MOBILITY IN THE CITY:
Dalian’s Streetcar System from 1890s to 1940s

by

Charles Kwun Sau Chiu

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Abstract

The electric streetcar is both a product of electric modernity and a form of social technology that shapes the experience of modernity. Using the city of Dalian in northern China from 1890s to 1940s as the site of investigation, this study seeks to provide a deeper understanding of the formation of modern urban landscapes in terms of the movement and division of people engendered by the streetcar in general, and the system’s role in Japan’s colonial project in East Asia in particular. I seek to provide a detailed analysis of the historical roots of the formation of Dalian as a colonial city vis-à-vis its streetcar system to examine the structuring of urban space. I also explore the streetcar both as an engineering and social technology to shed light on theoretical issues such as the notion of mobility and rhythms of everyday life.
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Introduction

In the exploding American city it was not public planning but mass transportation – a creation of the marketplace – that unified urban space. Indeed, without mass-transportation, ever-spreading Chicago, with this sharpening divisions of work, residence, and shopping and its growing class and ethnic segregation, would not have been a real city at all…¹

The electric streetcar has been a constituting feature of many urban centers around the world since the second half of the 19th century, lasting well into the postwar years until the automobile boom of the 1950s. From London to Hong Kong, Vienna to New York, streetcar systems served, and in some cases, are still serving as an important form of public transportation. As an infrastructure that is embedded in the landscapes of cities, the streetcar is both a product and a reflection of the larger urban political and planning history. The opening quote, taken from Donald Miller’s 2003 book *City of the Century: The Epic of Chicago and the Making of America*, provides us with a useful tangent to examine streetcar systems and their roles in urban development.² The relationship between the streetcar and urban space is dialectical: not only is the former a product born out of the need of modern cities, it also serves to unify and give form to ever-sprawling, variegated urban landscapes of the modern era. The streetcar is both a product of electric modernity and a form of social technology that shapes the experience of modernity: the invention of the streetcar could only be conceived and materialized by building on previous technological achievements such as power generation, transmissions, and the mechanical know-how of building related systems

² Ibid.
and components. The technology is essentially a social one: the streetcar transformed people’s relationship with one another and the environment in terms of their mobility in the city, and the spatial connection between work, leisure, and domestic lives. I am interested in the following questions: What is the relationship between the spatial development of cities and the construction of streetcar systems? Does the layout of streetcar lines follow the historical fabric of the city, or contribute to the creation of new urban forms? What about the relationship between everyday urban life and the technology of the streetcar as a transportation infrastructure? Using the city of Dalian in northern China as the site of investigation, this study seeks to provide a deeper understanding of the formation of modern urban landscapes in terms of the movement and division of people engendered by the streetcar in general, and the system’s role in Japan’s colonial project in East Asia in particular.

I am interested in the affective and experiential dimensions of the streetcar as a terrain of inquiry, as opposed to the technocratic, data-driven approaches that prevail in transportation research. My personal fascination with the streetcar started as a child growing up in Hong Kong. Commonly known as the “tram” (as the British calls it) or colloquially the “ding ding” (the sound made by the bell on each tram to inform other road users of its presence), the system in Hong Kong was built by the British colonial government in 1904, and has remained largely unchanged save for a few updates to the body style. The tram is relatively slow compared to other forms of public transportation such as the bus and the subway, but it is much more affordable. Being slow and above-ground (one can even occupy the upper level of the double-deck tram cars), the tram provides an unique and rather leisurely way of moving about and experiencing the bustling city. I have fond memories of
reading books by the window seat on the upper deck of tramcars on sunny summer days, all while enjoying the subtle humming sound of the electric motor and the rocking rhythm as the tram passed though the gap between each section of the tracks. The short distance between each stop makes the tram ideal for short trips within the city. As I grew older, I learned that the tram line follows what used to be the major waterfront road on Hong Kong Island – the harbour was no longer visible from the tram due to many phases of land reclamation over the years to increase the amount of land available for construction. To my fascination, I discovered that the tram route I had been taking to school on most days is a historical marker of the spatial evolution of the city – a lesson in urban history early in life.

Scholars of urban history and transportation studies have been writing on the relationship between streetcars, urban spaces, and modernity for decades. The most famous work is arguably Sam Bass Warners’s book *Streetcar Suburbs*, which details the urban development of Boston vis-à-vis its streetcar system from 1870 to 1900. Others have written on the emergence of modern urban space in the late 19th century, together with the rise of a new bourgeois urban culture – new genres in literature, cafés, cinema, consumption, etc.— to which the streetcar is a central part. The streetcar has also been a site of contested modernity, where technological advancements in transit systems brought about tension and struggles in social class, race, and labor. There is also a significant body of urban planning

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literature that deals with the relationship between streetcars and cities in a more quantitative fashion, often incorporating data analysis. Another common form of publication on the subject of the streetcar is the historical and pictorial accounts of systems that once operated in many North American cities large and small. These works are testimonials of a bygone time and age when streetcars were the most ubiquitous mode of transportation in urban areas.

For the purpose this project, I research the primary literature written during time when Dalian’s streetcar was being planning and operated, from the late 1800s until the defeat of the Japanese Empire in 1945. These sources consist mostly of writings by Japanese authors (since Dalian was under Japanese rule), in both Japanese and English languages, that aimed to glorify the achievement of the Empire as part of the colonial propaganda machine. I also came across American transportation journal articles that documented the technical aspects of Dalian’s streetcar system. Chinese publications from the same period on the subject are scarce, save for some newspaper reports stored in Dalian’s archives which I have no access to remotely. Another major area of work I reference to is the modern scholarly discussions of urban history in China’s Northeast during colonial rule. There are a number of “nostalgic”


Chinese language newspapers published during the Japanese-occupied Dalian are housed in the Dalian Municipal Archives, Dalian Library, and Library of the Dalian University of Technology. However, they are not available for remote access.
publications accounting for Japan’s presence in China’s Northern Provinces, often written by Japanese authors as memoirs or travel guides for modern visitors to the area. Publications from the People’s Republic of China proved useful learning about the historical development of Dalian, if not often laden with an anti-Japanese colonialism tone. A number of contemporary scholars have written on the relationship between streetcars and the political economy of urban spaces. I draw on their inspirations and methods of analysis in this project.

While much of the existing literature deals with the overall design and technical aspects of Dalian’s Streetcar system, I attempt to focus more on the everyday experience by detailing the accounts of routes, neighborhoods and riders’ perception of the system. One inevitably faces a question when it comes to writing descriptive urban history: how can “narratives” be formulated to effectively account for the variegated experiences of city dwellers and streetcar riders, who lived in an unevenly developed urban spaces served by the streetcar system? Are narratives relevant at all? Contemporary urban historians and geographers have turned to the work and inspiration of Walter Benjamin. Writing on the convergence of capital and modernity in 19th century Paris, Benjamin sought to understand modern urban culture through the use of phantasmagoria as an allegory, and saw the force of the image –

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8 Literature published in the PRC on this subject generally refers to Manchukuo as a puppet regime, stylized as “fake-Manchukuo” (偽滿洲國).

visual, the optical, the ‘spectacular’ as a central and constitutive force of modernity.  

Benjamin was convinced that the replacement of the linear logic with the imagistically constructed principles of the montage to counter the illusion of progress in historiography. The works of Susan Buck-Morss and Allan Pred engage with Benjamin’s montage principles. Instead of linear narratives, their works of literary montage attempt “to show” instead of “to say”. I keep their innovative approach to urban historiography in mind in my writing to try to “recover”, in the Benjaminian sense, the experience of riding streetcars in Dalian. I also seek to account for the technical aspects of the streetcar vis-à-vis colonial technologies on urban planning. In doing so, I engage with the theoretical aspects of Dalian’s streetcar system in terms of colonial ideologies and the everyday reality of urban life in colonial Dalian.

In this study, I use the word “streetcar” to refer to the electric streetcar that takes on the basic form as invented by American engineer F.J. Sprague in 1887. Other names such as “tram” and “trolley” are being used in different parts of the world to refer to the same type of transportation technology. Sprague’s design, which utilized an overhead electrical wire system for power transmission, won him a highly successful contract in Richmond, Virginia. This layout eventually became the gold standard of streetcar systems throughout the world. Before the introduction of electric streetcars, a vehicle category known as the “horsecar” – a

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12 Pred, Recognizing European Modernities, 11.
trolley running on steel rails and drawn by horses – was a popular choice for fulfilling the demand for public transportation in the growing urban centers worldwide. The horsecar had some major problems for operating in increasingly busy and dense modern cities: the feeding, grooming, and tending of the horses were labor intensive; the animals could only work several hours a day, and they can be unreliable sometimes; the littering of manure on city streets was both unsightly and unhygienic. When the maturation of the electric streetcar technology came into being in the late 19th century, it quickly replaced its horse-drawn counterpart and gained popularity globally.

The operation of the streetcar requires a support network of municipal infrastructures that ensures the reliable distribution of electrical power along the extent of the lines. Such technology was closely related to other modern urban provisions such as electrical lighting and domestic power supply. Streetcar design before Sprague went through a period of trial-and-error experimentation. One of the major engineering challenges was finding a way to safely and efficiently transmit electrical power from generator stations to individual streetcars. The earlier design of the “third rail” – a conductive metal rail embedded in the ground that ran between the two parallel tracks – proved problematic during rainy days and hazardous for people and animals who may step on it by accident. Sprague’s design of the overhead wire system for Richmond, Virginia was so successful that within a year, 200 streetcar systems were either operating or being built throughout the United States. Sprague’s success unleashed what transportation scholar Charles Klapper called “The Golden

Age of Tramway."\textsuperscript{14} Subsequent streetcar designs remained largely the same as Sprague’s at their technical core, although an array of different body styles can be found. Most notably, the English tram, such as the ones I rode in Hong Kong as a child, usually features a double-deck body. Articulated streetcars are popular in many cities in continental Europe. The multi-segmented and longer streetcar bodies could carry more passengers, while capable of maneuvering through densely built up urban spaces.

When introducing street systems to established urban areas, city planners faced the questions of where and how the routes and supporting equipment were to be installed in relation to the layout of the city. For historical urban centers, the lack of space and increasing population density became major challenges. Moreover, many considered the streetcar intrusive since it altered the existing urban landscape. As Aldo Rossi pointed out, the city is “a gigantic man-made object, a work of engineering and architecture that is large and complex and growing over time… a complicated entity which has developed in both space and time.”\textsuperscript{15} The addition of the streetcar systems certainly contributed another level of complexity of cities. The embedded tracks, overhead wires, and other equipment would become new fixtures of the urban space, adding new characteristics to the urban landscapes.

In many instances, the layout of the streetcar routes followed the existing road patterns of cities. For example, the first streetcar lines in Vienna “circle round the Ringstrasses and the outgoing routes branch off like the spokes of a wheel.”\textsuperscript{16} Being the most important and

\textsuperscript{14} Ibid.
famous street in Vienna, the *Ringstrasses* was created by the demolition of the medieval city wall during the 19th century. The streetcar lines trace the historical footprint of the city. The Chinese city of Tianjin took a similar approach when its streetcar started operation in 1906. The city’s first streetcar line traced the footprint of the recently demolished city wall as a result of international coalition forces occupation. The streetcar system thus circled around the old core of the city. In North America, where many cities are dominated by the grid, streetcar systems tend to follow the rectilinear pattern. For example, streetcars in Toronto, Canada – one of the last surviving examples of original streetcar systems in North America – continue to serve on the city’s urban grid. In Buffalo, NY, streetcar lines were superimposed on the major streets that are arranged in a mixture of radial and grid pattern. These streetcar systems acknowledged and reinforced the existing traffic patterns of the cities, and as Miller pointed out in the quote at the beginning of this chapter, unified urban space.

But the streetcar also opened up new possibilities for urban planning, spatial imagination, as well as novel modes of mobility both conceptualized and practiced. It created changes beyond the existing layout of old cities. The streetcar became a powerful catalyst that propelled the outward growth of urban centers. A good example is the development of the streetcar and the suburbanization of Boston in the early 1900s, the subject of Sam Bass Warner’s classic work *The Streetcar Suburb*. The electric streetcar greatly shortened the travel time between the center and the periphery of cities, thus making it possible for workers

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18 Miller, *City of the Century*, 294.
19 Warner, *Streetcar Suburbs*. 
— at least those who can afford the fare — to live in the newly developed, suburban, residential areas, where real estate developments soared. As such, the streetcar helped facilitate the decentralization of the historical city of Boston, where increasing industrialization and overcrowding of workers had produced declining living conditions.

The historical context surrounding the development of Dalian’s streetcar system was quite different from that of Boston, or other established urban centers around the world. Being a young, master-planned city, Dalian provides a singular case for studying the relationship between urban space and the streetcar. Located in an area historically known as Manchuria and now part of the People’s Republic of China, Dalian has been successively occupied and controlled by the Chinese Empire, Tsarist Russia, the Imperial Japanese Government, and the PRC. Valued for its strategic location of being at the tip of the Liaodong Peninsula with direct access to the Yellow Sea, the Qing Government started a fortified settlement in Dalian during the 17th century. In 1878, Dalian was chosen as the site for the primary base of the newly establish *Beiyang* (“North Ocean”) *Fleet*, one of China’s four modern naval forces. The geopolitical superiority of Dalian for commerce and defence drew the attention of Tsarist Russia, whose newly constructed far-eastern port of Vladivostok could not operate year-round like Dalian because its harbor freezes in the winter. In the aftermath of the Russo-Japanese War, the Russian Navy entered and gained control of Dalian in 1897. Under pressure, the Chinese government agreed to lease Dalian to Russia for the next 25 years.

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Ambitious Russian planners and engineers were determined to turn Dalian into a modern and sophisticated metropolis from scratch. Drawing on the most advanced urban planning theories and technologies developed in Europe at the time, the city’s design was strongly influenced by Ebenezer Howard’s Garden City Movement and Baron Haussmann’s remaking of Paris. Dalian was to be served with modern civic amenities such as electrical power, water supply, and an electric streetcar system to provide public transportation. Although never materialized during the Russia-controlled period, Dalian’s streetcar system was an integral part of the city’s original masterplan drawn up by Russian planners. In other words, rather than being an addition conceived to be inserted into an existing urban environment, streetcars were part of the considerations of the city’s first modern plan. After Russia’s defeat in the Russo-Japanese War of 1904-5, the partly constructed city was taken over by the Imperial Japanese government through its colonial administrative organization, the South Manchurian Railway Company (SMRC). The Japanese government continued to build and expand upon the city’s masterplan left behind by Russia. Dalian’s streetcar system started operation in 1909, and would eventually grow into an elaborate system with 11 lines in total. Many neighborhoods were concurrently planned with the expansion of the streetcar system.

In this thesis, I discuss the history of Dalian’s streetcar system and its significance in urban space-making. Chapter 1, The City and its Streetcar System, provides a detailed analysis of the historical roots of the spatial formation of Dalian and a close study of its streetcar system in relation to the city’s urban landscapes. I draw upon maps and accounts of urban life in Japan-controlled Dalian to examine the colonial institutions and structuring of urban spaces vis-à-vis the streetcar system. Chapter 2, The Twofold Technologies of the
Streetcar, explores the streetcar both as an engineering and a social technology, before returning to the particularities of Dalian’s streetcar system. The analysis seeks to shed light on the theoretical issues surrounding the streetcar, such as the notions of mobility and rhythms of everyday life, as well as their places in the larger colonial project of the Japanese Empire. I conclude by raising questions that have emerged during this project and outline possible directions for future research.
Being a metropolis planned and built from scratch by Tsarist Russia, Dalian’s streetcar system was an integral part of the city’s master planning from the early days. This is different from streetcars in other many urban centers where the city’s form had already been established. Although the streetcar system never materialized before Dalian was taken over by Japan in 1905, the subsequent construction of the city and the eventual operation of the streetcar in 1909 were largely based on the original Russian plan. As the city continued to grow in size and complexity under Japanese control, streetcars played a central role in the creation of new urban spaces, be they residential, recreational, institutional, or industrial. Dalian’s streetcar system served not only to connect neighborhoods and unify the city, but also reinforced the vision of zoning, circulation, and division by the Japanese city builders. The extensive network of Dalian’s streetcar system put the city in the cutting edge of public transportation among its peers around the world of its time. What was at the intersection between the streetcar system and the political economy of the city? Did the extensive of streetcar network translate into free movement for all, thus creating more social-spatial equality among Dalian’s residents? Did it eliminate the gap in wealth and living conditions in the different parts of the city? To understand the role of the streetcar in shaping Dalian, we must turn to the study of the historical formation of the urban space.

Dalian’s masterplan was largely a result of the transfer of knowledge and technology of contemporary urban planning theories and knowledge from continental Europe. When Tsarist Russia acquired control of Dalian in 1898, the city was set out to be built as a modern and international trading port in the far eastern part of the Empire, to be connected with the new Trans-Siberian Railway all the way to Moscow some 5,700 miles away. Rather than drawing on
the vernacular architectural tradition of the Liaodong Peninsula, or that of the great imperial cities such as St. Petersburg, Russian designers turned to modern Paris for inspiration in urban planning. Between 1853 and 1870, Paris was under a major urban renewal project, led by Baron Haussmann during the reign of Napoleon III. Although later being criticized for bringing massive destruction to the communities and neighborhoods of the city, Haussmann’s renewal of Paris was nevertheless the most celebrated large scale urban planning project of the day. It was a megaproject of the 19th century, the scale of which far exceeded any preceding projects of the same kind. For Dalian, then named “Dalny” (meaning “faraway”) by the Russian, which consisted of several small fishing villages and limited port facilities at that time the Russian arrived, demolition of existing structures and neighborhoods wasn’t so much an issue as in Haussmann’s Paris. The challenge for Dalian, on the other hand, was to come up with a masterplan that was modern, big, and could be constructed quickly to consolidate the Russian Empire’s power in the new Far Eastern port city.

Vasily V. Sakharov, design engineer of the commercial port of Vladivostok, was appointed by the China Eastern Railway (CER) – the official organization responsible for developing the rail connection and new town planning projects in the Russian Far East, to lead the project of designing and building Dalian.\textsuperscript{21} After the masterplan was approved by the Tsarist administration in September, 1899, the first phase of the port facilities were completed in 1902, while the construction of the basic layout of the city center was largely complete by 1903.\textsuperscript{22} A New York Times article published in 1902 praised the efficiency with which the city was planned

\textsuperscript{21} David Wolff, \textit{To the Harbin Station: The Liberal Alternative in Russian Manchuria, 1898-1914} (Stanford, California: Stanford University Press, 1999), 63.

\textsuperscript{22} Wei Dong, “Dalian Chengshi Guihua Shi Yanjiu / 大连城市规划史研究” (Master’s Thesis, Dalian University of Technology, 2001), 15–21.
and constructed, calling it “The City that was Made to Order.”\textsuperscript{23} Much of Sakharov’s plan drew on the language of Haussmann’s Paris, with multiple centers connected by grand boulevards (see fig. 1).\textsuperscript{24} More specifically, the form of a monumental circular plaza that denoted the center of the city, with wide boulevards radiating in all directions, was a reference to Place de l’Etoile in Paris.\textsuperscript{25} Place l’Etoile, now known as Place Charles de Gaulle, is characterized by a circular plaza with 12 boulevards arranged in a radial pattern. One of the best known landmarks of modern urban planning, the center of the plaza is the location of the Arc de Triomphe – the symbolic center of the city. A similar design strategy was implemented in Dalian’s plan, in which a grand plaza provides a central anchor to the unfolding urban fabric around.

\textsuperscript{25} Emer O’Dwyer, \textit{Significant Soil: Settler Colonialism and Japan’s Urban Empire in Manchuria}, Harvard East Asian Monographs 377 (Cambridge, Massachusetts: Harvard University Asia Center, 2015), 29.
The Garden City Movement of the late 19th century also bore its imprint on Dalian’s urban layout, particularly the presence of multiple and separated “nodes” within the city. In a map of Dalian from the same *New York Times* article in 1902 (see fig. 2), the central plaza in the “European Zone” was linked to multiple “nodes” – smaller circular plazas with streets connected in a radial pattern. Further west was a “Chinese City” – a geographically separated entity only connected to the “European Zone” of the city via a few boulevards through a large

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26 “The City That Was Made to Order.”
span of green space. Both Garden City and Haussmann’s Paris sought to bring order to the urban environment by means of zoning and division. The multi-center model of the Garden City isolates industrial, residential, commercial and recreational spaces in the city into distinct zones. For the purpose of alleviating the harms of pollution and overcrowding of rapidly growing industrial cities, parklands were used to separate the various functional areas, which are connected to each other via parkways. Haussmann’s plan replaced dense historical neighborhoods, which consist of many interconnected small streets and alleyways, with monumental boulevards that provide wide open spaces for uninterrupted circulation of traffic. The boulevards are so wide that, while aimed at connected different parts of the city, had the effect of dividing and eliminating the connectedness of local neighborhoods. Douglas pointed out that Haussmann’s urban restructuring project was “an explicit response to the threat of barricades” during the years of the Paris Commune. The boulevard promotes circulation, at the same time implements interruption to the urban space by making the effective placement of barricades difficult or impossible. In other words, Haussmann’s plan served to spatially consolidate the asymmetrical power relationship between the ruler and the ruled, between the elite and the masses.

The overall design of Russian Dalian, with its clearly demarcated parklands and hierarchy of boulevards and roads, emphasized largely on the principles of separating functional zones and ethnic segregation in the residential areas. As reported by The New York Times in 1902:

27 Ibid.
One sees by it that each section has been planned to serve a special purpose. Everything has been segregated... Still further east are the private residences for Europeans. To the Northwest is the Administration Town, which contains the railroad shops for making cars, railway repair shops... and railway headquarters and offices, residences of mechanics and general employees, and a Russian church. Some distance away, to the southwest of the commercial quarters, is the Chinese native city, and, it is worthy of notice, that the Market Hall has been placed about midway between the European and Chinese cities, so as to be easily accessible from both.²⁹

The power relationship between the Russian colonizer and the colonized Chinese, who were mostly migrant laborers from nearby Shandong province, was well articulated by the spatial characteristics of each zone as a result of segregation policies. From the above map dated 1902, it is obvious that the “Chinese City” is much smaller than the “European Zone” and the “Administrative Zone”. The unbuilt area separating the former and the latter two was a large park containing a zoo.³⁰ In the Russian plan, the park served the purpose of a buffer zone between the Chinese and the European population, with minimal amenities other than a zoo for keeping tigers.³¹ It was not until the Japanese era that extensive recreational facilities were constructed on the same site. The “Chinese City” was connected to the other parts of the city via three roads on its eastern perimeter. One of the roads led directly to “Nicholas Plaza”, the name given to the monumental plaza at the center of the “European Zone”. At 213 meters in diameter, “Nicholas Plaza” served as the geographic and symbolic center of the new city.³² The plaza was surrounded by important buildings housing such institutions as banks, city council, police headquarter, and so on. The “Chinese City”, however, lacked any visible amenities and civic

²⁹ “The City That Was Made to Order.”
buildings as depicted on the map. Under Russian rule, the freedom of movement of the Chinese population was tightly controlled – they were not allowed to enter the “European Zone”. The streetcar system, while planned, was never completed during the Russian-ruled period. The various zones within the city remained separated without being connected by public transportations.

When Japan took over the city in 1905, the plan was to retain and expand upon the basic urban layout, which was modern and centrally planned, designed and constructed by the Russian less than a decade ago. The construction of the streetcar also went underway, and the system started operation in 1909 (see fig. 3). The first streetcar line ran roughly east-west across the city, starting at the wharf north of the city center. The line then ran south-westward, passing through the central plaza, renamed the Grand Plaza (Oohiroba/大広場) by the Japanese, and ends at the Electric Amusement Park, located on the western edge of what was the “European Zone” designated during Russian rule. The routing of the first line gave us a glimpse of the vision of the SMRC for transportation in Dalian. The most important institutions and areas were being connected at the beginning of the streetcar era: wharf for trade and transportation of people and goods, city center for business and administration, and amusement park for leisure. The line served the priorities of the Japanese colonizers, who saw Dalian not only as a hub for

33 Ibid.
34 Curiously, the 1902 New York Times article mentioned that “(e)lectric lights are now in operation, and a complete system of electric street cars is in course of construction.” It is doubtful, however, that the streetcar system was ever finished before the Japanese took over the city in 1905. There was not record of any operational streetcar in Russian controlled Dalian. Details of the planned system and routes are not known. See “The City That Was Made to Order.”
35 Tiezhuang Guo, Jie Guang, and Junying Han, eds., Riben Zhi Min Tong Zhi Dalian Si Shi Nian Shi / 日本殖民統治大連四十年史 (Beijing Shi: She hui ke xue wen xian chu ban she, 2008), 591–92.
commercial interests, but also a place where leisure can be accessed and enjoyed by means of modern technology.

![The first streetcar started operation in Dalian in 1909. As seen here, signs bearing the words “test” in Japanese characters can be seen on the front and side of the streetcar. (Source: Yuanqi Li, ed., Da-lian jiu ying. (Beijing: Renmin meishu chubanshe, 2000), 87.)](image)

Fig. 3: The first streetcar started operation in Dalian in 1909. As seen here, signs bearing the words “test” in Japanese characters can be seen on the front and side of the streetcar. (Source: Yuanqi Li, ed., Da-lian jiu ying. (Beijing: Renmin meishu chubanshe, 2000), 87.)

The first streetcar line was soon extended from its original terminus at the Electric Amusement Park to reach Xigangzi (西岗子), situated in the site of the “Chinese City” under the Russian plan. A major market named after the neighborhood was located in the area. With the influx of Chinese laborers from nearby provinces to look for work, Xigangzi became a shanty town where informal housing stood in stark contrast to the planned, “Japanese” part of town west of the parks. The decision to extend the streetcar line to reach Xigangzi was perhaps arrived at with the SMRC’s realization that a way to efficiently transport Chinese laborers to the wharf and port facilities were necessary. In the early days of Japanese Dalian, before industrial and manufacturing infrastructures were solidly established, trading of merchandise such as soybean

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36 Ibid, 592.
was a vital source of revenue. Physical labor such as unloading and loading goods at the docks was performed mostly by Chinese men who earned a low wage. The extension of the streetcar line allowed them to travel between their homes in Xigangzi and the wharf where employment was to be found. Although the Japanese and Chinese population both used the same streetcar line, however, the streetcars themselves were segregated. “Regular” streetcars, which were reserved for the Japanese population, were painted green to be “in good harmony with the street trees.”37 The streetcars for Chinese laborers were orange in color, bearing the sign “laborer only car” to distinguish them from the green cars (see fig. 4). At 20% lower fare, the SMRC declared that they existed “for the benefits of Chinese workers”.

The city’s population continued to grow rapidly under Japanese rule. In 1909, the year the streetcar started operation, Dalian had a population of 40,844, with around 22,000 Japanese, 18,000 Chinese, and a small number of foreign nationals.39 In 10 years, the population grew to

Fig. 4: A “laborer only car” (勞工專用車), bearing its identity on the side of its orange body. (Source: Guo et al., Riben, 591.)

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38 Ibid.
39 O’Dwyer, Significant Soil., Appendix B, Table 1.
108,288, with the Chinese population surpassing that of the Japanese by about 20,000.\textsuperscript{40} When Japan entered war in 1935, Dalian’s population surged to 362,808 – close to half of which were Chinese men who worked mostly as laborers.\textsuperscript{41} Spatially, the city also expanded significantly, especially westward, passing beyond Xigangzi to reach an area known as Shahekou (沙河口). This area would soon become home to many of the SMRC’s industrial establishments, fulfilling Goto Shimpei’s, the first director of the SMRC, demand that industry should be located far from the center of the city.\textsuperscript{42} In many parts throughout the urban area, spaces that were undeveloped during Russian time were being filled in with various buildings.

A 1929 report of the SMRC on Dalian’s development from 1907 to 1928 noted that “(i)n the beginning it followed the Russian plan, consisting of central circles whence streets radiate like a spider-web, but soon the plan of the rectangular block system was adopted.”\textsuperscript{43} Although reduced in scale, the park that separated the two parts of the city were still in place. The area was subdivided into SMRC’s Electric Amusement Park (電氣遊園) in the north, Central Park (中央公園) with a Shinto shrine in the middle, and Western Park (西公園) in the south. The administrative and commercial center of the city remained on the same site as during the Russian era. Colonial offices, banks, foreign consulates were still concentrated around the Grand Plaza. Dotting the rest of the city, including the Xigangzi and Shahekou districts, were civic institutions such as schools, markets, hospitals, and police stations. The scale and complexity of the map

\textsuperscript{40} Ibid.
\textsuperscript{41} Ibid.
\textsuperscript{42} Dong, “Dalian Chengshi Guihua Shi Yanjiu / 大连城市规划史研究,” 31.
Fig. 5: A map of Dalian from Showa 12 (1937). The streetcar system was at its height. Routes are donated by solid back lines. (Source: Tarō Iizaka, Sekijitsu No Manshū / 昔日の満洲 (Tokyo: Kokusho Kankōkai, 1982.).)
from Showa 12 (fig. 5) stands in strong contrast with the relative simplicity of the Russian plan (fig. 2).

With the expansion of the city’s footprint and its population, the streetcar system continued to grow under the administration of the SMRC. Over several decades, there were many significant additions and changes to the system alongside with the changing geography of the city. By 1939, the system grew to operate 10 lines with a total of 65.3 kilometers of revenue generating tracks, 3 depots for maintenance and storage of rolling stocks, with a capacity of 100, 40, and 20 streetcars respectively. The number of rolling stocks in the fleet also grew from 37 in 1909 to 135 in 1939. When Japan was defeated in the war in 1945, there were 11 lines in total. An elaborate transportation network was in place, one that “reaches nearly every corner of the city”, surpassing the public transportation of Beijing and Shanghai in the same era. The full extent of the streetcar system just before the war is clearly illustrated in the system map below (fig. 6). In the paragraphs below, I attempt to account for the ways with which Dalian’s streetcar system intersected with the city’s variegated urban spaces. I choose to discuss the system line by line, describe the route of each line, the neighborhoods they connect and the people being carried. This geographical, if not fragmentary account is to be cross-referenced with the system map in fig. 6 and the various historic photographs that follow. My hope is that these pieces of information will give the reader an overall idea of the streetcar system in Dalian and its complex relationship with the city.

44 Ibid.
45 Ibid.
Fig 6: The full system map of Dalian’s streetcar system before the War, as indicated by the black line. The red line represents the bus system. (Source: Yukihiko Kitagawa. *Omoide No Dairen / 想い出の大連* (Kanagawa-ken Sagamihara-shi: Kitagawa Yukihiko, 1991), 6-7.)
Line 1: In 1910, one year after the first streetcar line started revenue service, Line 1, which operated from the wharf to Xigangzi, would extend westward to reach Shahekou. The newly developed area in the “western countryside” primarily for industries set up by SMRC. The area was also home to many civic amenities such as schools, parks, hospitals, Shinto shrines and markets. The neighborhood featured streets laid out in a grid pattern instead of the radial form in the city center. In the same year, a new streetcar line opened to connect the western suburbs to Hoshigaura（星ヶ浦）, a recreational beach about 10 kilometers southwest of Dalian’s city center. Situated on the southern edge of the Dalian peninsula and open to the Yellow Sea, Hoshigaura featured elaborate recreation facilities built by the SMRC, including a beach for sea bathing, changing facilities, a church, a hot spring, an aquarium, and a bronze statue of Goto Shimpei, the first director of the SMRC (fig. 7). The route would later become Line 6 of the system, with its terminus in the city at Taisho Plaza（大正広場）just south of Shahekou. The line was a great success for “carrying sea bathers and spring cherry blossom visitors to Hoshigaura.” Dalian’s streetcar system had developed beyond only carrying passengers within the core the city – access to recreational sites in the outskirts are also covered by its service.

Line 3: The western part of the city continued to develop. Taisho Plaza became a hub of its own with a high concentration of schools and research institutes. A new Line 3, originating from Taisho Plaza, would travel east, roughly parallel to Line 1 but to the south of it, to reach Tokiwakabashi（常磐橋）on the western edge of the city center and east of the Electric

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48 Suzuki, Jitsuroku Dairen Kaisō, 105.
49 Ibid.
Amusement Park. From there, Line 3 continued on to Grand Plaza, eventually reaching the wharf. The route of Line 1 was modified. Instead of reaching the wharf as its eastern terminus, it would end in Siergou (寺児溝) in the eastern suburb after passing though the two roundabouts of Asahi Plaza (朝日広場) and Chidoya Plaza (千代田広場) west of the Grand Plaza. Siergou was a densely populated by informal housing occupied by Chinese workers. As indicated on the map from Showa 12 (fig. 5), the area was also the site of a shelter for Chinese workers. Connecting Siergou in the east and Xigangzi-Shahekou area in the west, Line 1 was “characterized by passing though the main streets of the Chinese cities at its starting and ending points”. The line also passed in front of many of the new buildings erected by SMRC, such as

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50 Ibid.
51 Ibid.
52 Suzuki, Jitsuroku Dairen Kaisō, 105.
the Mantetsu Library, employee’s club, news agency, and the monumental headquarter of the company just east of the Grand Plaza. The streetcar system in the central area of the city also expanded significantly. **Line 2** ran along the northern edge of the city center, roughly tracing the southern boundary of the former “Administration Zone” set out by the Russian planners. The line started at Shikishima Plaza (敷島広場), a roundabout northeast of the Grand Plaza, and traveled west to Nihonbashi (日本橋), which was directly due north of the Grand Plaza. From there, Line 2 passed in front of Dalian Train Station before heading south to join the rest of the system at Tokiwakabashi, which had become a transportation hub where many streetcar lines intersected (fig. 8).

**Line 4:** Using the new tracks laid down for Line 2, a new Line 4 was created to connect the wharf to Taisho Square in the west, bypassing the Grand Plaza by taking a northern route across the city center area. In other words, both Line 3 and 4 started and ended at the same place – the only difference being the former passed through the city center while the latter did not. It

![Fig 8: Tobiwakashi on a busy day. Passengers could transfer between multiple streetcar lines here. (Source: Li, Da-lian jiu ying, 16.)](image)
was noted that, relatively speaking, Line 3 was mostly populated with Japanese riders, while Line 4 had more Chinese customers.\textsuperscript{53} It would make sense that Line 4, which connected the wharf and the Chinese neighborhood in the Western part of the city, was the route of choice for many Chinese laborers to commute between work and home. It was also known that many of the “laborer only” trains ran on Line 1 and 4, both of which passed through Xigangzi.\textsuperscript{54}

**Line 5** covered the south side of the city center. Streetcars on this line would leave Central Park, just south of Tokiwakabashi, and travel west. It passed through the Dalian Shinto Shrine, before entering the neighborhood of Nanzanroku (“Foothill of the South mountain”/ 南山麓), a highly sought after location for high end residences. As Yasuhiko Nishitsu put it:

> It was a peaceful hilly area where there was also a pasture… detached houses with gardens was built after one another as the most exclusive residential area in the center of Dalian downtown area. Not only Japanese, Westerners, Russians… Chinese businessmen who succeeded in the businesses settled in this place… In the morning I saw the appearance of salaried workers riding on a tram and commuting to work. It was the same scene as cities in Japan such as Tokyo and Osaka.\textsuperscript{55}

The detailed map of Nanzanroku below illustrates the extent of its development (fig 9). Parks, stores of various kinds, a children’s playground, schools, sportsgrounds, and many other facilities were within walking distance to the streetcar stops. The streetcar line was an integral part of the neighborhood. From there, Line 5 traveled north to join Line 1 at Chidoya Plaza, where passengers can continue on to the wharf, city center, or Siergou.

**Line 7, 8, 9:** The are three more streetcar lines to account for in order to completely describe Dalian’s streetcar system at its height. To facilitate recreation and escape from the city, Line 7 was added. It shared the same starting point as Line 2 at Shikishima Plaza north of the

\textsuperscript{53} Ibid.
\textsuperscript{54} Ibid.
\textsuperscript{55} Nishizawa, 図説「満洲」都市物語, 68.
city center. It then passed through the Grand Plaza before heading southeast to leave the city. After about 7 kilometers of traveling, Line 7 ended in Laohutan (“Tiger Beach” / 老虎灘), another popular coastal recreation area facing the Yellow Sea. The two streetcar lines that provided access to Hoshigaura and Laohutan were very busy during summer months, occupied mostly by beach-goes. Finally, there were two short lines. Line 8 connected the “Russian Wharf” and “North Park” north of the city center, located in the former Russian “Administration Zone”. It branched off from other streetcar lines at Nihonbashi. Line 9 connected the area near Shahekou Shinto Shrine to SMRC’s locomotive workshop to the west.

Fig. 9: A detailed map of Nanzanroku. The intricately laid out neighborhood resembled wealthy residential areas in Japanese cities. The streetcar line can be seen on the northwest portion of the map. (Source: Kitagawa, 1991)

56 Suzuki, Jitsuroku Dairen Kaisō, 105.
The same streetcar system reached different parts of the cities where the urban landscapes stood in stark contrast with one another. From a showcase of modern architecture such as the Bauhaus inspired JQAK radio station and Art Deco Dalian Train Station, the luxury residences in Nanzanroku, to the rudimentary shelters for Chinese workers, the streetcar system tracked the stark polarization of a rapidly developing city (fig. 10).\(^{57}\) At its very core, Dalian was built and operated as a colonial city. The urban landscapes experienced by the colonizers and the colonized were extremely uneven. In the early days of Russian control, the city was strictly segregated according to ethnicity – Chinese were not allowed to enter the “European City”. For Japanese controlled Dalian, social class and wealth were the primary demarcation for one’s place in the city – social relations were cemented by the production of the space of the city. Not unlike Haussmann’s Paris, “the bourgeois subject of the boulevards is opposed to the placeless laborer, who does not truly belong to the city.”\(^{58}\) Technically speaking, residential areas in Dalian were


mixed to echo the Japanese propaganda of “co-prosperity”, an ideology which claimed that people of East Asian ethnicities would rise to power under its rule. In reality, as O’Dwyer pointed out, “(n)o regulations governed the distribution of residential zones by ethnicity; for the most part, there was no need… allowing the market to ensure that poor Chinese lived clustered in specific area.”  

The strategic placement of the orange “laborer only” streetcars on certain lines reflected such reality.

Dalian’s electric streetcar network reached areas of the city where the contrasts in wealth and landscape were unmistakable. At the top end of the spectrum, the Nanzanroku area and the beach of Hoshigaura featured “elite bourgeoisie built trophy homes” and “lyrically named neighborhoods” after Japanese vegetation and landscapes. Architects from Japan and Europe designed many luxury mansions in these areas. Many homes featured the most advanced building design and technologies of the time, for example, double-glazed windows, electric heating, and flushing toilets. On the more modest side, Dalian’s growing middle class, comprised mostly of Japanese families, placed pressure on the need for increasing housing provision. In the early 1930s, for example, 24,000 bungalows, each with a one-room frontage, provided accommodation for such middle-class families. The city’s working poor, almost strictly migrant Chinese laborers employed with the many operations of SMRC such as docks and factories, concentrated in the “Chinatowns”: Shahekou and Xigangzi to the west of the city center, the area near the docks, and Siergou in the east. All four areas were served by the

59 O’Dwyer, Significant Soil, 54.
60 Ibid., 34.
61 Nishizawa, 図説「満洲」都市物語, 68–69.
62 Ibid.
63 O’Dwyer, Significant Soil, 34.
streetcar system. Although sharing many things in common, such as the use of Chinese street names, the four “Chinatowns” were somewhat different in their histories and characteristics. Shahekou was in close proximity to and connected by a short streetcar route to SMRC’s locomotive plant, where many worked. Xigangzi, the “older” Chinese area since the time of Russian occupation, were plentiful in brothels, opium dens, temples, shops, and soybean processing plants.\(^{64}\) Living close to the docks meant that one could often find work without having to leave the neighborhood.\(^{65}\) Siergou was among the most densely populated areas in the city. With its majority population being Chinese laborers, abundant makeshift housing, and a giant depot for storing some 60,000 tons of excess soybean, the area was branded “Dalian’s dirtiest Chinatown.”\(^{66}\) Life inside Dalian’s Chinese enclaves were largely foreign to many of the Japanese residents of the city because of the difference in language and ways of life. Overall, the uneven geography of Dalian was tied together and served their respective functions in the whole schema of the city by the electric streetcar network. It circulated the stratified population to places for business, work, leisure, and shelter. A working class history of the city and experience of the streetcar system would certainly be very different from that of the Japanese residents, which provided much of the written account of life in colonial Dalian. Further research into the Chinese life in Dalian through local archives and newspapers would enrich our understanding of the socio-spatial equality vis-à-vis the city’s highly developed streetcar system.

The Chinese population in Dalian, outnumbering their Japanese counterpart since the early days of the city, eventually formed its own bourgeoisie class. Some Chinese acquired more

\(^{64}\) Ibid., 55.
\(^{65}\) Six to eight thousand Chinese laborers worked at the docks each day. See Ibid., 41.
\(^{66}\) Ibid.
wealth and social status, thus shared many of the privileges once only held by the Japanese. For example, some of the finest residences in Nanzhanroku were occupied by successful Chinese businessmen.\(^ {67}\) In the commercial districts of Dalian, Chinese workers and merchants were an increasingly ubiquitous sight.\(^ {68}\) Some Chinese became entrepreneurs by opening shops and restaurants in the city’s business district, competing directly and often winning over fellow Japanese business owners.\(^ {69}\) A sizable number of Chinese elites “enjoyed access to an inner circle of financial notables (both Chinese and Japanese), [and] the trust of Japanese authorities.”\(^ {70}\) The Chinese residents of Dalian also took a significant part in the operation of the streetcar system. While the positions of director and guidance officer were staffed by Japanese, by Showa 5 and 6 (1930 and 31), the cabin crew had been “overwhelmingly Chinese”, who were well-trained, spoke good Japanese, and had great working attitude.\(^ {71}\) Although the Chinese population stared to play more significant roles in the administration and operation of the city, the system of Chinese laborer-only orange streetcars was to stay. The policy was often reiterated in newspaper reports, propagating the image that Chinese workers never washed their clothes or showered, carried foul smells and infectious diseases.\(^ {72}\) Chinese workers, whose labor power was vital to the everyday operation and profit-making of the SMRC, were treated as a class of their own. “Higher class” Chinese who were not laborers were allowed on the green streetcars which also carried Japanese and foreigners. It is very likely that the laborer-only streetcars would not be

\(^{67}\) Nishizawa, 図說「満洲」都市物語, 68.

\(^{68}\) O’Dwyer, Significant Soil, 50.

\(^{69}\) Suzuki, Jitsuroku Dairen Kaisō, 100.

\(^{70}\) O’Dwyer, Significant Soil, 54.

\(^{71}\) Suzuki, Jitsuroku Dairen Kaisō, 105.

\(^{72}\) Guo, Guang, and Han, Riben Zhi Min Tong Zhi Dalian Si Shi Nian Shi / 日本殖民統治大连四十年史, 592.
operated on the “recreation” lines that went to the beaches or amusement parks. Dalian’s streetcar system offered differential treatment to riders based on their social class, which often overlapped with ethnic demarcation.

What about the affective and experiential dimensions of the streetcar, which cannot be reduced to figures, numbers, or routes? What was it like to experience the city of Dalian and beyond through its streetcar system? Since the lives of the Chinese laborers was largely unaccounted for in published literature, especially in their own words, the historical records we have concerning the experience of riding the streetcar are biased towards the middle and upper class residents of the city. One of the most comprehensive first-person documentation of life in the city is the book Manchurian Legacy written by Kazuko Kuramoto. She was born Dalian in 1927 as a third generation of her family in the city – her grandfather was sent there in 1905 as a police officer. According to Kuramoto’s account, students utilized the streetcar system to commute between home and school. She noted that public facilities such as schools, restaurants, theatres, buses, streetcars were segregated, although some chosen Manchurian children were allowed to attend Japanese schools. These children were allowed on streetcars reserved for the Japanese, although their presence were not always welcomed. Discounted tickets were available for students. Transfers were issued passengers upon boarding the streetcar (fig. 11).

74 Ibid., x.
75 Ibid., 24.
76 Ibid., 68.
77 Suzuki, Jitsuroku Dairen Kaisō, 106.
However, they were not valid for use by high school students.\textsuperscript{78} In other words, they had to walk to their destinations from the closest transfer stop with the belief that walking has pedagogical and health benefits\textsuperscript{79}. Certain streetcar waiting platforms were reserved for Japanese riders.\textsuperscript{80}

Another account by Yukihiko Kitagawa (1991) of his recollection of boyhood in Dalian reveals more on the use of the streetcar by the leisure class. Kitagawa accounted for a trip he took to the Hoshigaura beach during his kindergarten years in Dalian. He had many observations about leaving the city on a streetcar:

The train came out from Taisho Plaza in the west end of the city. Salt fields could be seen far away. The train then ran along the coast to the end point of Hoshigaura. Unlike trains running in the city, the rail was not embedded in the ground and it was exposed. Sleepers were visible, and weeds grew in the gravel. Sound that was heard when the wheels pass through the seams of the rail… different from the train that define the city… There was a unique atmosphere on the train that runs while swinging the car body to the left and right… In the afternoon on a sunny hot day, a pleasant wind enters from the

\begin{itemize}
\item\textsuperscript{78} Ibid.
\item\textsuperscript{79} Ibid.
\item\textsuperscript{80} Kuramoto, \textit{Manchurian Legacy}, 61.
\end{itemize}
open window, along with the scent of the ride, the landscape of green trees, the lawn of a distant golf course, scattered mansions… only the sound of the train was magically and quietly heard.\textsuperscript{81}

Such a rosy picture of the streetcar ride could perhaps only be experienced by the privileged class, but it is a glimpse of how the electric streetcar injected new meaning to leisure and recreation. The same system would shuttle laborers to and from work in segregated cars that were crowded and much less pleasant. Mobility enabled by the streetcar had different meanings for those who occupied different positions in the social class spectrum in Dalian. The streetcar system served as an integral part of the city’s growth and everyday lives of residents, as well as a testimony to the city’s uneven geography.

Towards the end of the war, it would appear, that the segregation of passengers on Dalian’s streetcar system was partially lifted. Some Japanese residents were surprised and felt “invaded” that Chinese laborers boarded the same streetcars as they do.\textsuperscript{82} Nevertheless, as the war heightened, there were less complaints as more and more Japanese residents ended up doing hard labor for the war effort.\textsuperscript{83} The segregation of the streetcar system came to an end after Japan’s defeat in 1945 when Dalian entered \textit{de-facto} Soviet control. An account from September 1949, just a month before the establishment of the PRC, a visitor observed that everyone on the streetcar, including women, were workers wearing dark uniforms in blue and gray.\textsuperscript{84}

\textsuperscript{81} Kitagawa, \textit{Omoide No Dairen}, 5–6.
\textsuperscript{82} Kuramoto, \textit{Manchurian Legacy}, 68.
\textsuperscript{83} Kitagawa, \textit{Omoide No Dairen / 想い出の大連}, 5–6.
\textsuperscript{84} Yang, \textit{Dongbei Fang Wen Lu / 東北訪問録}, 120.
Chapter 2
The Twofold Technology of the Streetcar

The electric streetcar is one of the landmark technological advancements around the turn of the century that has a lasting effect on the outlook of urban centers in many parts of the world. There are two aspects to this type of transportation system and the technology it entails. First, the streetcar can only be conceived and materialized by building on previous technological achievements, such as power generation, transmission, and the mechanical know-how of building the rolling stocks. On the other hand, streetcar systems can be seen as a form of social technology that shaped the experience of modernity, transforming people’s relationship with one another and the environment. Like the introduction of many other forms of technology, the streetcar was not always well received in its early years – some rejected them out of unfamiliarity, fear, or the way it altered the urban environment. From an urban novelty to being an integral part of everyday urban life, the electric streetcar set a new technical standard that eventually became a common occurrence for urban dwellers around the world. In the Japanese discourse and practice of colonial expansion in Manchuria, the streetcar played a crucial role in shaping the technical and social standard for what was to become Japan’s claim to be a modernizing force for the “co-prosperity” of East Asia.

The building of the Dalian’s streetcar was an international effort – the SMRC searched for the most advanced technology, expertise, and materials available at that time from around the world. The July 1908 issue of the Electric Railway Journal, a prominent journal on the subject published in the United States from 1884 to 1931, reported that tenders for the materials would be called for, and the chief engineer of the SMRC was expected to visit the US to study the latest
developments in the field. Another entry in the August issue of the same year gave more technical details of the project: around 13 miles of tracks were planned to be built at the beginning, connecting “the wharf with the railway station and the quarter where the official residences and the hotel are located, going thence to the Chinese settlement at Shokoshi.”

The journal entry also encouraged interested American streetcar manufacturers to get in touch with the chief engineer of SMRC during his visit to the US. Supporting equipment was ordered from the US to prepare for the system. In 1908, new equipment costing $135,000 ($3,368,443 in today’s dollar) were ordered from the General Electric Company in the US to furnish the electric plant of the SMRC in Dalian in order to support the operation of the streetcars in the near future.

With all the system design, routing, and ordering of supporting equipment in progress, the manufacturing of the rolling stocks – the vehicles for the streetcar system – became another pressing issue. What kind of streetcars were to be used for the everyday operation the system?

Streetcars are not simple machines. Not only are material sourcing and the design process important, the actual manufacturing process itself requires highly specific techniques in various fields. In his book *Built to Move Millions*, Carig R. Semsel outlined the general pattern of the

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86 Ibid., 403.
87 This figure is calculated from January 1903 to June 2017. Since the United States Department of Commerce does not provide inflation rate data from 1908, data from 1903 here is used to generate the closest figure.
88 Ibid.
industry.\textsuperscript{89} He gave a detailed historical account of streetcar building in the state of Ohio, which was once a capital of streetcar manufacturing and system construction in the early 20\textsuperscript{th} century:

> The Art of Car Building: Streetcars were never built entirely by one manufacturer. Car builders usually built the car bodies but relied on other manufacturers to supply electrical components (motors, controls, lights, wiring, etc.), trucks, brakes, and heating systems… interior furnishings… might be manufactured in-house.\textsuperscript{90}

With regards to the manufacturing process of the first generation of electric streetcars used in Dalian, bids were received from Japanese and international car builders, but American-built cars were deemed superior in quality.\textsuperscript{91} However, the final chosen manufacturer neither came from Japan or the US – Dalian’s first streetcars were to be assembled in the UK with components from continental Europe. An article from the 1909 issue of the \textit{Electric Railway Journal} gives us a glimpse of the first batch of 30 streetcars operated in Dalian before they rolled out from the factory floor. According to the article, the streetcars were manufactured by the United Electric Car Company Ltd., of Preston, Lancaster, England.\textsuperscript{92} At that time, the United Electric Car Company was the largest tram builder in Britain. It had successfully secured a good share of the manufacturing of tram bodies – an industry that was largely relying on American companies until that point.\textsuperscript{93} For the streetcars prepared for the Dalian system, the “trucks” underneath the body of a streetcar – the platforms where the wheels and the traction motor is connected – were

\textsuperscript{89} Craig R. Semsel, \textit{Built to Move Millions: Streetcar Building in Ohio} (Bloomington: Indiana University Press, 2008).
\textsuperscript{90} Ibid., 35.
\textsuperscript{91} \textit{Electric Railway Journal}, 1908, 403.
supplied by Mountain & Gibson of Bury, England, while the electrical components were provided by another company in Berlin, German. This arrangement suggests that the Preston manufacturer served to complete the final assembly of the streetcars from the parts it sourced from other companies, which is consistent with Semsel’s remark earlier that streetcars were never built entirely by a single manufacturer.

The Electric Railway Journal article in 1909 entry also provided the basic dimensions and design characteristics of the streetcar: 35 ft. 8 in. overall length, 7 ft. 8 in. body width, 8 ft. 7in. inside height and 12 ft. from rail to the top of the roof. Each car had a capacity of 32 passengers, divided into two classes by “an inside platform 4 feet wide.” The entrance door was located in the middle of the streetcar, while two double sliding end door were featured in the front and back of the streetcar body. Dalian’s streetcars ran on standard gauge, and as of 1910, there were 3 miles of single and 5 miles of double track completed. As seen in the factory photo (fig. 12), a trolley pole protruded from the roof, connecting to the overhead wire to provide power for the traction motor to propel the streetcar forward. Two visible trucks, each with four metal wheels, were visible on each street car just below the bulk of the body. The following passage describes concisely the interior furnishing of the two classes as they were designed when rolled out from the factory floor:

\[\begin{align*}
94 & \text{ Ibid.} \\
95 & \text{Semsel, } Built to Move Millions, 35. \\
96 & Electric Railway Journal, 1909, 734. \\
97 & \text{Ibid.} \\
\end{align*}\]
“The inside finish throughout is of oak and North Caroline pine, with the roof boards exposed. The first-class compartment is furnished with reversible cross-seats upholstered in green mohair velvet, and the second-class compartment with longitudinal slat seats. Instead of placing ventilators in the clerestory, individual louvers are used over each window.”

Consistent with the common streetcar manufacturing techniques of the time, wood was used to construct the body before steel became favourite in the mid-1910s for its better structural strength and fireproofing property. The choice of louvers on windows over clerestory ventilators (which opens near the roof) could also be a design specification adapted to the often snowy weather in Dalian. From the description, the differences in the degree of luxury between the two classes were quite pronounced: the first-class cabin looked more like an upscale lounge one would expect on a long distance train, while the second-class furnishings are straightly utilitarian. In practice, however, it is not sure whether the above two-class configuration of the streetcar were put in operation.

Fig. 12: One of the first streetcars built for Dalian as it leaves the factory in Preston, Lancaster, England. (Source: Electric Railway Journal, 1909, 734)

99 Ibid.
100 Semsel, Built to Move Millions, 42.
The power grid is an indispensable infrastructure for any cities to have streetcar operations. In the case of Japanese Dalian, the city’s emphasis on industrial development and modern urban planning strategies contributed to the fulfillment of the technical perquisites in order to materialize the streetcar system. Unlike self-propelling vehicles that generate its own power to support their operation, such as the steam boilers in locomotives and ships, or the internal combustion engines found in automobiles, streetcars typically do not generate their own power. There were previous attempts to make self-propelled streetcars by carrying batteries on board. However, such attempt was soon deemed to be a failure because of the short running life of the batteries, as well as the added weight and potential chemical leak hazards. As such, electrical power needs to be transmitted to every corner the streetcar reaches in an efficient and reliable manner. In many cases, the streetcar’s power network was intimately connected to grid that powers the city’s homes, industries, and institutions.

The streetcar’s requirement for a standardized power grid throughout the city in turn catalysed the centralization of power generation and transmission. Having incompatible standards of delivering electricity in different parts of the city would put limitations on the reach of the streetcar network. The transition of administrating power generation from neighborhood to city-wide, and then to national levels also coincided with the growth of the role of electricity in everyday urban life. In Tokyo, for example, Japan’s first electric power company, Tokyo Electric Lighting, was established as early as 1883. However, there were a large number of privately owned or semi-private power companies until the Japan Electric Power Generation and

Transmission gain monopoly in 1939.\textsuperscript{102} In Dalian, small scale power plants were set up during the Russian controlled period to power the machinery in the docks and the buildings in the area. These facilities were highly localized, which means that each site would benefit from having its own source of electrical power in close proximity. There was no need to connect these power plants together, or to standardize the means of power transmission. The Russian planners did not envision Dalian to become a spreading industrial city with substantial residential districts, and did not devise provisions for a city-wide power grid that would be essential for a network of streetcars to operation. It was not until the Japanese took control that large scale electric plants and networks were installed with transforming the city into a major industrial center in mind. As part of the subsidiary activities of the SMRC, electric plants, gas works, docking, hotel business, etc., were centrally operated. According to the 1910 \textit{Electric Railway Journal}, the SMRC centrally provided electricity to the general public, industries, and the streetcar at that time from its own power stations located in Dalian.\textsuperscript{103} On a larger scale, most cities in Japanese-occupied Manchuria operated their own power plants independently. It was not until May 1926 that they amalgamated to form the South Manchuria Electric Company, which united the power supply network of the entire region.\textsuperscript{104} Dalian’s proximity to the Fushun and Anshan coal mines enabled easy access to fuel for power generation. The city became the powerhouse of energy to the region, enabled by the then centralized power transmission infrastructure. In this sense, the electric streetcar in Dalian benefited from, and was indeed part of, Japan’s colonial project of natural resources extraction to build a modern, industrialized empire.

\textsuperscript{102} Ibid., 2.
\textsuperscript{103} \textit{Electric Railway Journal}, 1910, 945.
Technical aside, Dalian’s streetcar system was a form of social technology that transformed people’s relationship with one another and the environment. Technological advancement that enabled – and brought about by – the electric streetcar constituted changes in everyday experience of the city dwellers not confined to mobility alone. With electricity came power, lighting, and machines, the ubiquity of which were markers of industrial modernity. Indeed, the “motif of light”, as Mizuta points out, “has been crucial to the way in which Japan was perceived across the twentieth century.”¹⁰⁵ Luminous environment, as opposed to the dimly lit interior of traditional Japanese architectural spaces, was rapidly taking over cities throughout the country. The symbolic meaning of electrical power and lighting often went beyond its utility to become an object of celebration itself, a spectacle of modernity, and an object for popular consumption. For example, when the plan to gradually electrify the entire city of Tokyo was interrupted by the Great Kanto Earthquake of 1923, the celebration of the successful reconstruction 7 years later prominently featured brightly lit department store fronts and illuminated streetcars to symbolize the overcoming of natural disasters by the power of modern technology.¹⁰⁶ Similarly, the streetcar functioned beyond its utility as a mean of transportation – its existence was mobilized as a symbolic representation of an electric modernity.

The first few decades of the twentieth century were the heyday of expositions, fares, and amusement parks. A new venue for entertainment known as “trolley parks” was created hand in hand with the electric streetcar.¹⁰⁷ The barns for maintaining and storing streetcars were often

¹⁰⁶ Mizuta, 342
situated at the end of routes, outside of the center of the city. The relatively open space enabled the construction of amusement parks. Moreover, such areas could be easily electrified because of the close proximity to the electric streetcar barns – many of which generated their own electricity in the early days. From an economic point of view, these electric trolley parks were highly desirable since they were close to the source of power: “(b)uilding an electrified amusement park both used idle generating equipment and increased ridership during slack periods.”\textsuperscript{108} Electrified trolley parks connected streetcars and leisure time, carving a new form of leisure that involved technology and mobility. In another example, an amusement park was actually located in close proximity to a streetcar manufacturing plant at the Cincinnati Car Company complete with a Ferris wheel and a rollercoaster.\textsuperscript{109} The electric streetcar and trolley parks shared a kinship that were replicated in many cities throughout the world.

Aside from trolley parks located near streetcar barns and manufacturing plants, streetcars provided the public with access to large fairgrounds located outside of the core of the city. One of the earliest, and most well-known, example of the connectedness between electric streetcars and fairgrounds was the Chicago Columbian Exposition of 1893. Fully accessible by the streetcar, the centerpiece of the Exposition was the electric Ferris wheel, which many considered a wonderment brought about by modern technology. Indeed, the electric streetcar cum trolley park cum fairground model was copied throughout the United States. By 1901, “half of all street railways operated one or more amusement parks.”\textsuperscript{110} While the use of plentiful artificial lighting and dazzling mechanical rides were true spectacles to visitors, many considered the streetcar ride

\textsuperscript{108} Ibid.
\textsuperscript{109} Semsel, \textit{Built to Move Millions}, 29.
\textsuperscript{110} Nye, \textit{Electrifying America}, 123. Nye, 123
to and from the parks an equally thrilling experience: “one of the chief attractions to the patrons is the long, swift ride in the open car with the cooling breeze generated by the motion.”  

In Dalian, a trolley amusement park similar to those found in American cities was established in September 1909, the same year the streetcar began operation. Invested and constructed by the SMRC on parkland that was formerly used as a buffer between the European and Chinese population, the “Dalian Electric Amusement Park” was publicly accessible by the first streetcar line being put in place. While the amusement park ceased to exist after the end of the Second World War, and the site had since become a zoo and then a residential development project, the original electric playground can be glimpsed through historic accounts and photographs. Occupying an area of 7.2 acres, the park was densely packed with many attractions, including an electrified merry-go-round, a small zoo, a greenhouse, a mechanized water fountains, and various spaces for concerts, performances, and other types of recreational activities (fig 13). Located just outside of the government, business, and residential areas of the city, the amusement park balanced a sense of escape and accessibility by being linked directly to the then state of the art electric streetcar system.

The advancement of technology created a new sense of leisure, both in terms of space (the park) and mobility (the ride itself was considered part of the experience), tied together by the streetcar system. In creating the Electric Amusement Park, Dalian, and indeed the colonial Japanese Government, had placed itself on the map of the most modern recreation trend of the metropolis of the west, rivalling places such as Chicago and its exhibition ground.

111 Ibid., note 88.
Like the introduction of many forms of technology, the popularization of the modern streetcar was not without oppositions. There were outspoken advocates who maintained that the electrification of cities destroyed the traditional sense of place. On the other hand, the streetcar materially changed the pulse of cities and their traffic patterns, often creating tension between pedestrians and mechanized vehicles. In Japan, for example, the rapid electrification of cities and interior spaces during the late Meiji and early Taisho period generated much debates amongst cultural critics. One of the most famous of such work produced under that particular debate was Tanizaki Jun’ichiro’s *In Praise of Shadows*.\(^{113}\) Tanizaki maintained that there are essential aesthetic differences between the search for light of the West and the reverence of dark in Japan. In arguing so, he contended that modern electric lighting is incompatible with traditional,

Japanese interior spaces as well as articles such as lacquerware, painting, and so on. Tanizaki warned of the loss of traditional aesthetics as the country was overcome by the pursuit of using electricity for illumination in everyday life – a defining symbols of Western modernity that is incompatible with Japanese aesthetics.\textsuperscript{114}

The electric streetcar, with its large size and high speed relative to other forms of transportation at the time, profoundly changed the rhythm of cities. As Nira Wickramasinghe pointed out in her book \textit{Metallic Modern: Everyday Machines in Colonial Sri Lanka}, “(t)ramways, cars and bicycles changed the cityscape by allowing its people to move freely and collectively at a speed never been experienced.”\textsuperscript{115} With regards to Colombo, Sri Lanka, she wrote on the introduction of the electric streetcar stirred up violence in the city:

> When the trams were introduced in Colombo in January 1899, police officers had to travel along with the passengers to protect the new machines against stone throwers… There were reports of boys placing stones on the tracks in the hope of derailing the trams, and until slower vehicles such as bullock carts and rickshaws got used to their pace, there were a number of street accidents in the city.\textsuperscript{116}

The arrival of the streetcar as an everyday technology of mobility signified the overwhelming presence of industrial life – going to and from work on modern transportation machines, to find oneself spending hours working on another machine in the factory. Wickramasinghe pointed out that in the early twentieth century, in Colombo and in other places where electric streetcar were introduced, workers appeared to be “unaccustomed to the discipline of industrial life, the rile of

\textsuperscript{114} Ibid.
\textsuperscript{115} Wickramasinghe, \textit{Metallic Modern}, 111.
\textsuperscript{116} Ibid., 112-3.
the clock and timetables, the insistence on punctuality and regular output.”

In this sense, the streetcar cannot be reduced to an isolated piece of transportation technology, or one that served only leisurely functions. It was part and partial of the experience of the transformation of society towards industrial modernity.

While streetcars were new to the area of Manchuria when it was introduced in Dalian in 1909, many of the Japanese residents who migrated to city might have experienced streetcars before in homeland Japan. Like Tanazaki’s argument on the increasing dominance of electric lighting, the introduction of streetcars was not without controversy in Japan. Natsumi Soseki’s well-known novel Sanshiro provides us with a glimpse of how the streetcar might have been received in Tokyo. Published in 1909 and set in Tokyo in the 1890s, the protagonist Sanshiro arrived in Tokyo from his hometown in rural Kyushu to start his graduate studies at the prestigious University of Tokyo. Of the many things in the city that made him felt alienated, the electric streetcar was amongst one of them – “the ringing of the streetcar bells startled him.”

After living in the city for a while, Sanshiro still does not feel accustomed to the way of life, nor was he satisfied with his academic pursuit. His friend Yojiro encouraged him to “(g)et on the streetcar and ride around Tokyo ten or fifteen times”, and he would become satisfied. Coming from a rural background and did not have much experience with the streetcar, Sanshiro countered Yojiro’s suggestion with puzzlement. Yojiro explained that “(r)iding the streetcar is

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117 Ibid. 113.
119 Ibid, 160
120 Ibid.
not the only way to get satisfaction… but it’s the first step, and the easiest\textsuperscript{121}. In other words, mobility enabled by modern technology, like the act of walking, was constructed as a therapeutic, liberating activity.\textsuperscript{122} Later on in the novel, Sanshiro started to overcome his leery feeling towards the streetcar, although he still makes frequent mistakes and gets lost in the system. The point here is that like many forms of technologies that many take for granted, it took time for many to get used to the streetcars when they first started operating in cities. What is perhaps more interesting from the experience of Sanshiro is the liberating potential (to become satisfied, albeit temporality) promised by modern technology, one that mediates between the human body and the physical environment to generate new meanings and feelings.

Technology and our everyday lives are connected in many ways, especially when a technology of mobility is concerned. As discussed in the previous chapter, the electric streetcar in Dalian had an intimate relationship with the layout of the city and the lives of its residents. As a machine that helps people get to places faster or explore locations that were previously difficult to access, the streetcar suggested a new plane of urban existence, as an extension of one’s physical body. It is perhaps useful to consider the conception of material, instead of metaphorical, machines by Deleuze and Guattari:

\begin{quote}
A machine may be defined as a system of interruptions or breaks... Every machine, in the first place, is related to a continual material flow (\textit{hylè}) it cuts into... every machine functions as a break in the flow in relation to the machine to which it is connected, but at the same time is also a flow of itself, or the production of a flow, in relation to the machine connected to it.\textsuperscript{123}
\end{quote}

\textsuperscript{121} Ibid, 160
\textsuperscript{123} Gilles Deleuze and Félix Guattari, \textit{Anti-Oedipus: Capitalism and Schizophrenia} (Minneapolis: University of Minnesota Press, 1983), 36.
To borrow their language, the electric streetcar cuts into the flow of human movement, enhances it in selective ways, introduces interruption, breaks, and new rhythms in the novel mode of movement. The effects of technology are therefore, embodied and practiced. It provides new ways of imagining and practicing mobility in the city – novel ways of how bodies are connection with each other and the urban environment.

How then, does this new mode of movement and imagination of such, relate to individual subjectivity and social organization? Here a Foucauldian analysis or power and knowledge may help us with understanding how modes of mobility can both be a body of knowledge and a technique of governmentality. As Manderscheid, Schwanen and Tyfield pointed out, from a Foucauldian standpoint, mobility is a technique of power “for making that something knowable and governable.” The electric streetcar network maps the urban space in a particular way, and prescribes a certain mode of traveling. In other words, technology here is to be considered a kind of knowledge formation that creates a certain form of common sense with regards to moving about in the city. As Creswell puts it, “a constellation of mobility”:

…mobility involves a fragile entanglement of physical movement, representations, and practices… At any time, then, there are pervading constellations of mobility – particular patterns of movement, representations of movement, and ways of practising movement that make sense together.

The metaphor of constellation, in term, has it origin in the writing of Walter Benjamin.

Susan Buck-Morss wrote:

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Constellations… to connect these fragments and facts in figures that are legible in the present… It is lodged in the very structure of our disciplines – which are themselves magnifying apparatuses, encouraging the insertion of new discoveries into their already charted constellation of discourse…

In Japanese Dalian, the streetcar system formed its own constellation, guiding the movement around and experience of the city. In doing so, the system charted not only its own reality, but that of the riders who came to perceive the city through the streetcar’s constellation – the fragments of neighborhoods the streetcar passed through, the social encounter they engendered, and the industrial technology that became an integral part of the experience of traveling. Benjamin, however, did not see the “constellations” as the entirety of reality. Rather, those that are legible to us are already distorted by power, mediated by technology, and their importance magnified. The introduction of the streetcar system in Dalian eclipsed other ways of traveling, such as walking and human powered rickshaws, the existence of which provided a very different way of conceptualizing and experiencing city. In this sense, the “constellation” brought about by the electric streetcar technology shifted the practice and meaning of traveling within the city altogether, and became the dominant mode of transportation in popular imagination.

Rhythm is another important aspect of Creswell’s analysis on mobility, which in turn draws on Lefebvre’s work on *rhythmanalysis*. The rhythm of the electric streetcar is an industrial one, articulated by the machinery on board and the way it moves through space. The humming of the motor, the grinding sound of the wheels on the steel tracks, and the pace with which moves across the urban landscape contribute to the unique rhythm of the streetcar. In

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127 Ibid 77.
addition, the streetcar rhythmically punctures the space of the city in its own particular ways.

The frequency and duration of the stops of streetcars, for example, are very different from that of the inter-city train. The streetcar engenders a particular rider experience given its rhythm.

Lefebvre also emphasized on the distinction between private and public rhythm, the internal and the external:

“(a) Secret rhythms: First, physiological rhythms, but also psychological ones (recollection and memory, the said and the non-said, etc.). (b) Public (therefore social) rhythms: Calendars, fêtes, ceremonies and celebrations; or those that one declares and those that one exhibits as virtuality, as expression (digestion, tiredness, etc.).”

The rhythm of the streetcar is a public rhythm, a collective force that is social in its nature, like the calendars and festivals that demarcated time for groups. In its public display while moving through the city, there is almost nothing more immanent and obvious than the example of the public rhythm accentuated by the streetcar in the early 20th century. The streetcar existed to the bare sight of city dwellers, whether one rides it or not – its rhythm became part of the everyday lives of most people. The representation of the speed of the streetcar does vary in relation to the context it situates in. In its early days, the electric streetcar was considered fast comparing to walking or rickshaws. Today, however, it is regarded as a slower form of transportation in relation to the subway or the automobile. Nevertheless, there exists a public consensus on the rhythm of the streetcar at a given time in history – one that underlines how urban mobility is imagined and practiced at the moment. Such rhythm-in-common is historical in nature, resulted by the introduction of a public technology. It is a constituting part of what Creswell calls the

129 Ibid., 27.
pervading constellations of mobility – in his own words: “particular patterns of movement, representations of movement, and ways of practising movement that make sense together.”

The constellations of mobility specific to the electric streetcar operating in the city – a meaningful system through which one interacts with the physical environment in particular ways – is relevant to what Gramsci calls “common sense” (*senso comune*). *Senso comune* in this context refers not so much to the meaning of good, practical sense in English, but “refers simply to the beliefs and opinions supposedly shared by the mass of the population.” In this sense, Gramsci’s notion of *senso comune* are the “hidden” rules and formulations that are shared by members of a society, one that makes sense in the cultural worlds occupied by the mass of the population. Technology, such as the electric streetcar that forms our imagination and practice of mobility, contributes to the *senso comune* of a given era and society. The introduction of the streetcar eventually led to the shared understanding in the use of it in everyday life. *Senso comune* that becomes “natural” once it becomes part of everyday life.

For Gramsci, *senso comune*, or the culture of the masses, is historical, a result of accumulation of processes, ideas, and practices over time. The Japanese Marxist philosopher Tosaka Jun built upon Gramsci’s notion to argue for what he called the “technical standard” of a given era. For Jun, objective technology only acquires meaning within certain social and historical contexts of the forces and relations of production. In other words, machines and technology serve as the forces that govern the organization of the means of labor. A new

130 Cresswell, “Towards a Politics of Mobility,” 18.
subjective is produced, that of the industrial laborer whose everyday lives were mediated by the prevalence of the machine. In the case of the streetcar in Dalian, technology provided powerful influences in terms of the organization of space, mobility, class, and time in the city. Jun’s concept of “technical standard” is an organizing force in society that mediates the objective (machines) and the subjective (individuals), one that allows the standardization of labor for capitalist mode of production to take place.\textsuperscript{133} Jun wrote:

\begin{quote}
… just as the forces of production in a society are material, it has to be material as well. The technological standard is by far a higher social abstraction than the means of production or its organization and, therefore, it belongs to a more abstract idea of a social institution.\textsuperscript{134}
\end{quote}

In the case of Japanese Dalian, the technical standard set by the electric streetcar was productive in constructing the ways one imagined and negotiated the space of the city. It institutionalized the way one traveled between home, work, leisure, and other activities in the city. As a powerful social institution, the streetcar system left significant imprint not only on the form of the city, but also the ways its residents interacted with one another and the urban landscape.

\textsuperscript{133} Ibid., 212.
\textsuperscript{134} Ibid., 212.
Conclusion

The 20th century sees a resurgence of the streetcar, particularly in North America. While many streetcar systems in cities in continental Europe and Asia continued to operate from their inception in the early 20th century into the present time, this is not the case in North America. The growth in automobile ownership in the post-war years and the prevalence of other public transportation systems such as subway and buses replaced the streetcar in many urban centers. Albeit a technology from the past, the environmental and other benefits of the streetcar give it a new lease of life in the 20th century. In North American urban centers such as Phoenix, Arizona and Minneapolis, Minnesota, streetcars are being brought back as an environmentally sustainable form of public transportation. Some streetcar systems aimed at promoting pedestrian-friendliness in the downtown cores of cities, with the added benefit of reducing the number of motor traffic. For example, the streetcar system of Tucson, Arizona, “Sun Link”, which opened in July 2014, connects “five of Tucson’s unique districts” including downtown, university campus, and commercial areas.135 Besides playing an important role in promoting the walkability of urban centers, another streetcar category aims at historical preservation and attracting tourists. Heritage streetcar lines such as the Old Pueblo Trolley, which existed in downtown Tucson from 1993 until the start of the construction of new streetcar in 2011, operated with restored historic streetcars from North America, Europe, and Japan.136 Meanwhile, some continuously operating streetcar systems have been updating their fleet to meet the demands of modern public

transportation. For instance, the new streetcars in Toronto, Canada feature a low-platform and open concept design for wheelchair and bicycle accessibility.\textsuperscript{137}

Dalian’s streetcar system as it exists in the 20\textsuperscript{th} century represents all the characteristics mentioned above. While many streetcars in Chinese cities ceased to exist, the Dalian system, albeit reduced in scale, survived to become one of the handful continuously operation streetcars in Asia. The systematic replacement of Dalian’s streetcar system by bus lines reduced the number of streetcar lines from 11 before the war to 3 in 1977.\textsuperscript{138} Currently, 2 lines are in operation.\textsuperscript{139} The present system deliberately preserved 16 “Model 3000” streetcars, built in Japan between 1935 and 1938.\textsuperscript{140} These vintage streetcars served as nostalgic memorabilia for local residents and visitors alike, and have become an icon of the urban landscape of Dalian. However, such appropriation of history is an idealized and selective one. The past as represented by these heritage streetcars is a romanticization the days forgone – while disregarding colonialism’s violence, such as the segregation policy for Chinese laborer passengers. The phenomenon of restoring historic streetcars to serve as a symbol of a city in Dalian and beyond warrants further research.

Dalian’s streetcar system has been updated with new streetcar rolling stocks that meet the demands of modern public transportation. Modern, low-platform streetcars have been introduced


\textsuperscript{140} 王春燕, “大连有轨电车摇过的百年.”
since the early 2000s. Manufactured locally by the Dalian Tram Works, these streetcars operate alongside the heritage fleet and the various models manufactured during the PRC era. The newly built streetcars are designed to meet accessibility standards that are on par with their European counterparts. On a larger scale, Dalian’s streetcar system is part of the city’s current rail transit development plan, which also includes Light Rail Transit (LRT) and the Metro system. These three rail systems, all run on electrical power, are being hailed as zero-emission urban transportation solutions fit for sustainability requirements. With a promising future, it is perhaps high time that we study the interactive impacts of rail transit and urban form in the contemporary context. The historical account of Dalian streetcar system is perhaps useful in providing insights not only on the ways public transportation infrastructure connect people and places, but also divide, zone, and reinforce ideologies of urban space formation.

During the course of research and writing, I found it particularly difficult to locate primary materials written in Chinese from the period of the planning, construction, and operation of Dalian’s streetcar system before the end of the Second World War. Most of the written materials available from that time were in Japanese or English, functioning as propaganda material to glorify the achievement of the Japanese Empire. This bias in the source of materials was problematic for understanding Dalian’s streetcar system comprehensively and critically. However, by juxtaposing the route of the streetcar system with descriptions of the different areas of the city gleaned from other sources, I was able to re-create a more accurate picture of the

143 Ibid.
relationship between the streetcar and the city with some success. However, much is left to be discovered beyond the scope of the current research. For example, what was it like to be commuting on a crowded “labor-only’ streetcar during rush hours? What did the Chinese laborer have to say about their limited access to the streetcar, and thus restricted movement in the city? Further research is needed to reconstruct a more comprehensive working class history of Dalian in the first half of the 20th century, where streetcars were one of the engines of transforming migrant laborers into modern industrial workers. The Dalian Municipal Archives, Dalian Library, and Library of the Dalian University of Technology contain many invaluable publications in both Chinese and Japanese languages from the pre-PRC era, including local newspapers. These materials were not available online or overseas when I carried out my research. Thus visits to these local institutions would certainly enrich the primary sources available, particularly accounts of the streetcar system and the city’s urban landscape by the Chinese population.

A major challenge in the writing process was the ways by which the extent of the streetcar system and its relationship to the city were to be described and represented. In the introductory chapter, I brought up the Benjaminian concept of the montage, being put in practice in the writings of scholars such as Susan Buck-Morss and Allan Pred. While intellectually stimulating, I found myself having difficulties with such undertaking. In an attempt to adopt their methodology in my own writing, I struggled to try to build a somewhat coherent whole with all the fragments of information: details of the system, routes, technology, rider’s accounts, pictures, etc. In the end, I opted to narrate the streetcar system in a more conventional fashion, hoping to give readers a clearer picture of the system and its geographical relationship with the city. Although a line by line account of the streetcar routes and the areas of the city each covered was the main method of narration, the intersection of many of the lines resulted in more of a network
rather than linear description. With more research and planning, and a better understanding of Benjamin’s methodology, the montage could perhaps be a productive strategy in future projects of a similar kind.
Bibliography


