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Abstract	The aestheticisation of the city is one of the main concerns of a global city that attempts to attract tourists from all over the world. In the case of Tokyo, power poles is one alleged concern spoiling the beauty of the cityscape. Japanese cities can be described, literally, as 'wired cities', since there are myriad electric cables running overhead and countless poles lining the streets and lanes. However, in retrospect, power poles have had a historical role as an important mediating infrastructure in Japanese cities, having supported the rapid spread of new technologies, such as telephone, electricity, cable radio, cable TV, and optical fibre Internet. A distinctive characteristic of power poles in Japan can be pointed out as the 'perpetuation of the temporal'. They are temporal because, in terms of city planning, power poles were understood since the beginning of the Meiji era (1868–1912) as temporary ways to set up telegraph and electricity networks as rapidly as possible. They are perpetuated because strong poles made of concrete replaced the feeble wooden poles after WWII, aiming for long-term endurance. In this paper, the historical relationships between power poles and the cityscape in Japan are investigated in order to propose a new way to understand the multiple dimensions of the urban aesthetics.
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Perpetuating the Temporal: Power Poles and the Urban Space in Japan

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The aestheticisation of the city is one of the main concerns of a global city that attempts to attract tourists from all over the world. In the case of Tokyo, power poles is one alleged concern spoiling the beauty of the cityscape. Japanese cities can be described, literally, as 'wired cities', since there are myriad electric cables running overhead and countless poles lining the streets and lanes. However, in retrospect, power poles have had a historical role as an important mediating infrastructure in Japanese cities, having supported the rapid spread of new technologies, such as telephone, electricity, cable radio, cable TV, and optical fibre Internet. A distinctive characteristic of power poles in Japan can be pointed out as the 'perpetuation of the temporal'. They are temporal because, in terms of city planning, power poles were understood since the beginning of the Meiji era (1868–1912) as temporary ways to set up telegraph and electricity networks as rapidly as possible. They are perpetuated because strong poles made of concrete replaced the feeble wooden poles after WWII, aiming for long-term endurance. In this paper, the historical relationships between power poles and the cityscape in Japan are investigated in order to propose a new way to understand the multiple dimensions of the urban aesthetics.
Key words : infrastructure, technology, cityscape, power pole, urban aesthetics

Introduction

Aestheticisation is one of the main concerns of a global city as it tries to attract tourists from all over the world, especially when the city prepares to host the Olympic games in the near future. In the case of Tokyo, power poles are alleged concerns that spoil the beauty of the cityscape. Recently, there has been a movement aimed at eliminating these poles and burying the power lines in the main areas of Tokyo, epitomised in the Act for Boosts to the Disappearance of Utility Poles established in 2016 (Koike & Matsubara, 2015).

In retrospect, however, power poles have had a historical role as important mediating infrastructures

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in Japanese cities, having supported the rapid spread of new technologies, such as telephone, electricity, cable radio, cable TV, and optical fibre Internet. A distinctive characteristic of power poles in Japan can be described as the 'perpetuation of the temporal.' They are temporal because, in terms of city planning, power poles were understood since the beginning of the Meiji era (1868–1912) as temporary ways of setting up telegraph and electricity networks as rapidly as possible. They are perpetuated because strong poles made of concrete replaced the feeble wooden poles after WWII, aiming for long-term endurance.

In this paper, the historical relationships between power poles and the cityscape in Japan will be investigated in order to propose a new way to understand the multiple dimensions of the urban aesthetics[1)].

'Seen but Unnoticed'

The term 'wired' is usually used to describe a situation in which things are connected to each other to form networks. Japanese cities can be described, literally, as 'wired cities', since there are myriad electric cables running overhead and countless poles lining the streets and lanes. It is estimated that there are currently about 35 million power poles in Japan. In Japan, the rate at which underground electric cables are installed is significantly lower as compared to other advanced countries, being only 7% in the 23 wards of Tokyo and 5% in Osaka City, whereas it is almost 100% in major European or Asian cities such as London, Paris, Singapore, and Hong Kong. Although the pipes for gas, water, and other utilities are embedded underground, electrical and telephone cables are simply suspended in the air using poles in Japanese cities.

The basic idea of the ontology of infrastructure is that its presence is hidden and unnoticed when it works well, while its presence stands out and is noticeable when something goes wrong (Graham & Thrift, 2007; Amin, 2014). To refer to the figure-ground dichotomy, infrastructure consists of the ground on which various types of activities are carried out as figures. Although infrastructure is meant to be hidden and to support everyday activities, electric cables and poles are simply exposed in Japanese cities. Instead of being hidden, covered, and buried, they are exposed, bare, and naked. However, for most Japanese urban residents, cables and poles are taken for granted and seen as unproblematic. People realise the presence of power lines and poles when, for example, they try to take a picture of a building, only to find the lines and poles in their way. The wires and poles are 'seen but unnoticed,' a concept that is popular in ethnomethodology.

The opportunity to host the Olympic Games in 2020 has provided a great impetus to carry out a full-scale movement to eliminate the poles in Tokyo. Given that the cables and poles are 'seen but unnoticed', the first move for the advocates of elimination was to problematise the presence of lines and poles to make it 'seen and noticeable' to the public. This was cleverly carried out with a project where an illustration was presented, originally from the *ukiyoe* series by Hokusai, that depicted a beautiful landscape featuring Mt. Fuji, but with the addition of a silhouette of power cables and poles (Figure 1). It was obvious that the picture was intended to make people realise how lines and poles could spoil a

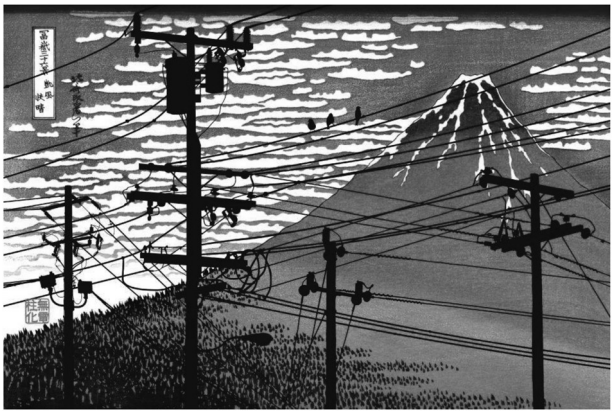

Figure 1. Hokusai's *ukiyoe* with a silhouette of power cables and poles from the Facebook page of the *mudenchuka* [elimination of power poles] project (https://www.facebook.com/mudenchuka)

beautiful landscape. However, the illustration evoked mixed reactions. Some people reacted on social media by saying that the picture was actually 'cool'. Here, we can see the multiple dimensions in the aesthetics of urbanscape.

It seems that the movement's naïve understanding of urban aesthetics is based on an assumption that by removing all the poles, along with the tangled cables, one can recover the authentic beauty of the Japanese cities underneath them. What is missing in this assumption is the recognition of the historical role that power poles have played in modern Japanese cities.

The Foreign Object

The first telegraph system in Japan was introduced as an experiment in 1869. Within a few years, telegraph networks were constructed all over the country; the main line that covered the important areas of Japan was completed in 1879. It has been noted that the speed of construction of the telegraph network was remarkably fast given the level of engineering in the early Meiji era. One of the reasons for this was that the telegraph had the nature of policing and military technology, rather than a neutral technology of communication. It was introduced by the central government as an apparatus to govern the regional areas that might cause rebellious activities (Yoshimi, 1995; Matsuda, 2001).

In the early years, the telegraph wires and poles were perceived as foreign objects by those who were unfamiliar with Western technology[2)]. On the one hand, people were awestruck and fearful of the telegraph system, which had the ability to send messages instantly; they saw the cables and poles as magical and ominous, something alien to them. On the other hand, as the telegraph evoked antipathy because of its political nature, they often became a target of vandalism. The electric cables were likewise thought of as dangerous objects, since they were not shielded in those days and occasionally caused accidents involving electric shock and even electrocution (Nihon Densen Kogyo-kai ed, 1959).

Although the cables and poles were perceived as foreign and dangerous in the beginning, over the course of time, they became a part of the urban landscape, naturalised in people's perception, and came

to be taken for granted as 'seen but unnoticed.'

Perpetuating the Temporal

It is crucial to note that right from the early stage of the introduction of telegraph, the cables were meant to be buried underground; the aerial installation was supposed to be a temporary measure. In fact, the Committee for the City Planning of Tokyo, which was in charge of transforming the traditional urban structure of Edo into the modern city of Tokyo, was strongly interested in embedding the cables underground in order to ensure traffic safety, as well as maintain urban aesthetics. However, in order to meet the demand for a rapidly developing telegraph system, they were left with no choice but to aerially install the wires and wooden poles, as it was much easier, cheaper, and faster than underground instalment (Marushige, 1996).

Although introduced as a temporary measure, a path dependency was formed once the overhead cable networks were constructed. Path dependency refers to an irreversible process in which a technology or system is locked in because of historical circumstances, an example of which is the 'QWERTY' keyboard arrangement. The subsequent constructions of telegraph and electric networks by the government or the electrical companies were carried out based on the existing system. The option of underground instalment was always avoided in terms of economic cost (Teishin Sho, 1941). Consequently, the system of aerial cables, which was supposed to be a temporary solution, was established as a permanent infrastructure.

The distinctive feature of power poles in Japan can be described as 'the perpetuation of the temporal', which is embodied in the poles made of concrete that were installed after WWII. In English, power poles are also called 'utility poles' or 'temporary poles,' underlining the fact that these poles are meant to be impermanent. Whereas it is common in Western countries to use wood to construct power poles, concrete poles were introduced in Japan to replace the existing wooden poles in order to make them long-lasting. In those days, wooden power poles were seen as shabby, feeble, and outmoded, while concrete poles were thought to be efficient, solid, and modern (Okoshi, 1993).

Versatility of the Poles

The temporality of electric poles is linked to the flexibility in their use. The versatility of power poles has been fully enjoyed by urban residents in Japan. Indeed, the 'utility' poles have proved to be very useful.

Power poles have served as an important infrastructure of media technologies in Japanese cities, making possible the rapid spread of new technologies such as telephones, electricity, cable radio, cable TV, and optical fibre internet. It is much easier, faster, and cheaper to introduce new informational technologies with the existing overhead cable network, rather than by installing them underground.

Power poles have also been used as a local advertising medium. Pole advertisement is an established business in Japan. Advertising companies enter into exclusive contracts with the proprietors (usually utility companies) of the poles, invite sponsors to advertise, and post advertisements on the poles using a

standardised format. The first advertising company to use pole advertisements seems to have appeared as early as 1901. Since then, colourful advertisements on power poles in the streets have become part of the Japanese urbanscape (Toden Koukoku Kabushiki Gaisha ed., 2006). Here, a contradiction can be pointed out in the roles of power poles as a means of both advertisement and infrastructure: while the former serves to make the poles conspicuous, the latter seeks to make them inconspicuous.

Apart from commercial advertisements, people have used the power poles to put up all types of posters, leaflets, and notices: from an innocent 'lost dog' poster in a child's handwriting to the dubious advertisements of bargain-priced real estate, moneylending, and adult entertainment businesses. Technically speaking, putting a poster up on a pole without permission is illegal, but it has been practiced and taken for granted for a long time. Power poles are seen as accessible to everyone, as if they were the common property of the community. This is another aspect of the flexibility of power poles, which creates a familiarity for urban residents towards the poles.

Aesthetics of the Poles

Although monotonous poles and tangled cables are usually seen as negative in terms of urban beauty, some people consider the power poles to be capable of evoking a positive aesthetic response. For example, a distinct aesthetic value that is attached to the power poles can be found in recent comics and animation in Japan.

One type of love for power poles manifests in its fetishism. Just as there are people who love the artificial beauty of huge industrial factories, there are people who adore power poles with tangled cables and gawky transformers as a type of fetishism. Hideaki Anno, a famous animator, is one good example. Having a strong affinity towards artefacts such as monotonous buildings, large transmission towers, and tangled lines, he often inserts impressive scenes with electric cables and poles in his animation works (Figure 2).

Figure 2. *Evangelion:2.22 you can (not) advance* ©khara

Another type of love for power poles manifests as nostalgia. There is a genre of animation called the

Figure 3. *5 Centimeters Per Second* ©Makoto Shinkai/CoMix Wave Films

slice-of-life anime (*nichijo-kei* anime), which depicts the everyday life of young girls and boys, where the images of power poles are used to evoke a feeling of nostalgia. The scenes with sunsets, power poles, and the sound of evening cicadas are clichés associated with nostalgic sentiment (Figure 3).

Conclusion

Considering the techno-social and cultural history of power poles and cables, it becomes clear that the problem of getting rid of them is not simply a technological problem because they are entangled in the rich history of collective practice, use, and appropriation by urban residents. In other words, it is not that easy to accuse the power poles of disturbing the urban aesthetics in the context of Japanese cities. Moreover, the aesthetics of a city consists of multiple layers that have to be taken into account when one wants to problematise the existence of poles and cables.

As was pointed out in the beginning, it is naïve to assume that by removing all the poles and cables, one can recover the true beauty of Japanese cities. Given that the poles and cables themselves constitute a lived infrastructure that is inseparable from the existing urban environment, ripping off the poles and cables could result in ripping off the urban fabric altogether, as the 'perpetuation of the temporal' is the very character of the urban fabric of Japanese cities.

Notes

1) This paper is based on Chikamori (2017) with editions and added materials.
2) The mixed reception of power lines in the context of U.S. is detailed in Wuebben (2019).

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