observations as well. At certain points of her chapter, Wang appears to hint at the non-ideological nature of Hong Kong ideas and conceptions of postmodernism and instead noted the highly pragmatic nature of how Hong Kongers think of culture and traditions.

“There is, in Hong Kong, a clear distinction between the public and the private in terms of how people deal with their cultural differences. People are left to pursue their own way of life according to own cultural and ethnic tradition, as long as this does not stand in the way of the activities of the market.”<sup>42)</sup>

The informal nature of networking and establishment of trust based on friendship rather than institutions also finds correlations in Wang's work. In terms of organization of small businesses and cottage industries, Wang argues that, while the small businesses showed a

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tendency to depend on family members and relatives to operate the businesses, it was not based on kinship ties and values but a utilitarian arrangement to employ trustable employees.<sup>43)</sup> Most Hong Kong contemporary potters that the author came into contact with were micro- entrepreneurs. They work on commissioned pieces for commercial outlets like hotels, ran classes for pottery-making students and ran retail outlets. Most of the partners and associates they worked with came from this informal network of friends, relatives and family members. The author will be pursuing ideas found in this epilogue in a follow-up paper.

**Note:**

- 1) The fieldwork respondents for this paper are kept anonymous until the final version of the paper and the study is concluded. The project is grateful to Ms Elim Wong for her assistance as well as Ms X and Ms Y, a Hong Kong- based fourth generation ceramicist. This essay is prepared as a conference paper and cannot be quoted, reproduced or cited without the author's permission. It is work in progress and not a final version. Comments are welcomed and can be emailed to [limtaiwei@cuhk.edu.hk](mailto:limtaiwei@cuhk.edu.hk). The paper is submitted for a conference proceeding and the author reserves the rights to the article for publication in an academic journal. It is an ongoing work in progress.
- 2) Moeran, Brian, *Folk Art Potters of Japan* (Great Britain: Curzon), 1997, p. 140.
- 3) Garnsey, Wanda and Rewi Alley, *China Ancient Kilns and Modern Ceramics: A Guide to the Potteries* (Canberra, Australia Long,



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- 4) Finlay, Robert (Translated by Zheng Mingxuan), *Qinghuaci de gushi* (The Pilgraim Art Cultures of Porcelain in World History, (Taiwan: Owl Publishing, Originally California: University of California Press), 2011, p. 66.
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  - 8) Garnsey, Wanda and Rewi Alley, *China Ancient Kilns and Modern Ceramics: A Guide to the Potteries* (Canberra, Australia Long, England and Miami Fla USA: Australian National University Press), 1983, p. 92.
  - 9) Garnsey, Wanda and Rewi Alley, *China Ancient Kilns and Modern Ceramics: A Guide to the Potteries* (Canberra, Australia Long, England and Miami Fla USA: Australian National University Press), 1983, p. 25.
  - 10) Garnsey, Wanda and Rewi Alley, *China Ancient Kilns and Modern*

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Ceramics: A Guide to the Potteries (Canberra, Australia Long, England and Miami Fla USA: Australian National University Press), 1983, p. 42.

- 11) Yamashita, Eiichi, Vocational Education in the Industrialization of Japan (Tokyo: United Nations University Press), 1987, p. 100.
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- 13) Jahn, Gisela, Meiji Ceramics (Europe: Arnoldsche), 2004, p. 113
- 14) According to Yao Chun's interpretations, such coal-fired kilns were adapted from Northern China' Mantouyao (Bun-shaped kilns). (Source: Yao, Chun (姚春), “探究日本陶瓷窑炉技术 (Investigating Japan's Kiln Techniques)” dated 23 Feb 2011 in 中国陶瓷 第 143 期 (Chinese Ceramics No. 143), available at [http://enewspaper.ju51.com/xbcy/XBTC/data/20110223/html/30/contentpage\\_1\\_0.html](http://enewspaper.ju51.com/xbcy/XBTC/data/20110223/html/30/contentpage_1_0.html))
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- 16) Yamashita, Eiichi, Vocational Education in the Industrialization of Japan (Tokyo: United Nations University Press), 1987, p. 104.
- 17) Garnsey, Wanda and Rewi Alley, China Ancient Kilns and Modern Ceramics: A Guide to the Potteries (Canberra, Australia Long, England and Miami Fla USA: Australian National University Press), 1983, pp. 35-36.
- 18) Garnsey, Wanda and Rewi Alley, China Ancient Kilns and Modern Ceramics: A Guide to the Potteries (Canberra, Australia Long, England and Miami Fla USA: Australian National University Press), 1983, p. 52.
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- 20) Garnsey, Wanda and Rewi Alley, China Ancient Kilns and Modern Ceramics: A Guide to the Potteries (Canberra, Australia Long, England and Miami Fla USA: Australian National University Press), 1983, p. 86.
- 21) The Kyushu Ceramic Museum, Earth and Fire (Japan: The Kyushu Ceramic Museum), 1996, p. 11.
- 22) Yao, Chun (姚春), “探究日本陶瓷窑炉技术 (Investigating Japan’s Kiln Techniques)” dated 23 Feb 2011 in 中国陶瓷 第 143 期 (Chinese Ceramics No. 143), available at [http://enewspaper.ju51.com/xbcy/XBTC/data/20110223/html/30/contentpage\\_1\\_0.html](http://enewspaper.ju51.com/xbcy/XBTC/data/20110223/html/30/contentpage_1_0.html)
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- 24) This point was argued in “Energy Trade and Finance in Asia” coauthored by Justin Dargin and Lim Tai Wei for Pickering and Chatto, unpublished at the point of this writing.
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Press), 1983, p. 123.

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- 29) Gan, Xueli, *Zhongguo waixiaoci (Chinese Porcelain An export to the world)* (Hong Kong: Joint Publishing), 2008, p. 7.
- 30) Commissioner for Heritage's Office and Antiquities and Maintenance Office, "Tai Po Wun Yiu Kiln Site" dated 1 June 2012 in the Heritage Office website [downloaded on 16 Oct 2012], available at <http://www.heritage.gov.hk/taipowunyu/en/background.html>
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- 32) The Kyushu Ceramic Museum, *Earth and Fire* (Japan: The Kyushu Ceramic Museum), 1996, p. 8.
- 33) The Kyushu Ceramic Museum, *Earth and Fire* (Japan: The Kyushu Ceramic Museum), 1996, p. 8.
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- 35) Moeran, Brian, *Folk Art Potters of Japan* (Great Britain: Curzon), 1997, p. 21.
- 36) Moeran, Brian, *Folk Art Potters of Japan* (Great Britain: Curzon), 1997, p. 18.
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- 38) Moeran, Brian, *Folk Art Potters of Japan* (Great Britain: Curzon),

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- 39) For more on this, please refer to: Moeran Brian, *Folk Art Potters of Japan* (Great Britain: Curzon), 1997, pp. 99-122.
- 40) Moeran Brian, *Folk Art Potters of Japan* (Great Britain: Curzon), 1997, p. 15.
- 41) Xiaoying Wang, “Hong Kong, China, and the Question of Postcoloniality” in *Postmodernism and China* edited by Arif Dirlik and Xudong Zhang (Durham: Duke University Press), 2000, p. 94.
- 42) Xiaoying Wang, “Hong Kong, China, and the Question of Postcoloniality” in *Postmodernism and China* edited by Arif Dirlik and Xudong Zhang (Durham: Duke University Press), 2000, p.101.
- 43) Xiaoying Wang, “Hong Kong, China, and the Question of Postcoloniality” in *Postmodernism and China* edited by Arif Dirlik and Xudong Zhang (Durham: Duke University Press), 2000, p. 99.

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