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The Muscle-Powered Empire  
Organic Transport in Japan and Its Colonies, 1850 – 1930

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Youjia Li

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## DISSERTATION ABSTRACT

This dissertation investigates the muscle-powered transport technologies that pervaded the Japanese empire. It examines the production, adoption, evolution, and decline of draft animals, rickshaws, human-powered railways, and push-car railways in Japan and colonial Taiwan, 1850-1930. Invented in Tokyo in 1870, rickshaws proliferated across Asia and became a symbol of modern metropolises such as Hong Kong, Singapore, Shanghai, and Beijing. The less-known human-powered railways prevailed in localities across Japan and colonial Taiwan in 1895. This dissertation treats these transportation technologies as globalized commodities. It demonstrates how small businesses – family workshops, local/regional enterprises – made these organically driven technologies global, but in specific local contexts.

*The Muscle-powered Empire* provides a transnational history of East Asia that contributes to debates in global/technology history, modern Japanese history, colonial modernity, business history, and spatio-environmental history. It focuses on the modernizing role of metabolic labors and “lively capital.” It thus challenges a conventional narrative in global history that marked energy transition as the divider between early modern and modern periods. Secondly, it focuses on small-time entrepreneurs’ efforts in Japan and colonial Taiwan and their contested relationships with the colonial government. In this way, it reorients the history of how the Japanese Empire projected economic power in global markets and interrogates the comparative framework of “colonial modernity.” Finally, it contributes to a burgeoning literature on spatio-environmental history by arguing that the evolution of the human-powered transport

industry created unique spatiality and new perceptions of time, and, eventually, modern, regional identities.

This project draws on published and unpublished corporate and business archives, local gazetteers, autobiographies, criminal records, newspapers, and geographical data analysis. It explores how small-time entrepreneurs and businesses shaped global transformations across national and natural borders. Doing so also unveils the social, environmental, and human costs in an age marked by “progress.” Overall, this dissertation argues that modernization, infrastructure upgrades, and empire-building are not always about expanding the scale of advanced technology, either by state-led or capital-intensive initiatives. Sometimes organic forms of technology, subtle refinement, and smaller businesses’ efforts are equally crucial in defining the nature of modernity and colonialism.

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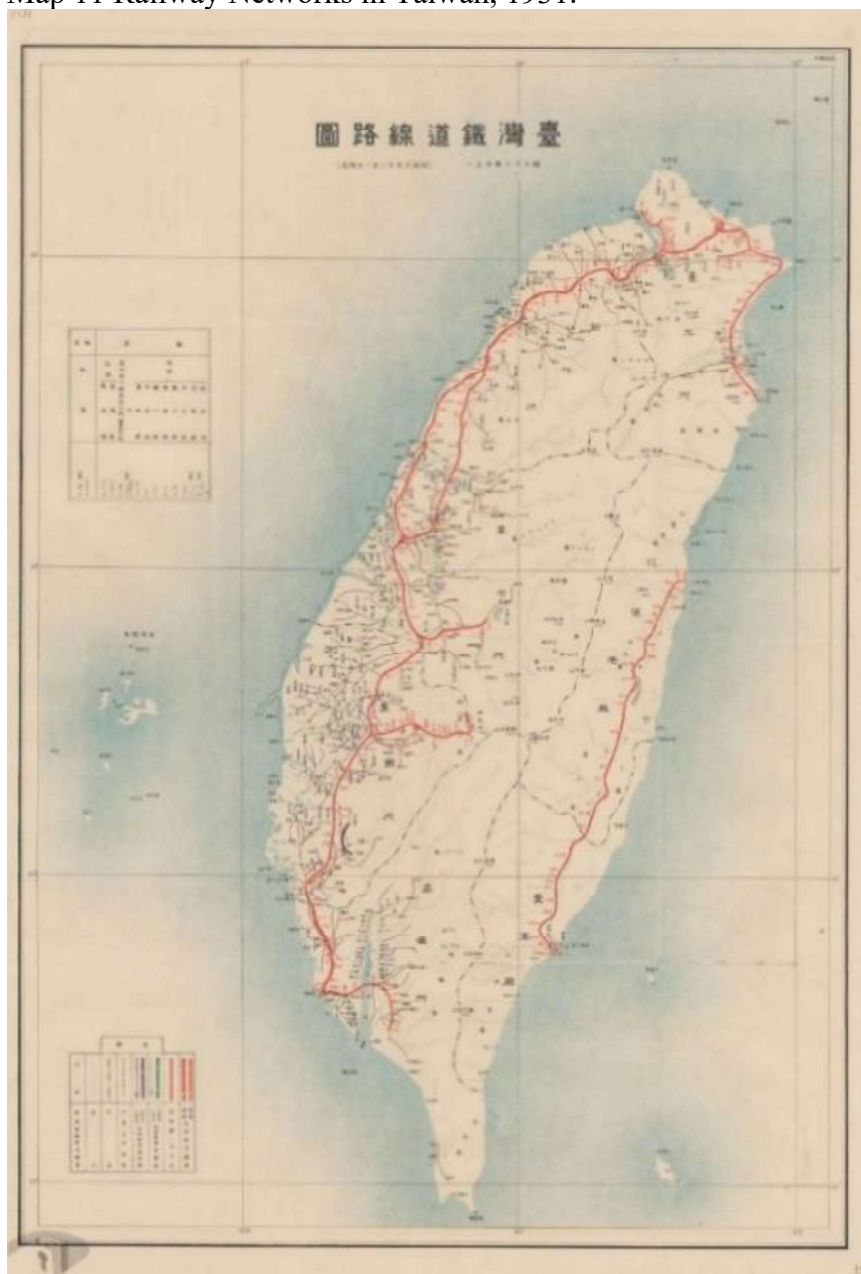
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## INTRODUCTION

### The Puzzle

In 1899, the last year of the 19th century and thirty-two years into the Meiji era, Japan's treaty revision efforts finally made it the first Asian state to enjoy equal international legal rights with the West. The "mixed residence" came into effect on the first day of the year. It meant that all foreigners were allowed to reside, travel, and trade outside of the designated settlements in exchange for the abolition of foreign extraterritoriality. Now, everyday life in Japan would become open to the world, and Japan had to prove its civility. Among the most visible and conspicuous changes for ordinary Japanese – and the most discussed topics in public media – was transportation. In March, *Yomiuri Shinbun* reported the triumph of Japanese-made rickshaws in the Singapore market, contrasting it with the decline in horsecars on its streets.<sup>1</sup> This success in rickshaw export was followed by the Japanese House of Representatives' decision to honor the "inventors of the rickshaws" the ensuing month. This was 28 years after rickshaws were invented, and only one of three inventors was still alive, but the state had finally recognized the inventors' "remarkable contribution in introducing the utility of this novel transportation, which enjoys prosperity today and is exported to the whole world."<sup>2</sup>

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<sup>1</sup> "Kaigai Ni Okeru Nihon Jinrikisha Singapore de Kyūzō 海外における日本人力車 シンガポールで急増、馬車は減少," *Yomiuri Shinbun*, March 27, 1899.

<sup>2</sup> "Jinrikisha No Hatsumeisha Reiraku o Kimekomu -- Onkyū Kafu o Gikai Ni Kengi Sen Tosu 人力車の発明者零落を極む一恩給下付を議会に建議せんとす," *Hōchi Shinbun 報知新聞*, January 6, 1896; "Jinrikisha Sōseisha

The rickshaw was not the only human-powered mode of transportation in the Japanese empire. In May, three ordinary men from Kanamachi chō – on Tokyo’s northeastern outskirts – crossed the city on an inspection trip. Their destination was Japan’s first human-powered railway at the Atami-Odawara hot springs resort, which had then been running for almost five years. The human-powered railway was a four-wheel carriage operated on narrow-gauge trackage. One or two laborers would push or drag the carriage along the tracks. Steel tracks were invented in the mid-1850s and gained momentum globally in the late nineteenth century. The human-powered railway operated like steam-powered railways, with stations, train schedules, and even various passenger classes. With the information collected from the Atami trip, these three men from Kanamachi-chō, along with their neighbors, planned to build their own neighborhood human-powered railway. Within the next few years, several human-powered railways would be operating in small localities across Japan but also across the ocean in Taiwan – Japan’s new colony. 1899 also marked the construction of a North-South Trunk Railway in Taiwan after a lengthy discussion of colonial strategy. This trunk rail line was designed to replace the military push-car railway, which served Japan’s military conquest over Taiwan in 1895. However, the railway construction opened new opportunities for the private sector – Japanese and Taiwanese businessmen and entrepreneurs alike – to construct their own forms of railways to connect to the emerging railway network, especially in places beyond the limits of state colonial plans. Here, in

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Jyushō 人力車創製者受賞,” *Tokyo Nichinichi Shinbun* 東京日日新聞, April 1, 1899; “Jinrikisha Hatsumeijin Kinenhi 人力車發明人紀念碑,” *Nihon Shinbun* 日本新聞, July 29, 1899.

Japan's first colony, a golden age of at least three decades of private human-powered railways would begin.<sup>3</sup>

The ubiquitous deployment of animate power in new modes of transportation stimulated concerns over the nature of animality and labor. In August 1899, a Christian scholar, Hiroi Tatsutarō, published a critique in *Taiyo*, entitled “Who Would Shed Tears for Cows and Horses?”<sup>4</sup> The article sparked Japan's first anti-animal cruelty movement. It also stimulated a series of legislation and regulations on draft animal management, which impacted the development of the horse-powered omnibus and the horse-drawn streetcar, which had been running since 1882. In November, Yokoyama Gennosuke (横山源之助) published his renowned investigative report, *Society of the Lower Classes of Japan*. Growing concerns over the poor urban laborers – rickshaw pullers as the most representative group – questioned the distinction between humans and animals. However, it would be another four years before Tokyo's first electric tramway would hit the road. However, even then, the rickshaws and the human-powered railways would still be running on the streets of both cities and hinterland throughout the rising Japanese empire.

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<sup>3</sup> The push-car railway was a modern invention. On each corner of the platform was a pole for one or two laborers to propel it forward. Sometimes there would be someone (e.g. a ferryman) who would stand on the platform and paddle the cart with a long pole as if it were a boat. It transported passengers as much as cargo, usually with a wooden box functioning as the passenger bench, if needed. All of these seemingly rudimentary mechanisms were operating on regular steel tracks, a mid-1850s invention that was just gaining momentum globally in the late nineteenth century.

<sup>4</sup> Hiroi Tatsutarō 広井辰太郎, “Dareka Gyūma No Tameni Namida Wo Sosogu Mono Zo 誰か牛馬のために涙をそそぐ者ぞ,” *Taiyō 太陽* 5, no. 17, 18 (1899).

What happened in 1899 showcases that the turn of the century witnessed a transformation in the human-powered and animal-powered transportation industries. The turn of the 19<sup>th</sup> to 20<sup>th</sup> century was an age of “acceleration of change.”<sup>5</sup> Widespread electrification, the development of machine manufacturing, and the construction of railroad networks constituted what historians have called the “second industrial revolution.”<sup>6</sup> The adoption of new inanimate energy – fossil fuels and electricity, generated by fossil fuels, gasoline, and petroleum – became a defining feature that enabled industrial breakthroughs. Nevertheless, at the same time, oxcarts, rickshaws, human-powered railways, and horse-drawn streetcars were all invented and improved to solve problems in the rapidly expanding metropole. Rickshaws enjoyed a golden age from the 1870s to the 1880s, thrived as a global export, and projected Japan’s technological power throughout the Southeast Asian market. The horse-drawn railway generated a new relationship between humans and animals in the built environment, especially in urban space. Human-powered railway companies emerged in Japan and Colonial Taiwan, adopted modern shareholding structures, and helped recreate small regions. The entrepreneurs devoted to developing new energy enterprises were also investing in the organic power transportation business.

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<sup>5</sup> Daniel R Headrick, *Technology: A World History* (La Vergne, TN: Oxford University Press, 2010), 111. Headrick marks 1869-1939 as the age of acceleration of change and attributes the change to two fundamental factors: the “access to cheaper, more abundant, and more useful forms of energy,” and “an exponential increase in the interactions among scientists, engineers, technicians, and businesspeople that led not only to new technologies but – for the first time – to means of creating inventions on demand.”

<sup>6</sup> Jürgen Osterhammel, *The Transformation of the World: A Global History of the Nineteenth Century*, 2014.

The use of human bodies as driving forces for human-powered public transportation was a deliberate choice by entrepreneurs, a survival strategy for laborers, and an administrative challenge that forced governments to react and adapt. In short, this organically driven transportation was integral to the modern metropolis in Asia, economically, socially, and culturally.

This dissertation centers on the organic technologies that powered East Asia's imperial modernity. It focuses on muscle-powered transportation technologies in Japan and its colonies between 1850 and 1930, concentrating on draft animals, rickshaws, and human-powered railways. It demonstrates their unexpected proliferation, the scale of application, and the surprising longevity of organically powered transport technology as it shaped East Asian modernity. Along the way, it also describes how "living capital" drove technological innovation and helped reconceptualize space. This dissertation concludes that modernization and the transformation of national infrastructure are not always about expanding the scale of advanced technology. Sometimes organic forms of technology, and their subtle refinement, are equally crucial in defining the nature of modernity and colonialism.

### **The Global History of Technology and The Anthropocene**

By focusing on how organically driven transportation shaped East Asian modernity, I propose reconceptualizing the periodization of a global history that has conventionally been marked by changes in energy sources. The deployment of inanimate fuel was a defining feature

of modern industrial development in the conventional narrative of global history.<sup>7</sup> This narrative, pioneered by the California School and its revisionist critiques, argues that the “ghost acres” of the colonies and the use of fossil energy, followed by technological improvements in coal extraction, sustained industrial development.<sup>8</sup> In contrast, major early modern societies primarily relied on an “organic economy.” The growth of these organic economies was restrained primarily by the lack of resources (China), the ecological pressure to innovate (India), or alternative fuel solutions (such as Japan’s forest management to improve energy efficiency).<sup>9</sup> In other words, the deployment of fossil fuels determined whether societies could transcend the Malthusian constraints faced by the old “organic economy” and its energy regime of plant, human, and animal power. Hence, this led to the “Great Divergence.”<sup>10</sup> As Fredrik Jonsson states, “the Industrial Revolution was above all an ‘energy revolution.’”<sup>11</sup> In this narrative,

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<sup>7</sup> Kenneth Pomeranz, *The Great Divergence: China, Europe, and the Making of the Modern World Economy* (Princeton, N.J.: Princeton University Press, 2000); Kenneth Pomeranz, “Introduction: World History and Environmental History,” in *The Environment and World History*, ed. Edmund Burke and Kenneth Pomeranz (Berkeley: University of California Press, 2009), 3–32; Jack A. Goldstone, “The Problem of the ‘Early Modern’ World,” *Journal of the Economic and Social History of the Orient* 41, no. 3 (January 1, 1998): 249–84; Jack A. Goldstone, “Efflorescences and Economic Growth in World History: Rethinking the ‘Rise of the West’ and the Industrial Revolution,” *Journal of World History* 13, no. 2 (2002): 323–89; Jack A. Goldstone, “Gender, Work, and Culture: Why the Industrial Revolution Came Early to England but Late to China,” *Sociological Perspectives* 39, no. 1 (1996): 1–21; Robert Marks, *The Origins of the Modern World: A Global and Environmental Narrative from the Fifteenth to the Twenty-First Century*, 2020.

<sup>8</sup> E. A. Wrigley, *Energy and the English Industrial Revolution* (Cambridge; Madrid: Cambridge University Press, 2010).

<sup>9</sup> Prasannan Parthasarathi, *Why Europe Grew Rich and Asia Did Not: Global Economic Divergence, 1600-1850* (Cambridge: Cambridge University Press, 2014).

<sup>10</sup> John Robert McNeill and Peter Engelke, *The Great Acceleration: An Environmental History of the Anthropocene Since 1945*, 2016; Wrigley, *Energy and the English Industrial Revolution*.

<sup>11</sup> Fredrik Albritton Jonsson, “The Industrial Revolution in the Anthropocene\*,” *The Journal of Modern History* 84, no. 3 (2012): 679–96.



“modernity” has been associated with non-biological fuels, whereas “organic” has been used to demark pre-industrial societies across the world.

The emphasis on energy transition spawned concern over the Anthropocene, or “the age of man,” defined as an epoch in which humans have influenced the earth’s ecosystem. The atmospheric chemist Paul Crutzen originally dated the beginning of the Anthropocene to James Watt’s steam engine patent in 1784.<sup>12</sup> Historian John McNeill pinned the twentieth century as the first time in human history that humans altered the earth’s ecosystem with unprecedented scale, intensity, and speed.<sup>13</sup> Either way, there was a consensus that the human-dominated epoch was “bound up with the revolutionary shift towards large-scale combustion of fossil fuels.”<sup>14</sup> In this sense, the European “fossil capitalism” marked the beginning of the Anthropocene because it stimulated industrialization, rapid economic and population growth, urbanization, and consumerism, which transpired around the world and made fundamental change to both the ecosystem and humanity.<sup>15</sup>

I do not reject the profound transformative effect of energy evolution or the existence of the Anthropocene. On the contrary, I conceptualize a new possibility of the Anthropocene in the realm where critical transformation seems least likely: the deployment of bodily energy. I argue

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<sup>12</sup> Paul J Crutzen, “Geology of Mankind,” *Nature* 415, no. 6867 (2002): 23.

<sup>13</sup> John Robert McNeill, *Something New under the Sun: An Environmental History of the Twentieth-Century World* (New York: W.W. Norton & Company, 2000), 3.

<sup>14</sup> Elizabeth Chatterjee, “The Asian Anthropocene: Electricity and Fossil Developmentalism,” *The Journal of Asian Studies* 79, no. 1 (2020): 3–24; Alan Mikhail, “Enlightenment Anthropocene,” *Eighteenth-Century Studies* 49, no. 2 (2016): 211–31.

<sup>15</sup> Chatterjee, “The Asian Anthropocene”; Mikhail, “Enlightenment Anthropocene”; Julia Adeney Thomas, Mark Williams, and J. A Zalasiewicz, “The Anthropos of the Anthropocene,” in *The Anthropocene: A Multidisciplinary Approach*, 2020.

that the organic forms of transport were not only coeval but also essential in the making of the modern era. They were inherently a development, even a revolution in some instances, rather than a simple continuity from the previously constrained economic regime.

By examining the modern manifestation of organic transportation, this study contributes to understanding the “Great Convergence,” i.e., developing countries’ catches up process following the Great Divergence. Recent historians have pointed out that the “Great Convergence” and “Great Divergence” were two phases of the same global modernization.<sup>16</sup> This dissertation demonstrates that the deployment of bodily energy in modern transportation was not independent of the energy evolution. On the country, it was an immediate response to this dynamic, and at the same time, improved technical solutions to the “Convergence.” Victor Seow suggests that factoring fuel efficiency into the examination of transport and mobility explicates how “fuel anxieties” (in his case, coal) “shaped the mechanics of movement and reflected the almost unwavering faith in scientific and technological solutions that proved such characteristics of those modern times.”<sup>17</sup> The exploitation of human power in new technical forms of transportation – rickshaw and push-car railways alike – revealed similar fuel anxiety about limits on technology, finance, and resources. Indeed, officials, businessmen, and technicians were cognizant of the limitations of these organically driven modes of transport.

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<sup>16</sup> Jack A. Goldstone, “Great Divergence and Great Convergence in a Global Perspective,” *Social Evolution and History* 15, no. 2 (2016): 194–200; L.E. Grinin and A.V. Korotayev, “Political Development of the World System: A Formal Quantitative Analysis,” in *History & Mathematics: Historical Dynamics and Development of Complex Societies*, ed. Peter Turchin and Rossiiskii gosudarstvennyi gumanitarnyi universitet, 2006, 63–114.

<sup>17</sup> Victor Seow, “Fuels and Flows: Rethinking Histories of Transport and Mobility through Energy,” *Transfers* 4, no. 3 (2014): 112–16.

Moreover, once in place, these bodily-driven modern transportation modes created a path dependency that forced all involving parties to adapt – although not necessarily with utmost efficiency. Instead of replacing these technologies, entrepreneurs and officials adopted incremental improvements and adjusted regulations to solve technical problems that had caused accidents and inefficiency.

To unravel this dynamic, this dissertation questions the inexorable technological process and its relationship with older forms of energy, namely bodily labor. Some scholars see the two factors as antithetical. They highlight how the private, profit-maximizing fossil capitalist class adopted fossil energy to depress the disruptive power of labor.<sup>18</sup> Others recount how physical energy contributed to the emergence of the Anthropocene in an earlier stage. For example, some scholars have argued that the exploitation of slave labor in the American colonies contributed to capital accumulation, leading to the rise of fossil capitalism.<sup>19</sup> My approach takes another direction. It argues that the fossil fuel economy also amplified the demand for bodily energy. This approach builds upon Joel Tarr and Clay McShane’s observation in American cities. They demonstrate how horses were transformed into “living machines” and integrated into the industrial landscape in American urban spaces.<sup>20</sup> I extend these insights to the Asian metropolis.

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<sup>18</sup> Ian Angus, *Facing the Anthropocene: Fossil Capitalism and the Crisis of the Earth System* (New York: Monthly Review Press, 2016); Andreas Malm, *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming* (London; New York: Verso, 2017).

<sup>19</sup> Donna Haraway et al., “Anthropologists Are Talking - About the Anthropocene,” *Ethnos* 81, no. 3 (2016): 535–64; Christian Parenti and Jason W Moore, *Anthropocene or Capitalocene?: Nature, History, and the Crisis of Capitalism*, 2016.

<sup>20</sup> Clay McShane and Joel Tarr, *The Horse in the City: Living Machines in the Nineteenth Century*. (Baltimore: Johns Hopkins University Press, 2011).

This dissertation reveals how organic transportation – both human and animal-driven – transformed the means of exploiting bodies. In this process, the exploitation of labor, the accumulation of capital, and the penetration of modern capitalism transpired not in sequence but simultaneously in the Japanese Empire. Moreover, when affective bodies became integral to the expanding metropolis and the rising Empire, this also stimulated new debates on the nature of humanity, animality, and above all, how to forge the best body of laborers with national spirits.

Along the same lines, I scrutinize the specific contexts of technology in use and look beyond technologies. Historians of global technology have long challenged the teleological argument of technological determinism advocated by the classic views of Marxism and the Enlightenment.<sup>21</sup> The recent global history of technologies has wrestled with this tidy timeline. In *The Shock of the Old*, David Edgerton challenges the innovation-based timelines and proposes conceptualizing the use-centered history of technologies. In this sense, technologies appear, disappear and reappear in specific temporal and spatial contexts. In line with Edgerton, this project examines the diffusion of specific technologies in use. It argues that the spread of technologies did not rely solely on how advanced the mechanical designs were, but also other factors in use, such as stylishness, cost, convenience, and even employment prospects.

This study's findings demonstrate that "fossil capitalism" coexisted with cases in which humans and animals became the machine, or parts of the machine, and muscles, not coal,

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<sup>21</sup> Leo Marx and Merritt Roe Smith, *Does Technology Drive History?: The Dilemma of Technological Determinism* (Cambridge, Mass: MIT Press, 2011).

powered new technology, in different scales and forms in Asia. The development of the fossil economy and the colonial experience in Asia differed from the Atlantic world experience. These organically driven technologies were indispensable in shaping urbanization and modernization in Asia. The existing scholarship on Anthropocene and technological history tends to extrapolate the European experience and overlook Asia. Atlantic colonialism and the Industrial Revolution stimulated a planetary-scale revolution in the energy transition. As Elizabeth Chatterjee has argued, in this narrative, the Anthropocene unfolds as a “Westernization” story and replicates a “Eurocentric master narrative of modernity, albeit newly valorizing the supposed innocence of the non-West.”<sup>22</sup> Moreover, as Richard Bulliet contends, the rise of the rickshaw was as crucial to the transportation revolution as railroads and automobiles. Yet, it was a transformative technology that was entirely non-European. As such, it challenges how invention and the diffusion of technology emerged in the modern era.<sup>23</sup> This dissertation is an endeavor to uncover more of this story.

Finally, the scrutiny over organic modernity helps to reimagine the role of humans, especially in relation to *nature*. The Anthropocene debate inspires historians to rethink the role of humans and non-humans in both ecosystems and humanity. Humans are not just *in nature* or *interacting with nature* but function as a natural planetary force.<sup>24</sup> The pioneering environmental

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<sup>22</sup> Chatterjee, “The Asian Anthropocene.”

<sup>23</sup> Richard W Bulliet, *The Wheel: Inventions & Reinventions* (New York: Columbia University Press, 2016).

<sup>24</sup> Recent scholarship argues that an important factor distinguishing Anthropocene history from other types of history is that it wrestles with “the human” as a planetary force, and considers what that means for attempts to tell moral and political stories. Similarly, Chakrabarty encapsulates the human conditions as “simultaneously both human and geological.” Julia Adeney Thomas, Mark Williams, and J. A Zalasiewicz, *The Anthropocene: A*

historian William Cronon similarly suggests that “the boundary between human and nonhuman, natural and unnatural, is profoundly problematic.”<sup>25</sup> Although they employ different scales, both approaches challenge the human-nature binary. I do not strive to reposition humans at the ecological/geological level. However, this dissertation joins the attempt to interrogate the human-nature relationship where this binary separation seems most apparent – in urban space. The urban space was not the site of energy extraction but an active site of energy usage. In this context, humans and animals were juxtaposed as driving forces and became even more intertwined, both physically and symbolically. Cronon’s classic *Nature’s Metropolis* offers a model to examine the city’s place in nature. He demonstrates that it is problematic to view “city and country [as two] separate and opposing world... for they can only exist in each other’s presence”<sup>26</sup> Recent work by Ian Miller further interrogates the fuzzy line between humans and nature in the particular space of the imperial zoo.<sup>27</sup> Both works inspire the present dissertation. However, this dissertation further straddles the line between humans and nature in the most built environment: the public streets of Edo/Tokyo and colonial Taiwan.

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*Multidisciplinary Approach*, 2020, 132-133; Dipesh Chakrabarty, “Planetary Crises and the Difficulty of Being Modern,” *Millennium: Journal of International Studies* 46, no. 3 (2018): 259–82.

<sup>25</sup> William Cronon, *Nature’s Metropolis: Chicago and the Great West* (New York: W.W. Norton, 1997), xix.

<sup>26</sup> Cronon, 17–18.

<sup>27</sup> Ian Jared Miller, *Nature of the Beasts: Empire and Exhibition at the Tokyo Imperial Zoo* (Place of publication not identified: University of California Press, 2021), 3, 27. Yoan’s theory on human-animal distinction and categorical separation of people from animals.

## A Spatial Approach

The relationship between humans and nature, society, and the environment inevitably leads to another debate on “space.” I conceptualize space not only as a fixed unit but also through the flows of people and cargo, which were branded with regional identities of capital, landscapes, and the people themselves.

Space is neither a void nor a backdrop, setting, or context of another event. Both Henri Lefebvre and Michael Foucault argue that space is a material manifestation of social relations. The physical organization of everyday life reveals itself as spatial practices, upon which different levels of social relations can be observed, described, and analyzed.<sup>28</sup> As Foucault contends, the problem of living space or human site is “knowing what relations of propinquity, what type of storage, circulation, marking, and classification of human elements should be adopted in a given situation in order to achieve a given end.” He continues, “our epoch is one in which space takes for us the forms of relations among sites.”<sup>29</sup>

In this dissertation, I build upon this conception that transportation offers a particularly good site to observe social relations due to its inherent mobility. These organic modes of transportation were essential elements in the making of places in modern Asian places. Space-making is a multifaceted process. It includes identifying, designating, designing, building, using, interpreting, and remembering places, all of which constituted the story of human-powered transportation. Most sociological literature has examined the making of place along three

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<sup>28</sup> Henri Lefebvre, *The Production of Space* (Oxford, OX, UK; Cambridge, Mass., USA: Blackwell, 1991), 26–39.

<sup>29</sup> Michel Foucault and Jay Miskowic, “Of Other Spaces,” *Diacritics* 16, no. 1 (1986): 23.

dimensions: upstream forces (power and wealth) that drive the creation of place, professional practices of place-experts (such as architects, urban officials), and the perceptions and attributions by ordinary people who experience places (and act on those understandings).<sup>30</sup>

The Asian experience of human-powered transportation touches upon all three dimensions, but it also provides an alternative approach. Small-time, ordinary local agents were not only experiencing and reacting to the place but also shaping, designing, and transforming it. Transportation on trackage also complicates the place-making process. Foucault singles out trains as sites of at least three levels of relations: “something through which one goes, it is also something by means of which one can go from one point to another, and then it is also something that goes by.”<sup>31</sup> I borrow three threads and extend the theoretical discussion on the role of these human-powered modes of transportation in the place-making process.

As “something through which one goes,” modern organic transportation offers a moving site of contact, where all walks of society converged on an unprecedented scale inside a variety of carriages – rickshaws, push-cars, and horsecars alike. Due to the nature of the design of these modes of transport, the contrast between animal and human labor, between various classes of people (well-dressed gentleman and rickshaw pullers), and even a gendered contrast (women in beautiful traditional garments and half-naked laborers) offers a series of blatant contrasts in a moving, public but intimate space. It offers an ideal site to examine why some social relations became problematic and contested. In this sense, space is also a performative site. The public

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<sup>30</sup> Thomas F Gieryn, “A Space for Place in Sociology,” *Annual Review of Sociology* 26 (2000): 463–96.

<sup>31</sup> Gieryn.



display of these social relations put the transport modes under the “gaze” of world imperial powers. Many critiques of rickshaws, including animal abuse, must be understood in this context.

As “something by means of which one can go from one point to another,” organic transport helped create a unique spatiality, a different perception of time and space. In this sense, this study also resonates with Yi-Fu Tuan’s classic theory on human geography, or humanized space, which emphasizes human sensation and perception on changing spatial relationships.<sup>32</sup> The speed of rickshaws and push-car railways was between the slow-moving draft animals and the dashing trains. The rickshaw was a convenient option for navigating the expanding cities. Its success in Japan and tropical urban centers in Southeast Asia reveals how it forged a new sense of calculation – what people would pay to mitigate trouble or travel time for a certain distance. Furthermore, organic transport also cleaved a different relationship between the landscape and the people – both drivers and passengers.<sup>33</sup> Push-car railways transgressed the “savage borders” in Taiwan and transformed the relationship between aboriginal communities and the imperial state, and between human beings and commoditized forests.

As “something that goes by,” organic modes of transport were technological creations enabled by a particular set of production relations. In the case of push-car railways – both in

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<sup>32</sup> Yi-Fu Tuan, *Space and Place: The Perspective of Experience* (Minneapolis: University of Minnesota Press, 2002). Tuan reminds us that one can only understand the meanings and importance of particular spaces and places by understanding how humans feel and think about these spaces and places. Tuan defines places as “centers of felt value” (p. 4) or humanized space, where unbounded space is transformed into place via the bonds humans forge with particular spaces by imprinting values and meanings upon them.

<sup>33</sup> Wolfgang Schivelbusch, *The Railway Journey: the Industrialization of Time and Space in the 19th Century* (Berkeley, Calif.: University of California Press, 1986).

Japan and colonial Taiwan – the demand for local transportation and limited local resources made narrow-gauge light railways inherently a local construction. Moreover, due to the railway’s capital-intensive nature, local elites had to adopt a shareholding structure, which in turn forced them to redefine their interest groups and mobilize local resources. As a result, new coalitions emerged. Therefore, the construction of organic transport engendered a new set of social relations that transcended designated borders, both political and natural. The human-powered railway created ascendent notions of region by changing connections between particular sites and provoking new forms of commercial activities, leisure recreation, and other infrastructures. In this sense, these organic technologies created new senses of region, place, and cultural identities, which then came to define the nature of modernity as concretized in daily lives.

This dissertation showcases how these changing social relations directly contributed to the construction of a local “region,” especially in the context of globalization. Doreen Massey’s paradigm of “the global construction of local place” is an inspiring point of departure. She argues that the character of a place is not only the product of what goes on within it. Instead, it also results from the juxtaposition and intermixing of its flows, relations, and connections that might span the world.<sup>34</sup> Regional differentiation, or the geographical distribution of economic activity in any given localities, results from evolving forms of division of labor and must be interrogated within both national and international contexts.<sup>35</sup> Doreen Massey’s case studies focus on the

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<sup>34</sup> Doreen B Massey, “The Responsibilities of Place,” *The Journal of the Local Economy Policy Unit* 19, no. 2 (2004): 97–101.

<sup>35</sup> Doreen B Massey, “In What Sense a Regional Problem,” in *Space, Place and Gender* (Hoboken: Wiley, 2013).

modern UK, during a time when modern globalization had come into being. I propose examining the construction of smaller Asian localities in the early stages of modern globalization.

As Paul Barclay argues, the dawn of the twentieth century witnessed the rise of high-velocity capitalism, “wherein national populations became dependent upon long-distance trade for daily existence.”<sup>36</sup> Modern local transportation networks comprised of human-powered railways and rickshaws completed the global circulation essential to this global economic structure. The region-making process went both ways. On the one hand, imperialism, colonialism, and capitalism forced regional/local elements to react and adapt by creating new transport demand and providing new spaces for innovation/invention. On the other hand, small-time local elites’ responses contributed to the spatial reconfiguration of the division of labor on a national and global level.

Another critical representation of space was, in abstract terms, that it was imagined and imbued with symbolic uses.<sup>37</sup> A flourishing English-language scholarship has explored the imaginative production of space, especially in terms of the construction of “famous places” in Japan. For example, Laura Nenzi, Marcia Yonemoto, and Robert Goree demonstrate how various discourses, such as mapping and travel guides, reconstructed geographical and social space in early modern Japan.<sup>38</sup> Meanwhile, a different spatial approach explores the tension between the

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<sup>36</sup> Ronald G Knapp, *China's Island Frontier: Studies in the Historical Geography of Taiwan* (Honolulu: University Press of Hawaii: Research Corp. of the University of Hawaii, 1980).

<sup>37</sup> Lefebvre, *The Production of Space*, 26–39, 82–83, 412–414.

<sup>38</sup> Marcia Yonemoto, “Nihonbashi, Edo’s Contested Center,” *East Asian History*, no. 17–18 (1999): 49–70; Marcia Yonemoto, *Mapping Early Modern Japan: Space, Place, and Culture in the Tokugawa Period (1603-1868)* (Berkeley: University of California, 2005); Laura Nenzi, *Excursions in Identity: Travel and the Intersection of Place, Gender, and Status in Edo Japan* (Honolulu: University of Hawai’i Press, 2008); Robert Goree, *Printing Landmarks: Popular Geography and Meisho Zue in Late Tokugawa Japan*, 2020.

types of space produced by political units and economic circuits. For example, Kären Wigen scrutinizes how flows of people and commodities, subject to the interaction of government policy and market forces, contributed to the production of an early modern region.<sup>39</sup> In other words, space is historically produced, and its configuration and meaning change, both physically and socially, over time. Building upon these two approaches, I focus on how certain regions' underlying socio-economic and spatial character enabled the production of a particular organic modern form of transport. It also analyzes the creation of famous places – from Takanawa, Kyobashi within Tokyo, to Atamai and Taishakuten on the outskirts of the metropole – and traces the changing cultural geography as shaped by flows by new modes of transport.

### **Japan's Modernization**

Organic transportation in Japan and colonial Taiwan has attracted little attention in English-language scholarship. In recent publications, only Dan Free has contributed a small section on organically driven railways. He recognizes that the lack of venture capital led these smaller and local efforts to develop local branches to trunk railway systems. He even mentions the existence of ox-tramway and dog-driven tramways. However, he approaches this transportation as “a source of bemusement and curiosity” to Western tourists, something with typical “Japanese ingenuity.” He only implies the possibility of treating these railways not as evidence of quaintness, but instead as an ingenious response to the contemporaneous light

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<sup>39</sup> Kären Wigen, *The Making of a Japanese Periphery, 1750-1920* (Berkeley, Calif.: University of California Press, 1995); Karen Wigen, *A Malleable Map: Geographies of Restoration in Central Japan, 1600-1912* (Berkeley and Los Angeles, California: University of California Press, 2010).

railway boom, but with limited resources. However, due to the limitations of the narrative, he did not analyze the specific contexts and concrete local efforts that enabled this mode of transport.<sup>40</sup>

English-language scholarship on Taiwan under Japanese colonial rule has focused on aboriginal areas in the mountains, the institutional and juridical construction of the Empire, and constructing a colonial identity among the colonized in general.<sup>41</sup> Few historians have studied how a transportation system altered Taiwan's geographical configuration, and Free's work focuses on state initiatives.<sup>42</sup> However, while using a different analytical framework, I am deeply in debt to Japanese and Taiwanese scholars' work on specific subject matters, especially Saito Toshihiko's work on rickshaws and Chen Jiahao's scholarship on the Taiwanese push-car railway industry.<sup>43</sup>

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<sup>40</sup> The ox-driven tramway and the dog-driven tramway were exceptional cases. The ox-driven tramway was located in Ashio, just west of Nikko, and the largest copper deposits in Japan. This line primarily transported the output from the mines to the railheads at Nikko. The dog driven railway was located in Shikoku. Due to a lack of primary sources and my focus on the comparative aspect of human-powered railways, in both Japan and colonial Taiwan, this dissertation focuses on the human-powered railways. Dan Free, *Early Japanese Railways, 1853-1914: Engineering Triumphs That Transformed Meiji-Era Japan* (Tokyo: Tuttle, 2008).

<sup>41</sup> Andrew D Morris, *Japanese Taiwan: Colonial Rule and Its Contested Legacy* (London ; New York: Bloomsbury Academic, 2015); Taisheng Wang, *Legal Reform in Taiwan Under Japanese Colonial Rule, 1895-1945: The Reception of Western Law* (Seattle: University of Washington Press, 2015); Ying Xiong, *Representing Empire. Japanese Colonial Literature in Taiwan and Manchuria*. (Leiden: Koninklijke Brill NV, 2015); Huiyu Cai, *Taiwan in Japan's Empire-Building: An Institutional Approach to Colonial Engineering* (New York: Routledge, 2009); Binghui Liao and Dewei Wang, *Taiwan under Japanese Colonial Rule, 1895-1945: History, Culture, Memory* (New York: Columbia University Press, 2006); Leo T. S Ching, *Becoming "Japanese": Colonial Taiwan and the Politics of Identity Formation* (Berkeley: University of California Press, 2001).

<sup>42</sup> Knapp, *China's Island Frontier*.

<sup>43</sup> Saitō Toshihiko 齊藤俊彦, *Jinrikisha no kenkyū 人力車の研究* (Tōkyō: Mikishobō, 2014); Chen Chia-Hao 陳家豪, *Jin Dai Taiwan Ren Zi Ben Yu Qi Ye Jing Ying: Yi Jiao Tong Ye Wei Tan Tao Zhong Xin (1895-1954) 近代台灣人資本與企業經營：以交通業為探討中心 1895-1954 = The Taiwanese Capital and Business Performance in Modern Period: Focusing on Private Transportation Industry, 1895-1954*, Chu ban (Tai bei shi: Zheng da chu ban she, 2018).

This dissertation pins down the development of human-powered transportation to Japanese petty entrepreneurs, colonial subjects, and impoverished laborers. In so doing, it offers another perspective on Japan's modernization process. Historians of Japanese technological modernization often focus on capital-intensive, science-based, or state-initiated industries – such as railroads, textiles, and the iron industry – to portray Japan's “catch-up” modernization efforts.<sup>44</sup> Indeed, government-led industrial policies, relationship banking, policy loans, and the conglomerates (*zaibatsu*) defined Japan's capitalistic development in the early twentieth century.

The aim of this dissertation is not to reduce these factors' crucial roles in modern development. Instead, it contributes to a body of scholarship that argues that small agents were as important as the bigger ones in Japan's economic development. As Japanese economic historians Nakamura Takafusa and Hashimoto Masanori have demonstrated, as late as the 1920s, it was the labor-intensive, traditional, and light industries – rather than the technologically and organizationally “Westernized” modern sectors – that drove the Japanese economy through its rapid modernizing process. Until the late 1920s, even the steel industries were dominated by small factories – many of which were too small to be profitable – until the Ministry of Commerce and Industry initiated an amalgamation plan.<sup>45</sup> Organic transportation enterprises paralleled this dynamic. These crude but influential efforts had even greater local significance to

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<sup>44</sup> Steven J Ericson, *The Sound of the Whistle: Railroads and the State in Meiji Japan* (Cambridge Mass.: Council on East Asian Studies, Harvard University, 1996); David G Wittner, *Technology and the Culture of Progress in Meiji Japan* (London; New York: Routledge, 2008); Morris Low, *Building a Modern Japan: Science, Technology, and Medicine in the Meiji Era and Beyond* (New York, NY: Palgrave Macmillan, 2005), <http://public.eblib.com/choice/publicfullrecord.aspx?p=307647>.

<sup>45</sup> Takafusa Nakamura and Kōnosuke Odaka, *The Economic History of Modern Japan, 1600-1990* (New York: Oxford University Press, 2003).

specific communities, families, and individuals. Stories of failure are just as revealing as those of success.

In this dissertation, I focus on how small-time entrepreneurs influenced the making of modern urban space in Asia. First, it traces the critical role of the masses in the Tokugawa period. As the samurai purveyor-based economy subsided to the burgeoning commoner economy, human-powered carts and oxcarts thrived based on the enlarging clientage of commoners in the Tokugawa period. The Meiji period witnessed rickshaws further prosper, both as a mode of transportation for the masses and as an employment option for the urban poor. It was small-time manufacturers – even family workshops – that promoted the rickshaw to the global market. Similarly, local businessmen chipped in funds and resources to connect small regions to the trunk railways and revive locale economies, which national projects would otherwise have left behind. Likewise, the local Taiwanese gentry in colonial Taiwan built light railway networks to negotiate with the colonial power to realize their local interests under various constraints.

With this dissertation, I also hope to shed light on women's role in the modernization story, although with acknowledged limitations. Recent scholarship, such as David Ambaras's *Japan's Imperial Underworlds*, has begun drawing scholarly attention to previously overlooked categories of people in making the imperial sphere, such as trafficked children and abducted women.<sup>46</sup> To date, little attention has been given to how women and children also interactively

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<sup>46</sup> David R Ambaras, *Japan's Imperial Underworlds: Intimate Encounters at the Borders of Empire* (Cambridge: Cambridge University Press, 2019).

shaped technological transformation, and the living environment, at a similar level. However, women played an indispensable role in the seemingly male-dominated transportation market. Wives supported their husbands in managing family rickshaw workshops, solving daily conflicts between workers, and even expanding sales channels on the global market. The imperial penetration into the previously peripheral frontier of the Taiwanese hinterland transformed the operation of families, as young Hakka girls in Taiwan frequently served as push-car drivers. Sometimes a whole family, regardless of gender or age, would be involved in selling their labor in the transportation market to alleviate pressure on the male head of the household. Their stories are hard to discern from the male-dominated archives, but they are as important.

### **Colonial Modernity**

Finally, the present study contributes to the debate on colonial modernity by recognizing the indivisibility between colonialism and modernization/industrial capitalism but at the same time denying a causal link between the two. In other words, modernity does not necessarily require colonialism, but both processes have been the simultaneous expression of capitalist expansion.<sup>47</sup> The underlying logic negates the existence of a sole “model” of modernization and colonialism (therefore, it also denies the “alternative modernity” theory, which still suggested a model of modernization in comparison to what could have been in colonized or semi-colonized countries). Ruth Rogaski has demonstrated that colonial improvement schemes – railways and

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<sup>47</sup> Tani E Barlow, *Formations of Colonial Modernity in East Asia* (Durham; London: Duke University Press, 1997). This book signifies the introduction of on the colonial modernity debate.



hygienic systems alike – were fundamentally both colonial *and* modernist.<sup>48</sup> As Tani Barlow points out, the challenge for East Asian historians was how to reconcile emerging East Asian emergent states as “one instance of a multiply (*sic*) colonized world, yet singular in its particular forms, strategies, ideologies and political practices.”<sup>49</sup> The core of this dissertation undertakes this task. The uneven development of organic transport in Japan and colonial Taiwan, and the subsequent diffusion to other Asian locales suggest an indigenous form of modernization.

As such, it is essential to view the history of organic transport against the backdrop of “a network of multiple overlapping imperialisms” – as Robert Bickers and Christian Henrios call it.<sup>50</sup> Japan was the sole colonial power in East Asia and a state struggling under global imperialism and capitalism. Yuko Kikuchi uses the term “refraction” of modernity to refer to the “transferable nature of the ideas and practices of Euro-American colonialism and, in particular, Japanese colonialism, which itself had adopted and refracted those of Western colonialism.”<sup>51</sup> In other words, although not directly colonized by the Western powers, Japan was under constant imperial pressure. Due to the “gaze” from Western colonial powers, most Japanese elites internalized their anxiety as comparisons of Japan’s progress to Western standards. The West served as a powerful “other” that stimulated the reshaping of the Japanese self, and Japan, in

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<sup>48</sup> Ruth Rogaski, *Hygienic Modernity Meanings of Health and Disease in Treaty-Port China* (Berkeley: University of California Press, 2004).

<sup>49</sup> Tani E Barlow, “Debates Over Colonial Modernity in East Asia and Another Alternative,” *Cultural Studies* 26, no. 5 (2012): 624.

<sup>50</sup> Robert A Bickers and Christian Henriot, *New Frontiers: Imperialism’s New Communities in East Asia, 1842-1953* (Manchester; New York: Manchester University Press Distributed exclusively in the USA by St. Martin’s Press, 2000), 2.

<sup>51</sup> Yūko Kikuchi, “Introduction,” in *Refracted Modernity: Visual Culture and Identity in Colonial Taiwan* (Honolulu: University of Hawaii Press, 2007), 9.

turn, became picture itself as a critical observer/gazer of the rest of Asia. In this context, Japan's treaty revision efforts translated into the daily management of public behaviors, and transportation was within the most conspicuous realm. In particular, concerns over the deployment of bodily energy and the nature of transport labor – both human and animal – stimulated new debate among the Meiji elites on the divide between animal and human, and between slave-coolies and wage laborers. Rickshaws and push-car railways spread across borders to other Asian localities – including its first colony, Taiwan. This process also raised issues such as the racialization of laborers and the projection of Japanese technical power. Concerns over animal cruelty – paralleled with social activities in Europe and North America – stimulated the adoption of inanimate fuels. There was never a clear energy “transition” per se. These transformations were never a simple replica of the Western model – just as what happened in colonial Taiwan did not duplicate the metropolitan experience – but was a self-definition of modernity by indigenous efforts.

Exploring imperialism from an individual level, I look over the shoulders of small-time entrepreneurs and regional elites from often neglected localities. Other historians have emphasized how individual rational and opportunistic choices and decisions played out in the interstices of the global imperialism/capitalism system. For example, Jun Uchida portrays the “brokers of empire,” ordinary merchants and entrepreneurs alike, who negotiated, and even used their liminal position in the Empire. Zanasi also shows individuals' rationality by demonstrating how a collaborator (Wang Jingwei) strategically preserved his nationalist and ‘corporatist’

economic development plan under imperialist pressure.<sup>52</sup> Individual choices were personal and complicated, but also intertwined with the greater colonial plans. As this dissertation shows, ordinary individuals made choices that were not always rational or successful, and more often than not, were failures. These struggles revealed the on-the-ground efforts on the interstices that were left unattended by larger-scale agents, such as states, influential leaders, and conglomerates.

I also follow a recent approach to unravel East Asian colonial modernity by examining the social exchange of commodities in the colonized world. For example, Tani Barlow advocates revisiting the questions of selling, buying, investing, and advertising under modern colonial conditions. This social exchange process reveals the mobilization of international and local capital into aggressive corporate form and how people reinvented the historical conditions, materially and symbolically. I treat transportation not only as a form of infrastructure, but also as a globalized, and commodified technology (rickshaws). Barlow's work focuses on the exchange of objects as a transition: new global commodities claimed by large corporations to be new, cleaner, better, and more magical than the objects they intended to replace. Thus, it revealed how "people thought and what theories of the future they concocted, in the debates that always accompany the great transitions."<sup>53</sup> Nevertheless, the organic transport technologies were different. They were products of smaller manufacturers. Also, they represented convenient, rational, and economical choices for quotidian lives on the street more than the future

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<sup>52</sup> Jun Uchida, *Brokers of Empire: Japanese Settler Colonialism in Korea, 1876-1945* (Cambridge, Mass: Harvard University Asia Center, 2011); Margherita Zanasi, *Saving the Nation: Economic Modernity in Republican China* (Chicago: University of Chicago Press, 2006).

<sup>53</sup> Tani Barlow, "Debates over Colonial Modernity," *Cultural Studies* Vol. 26, No. 5 September 2012, p. 633.

perspectives promised by the most advanced inventions. They were not necessarily the best choice, but the most efficient commodity given the conditions at hand. These organic modes of transport – as commodities – were also part of the imagined modernity, one that was branded with indigenous inventions/innovations in the colonial world. They later also become nostalgic symbols associated with a time when individuals undertaking local efforts had endeavored to bridge themselves to the colonized world. In short, they contributed to the making of the character of the colonial world, as did transnational corporations.

Additionally, I scrutinize the relationship between the colonizer and the colonized. This had originally been a spatial problem: in a colonized world, the reconfiguration of space – and the social relations materialized in the space – was ubiquitous. Moreover, as Louise Young demonstrates within the metropole, not all Japanese cities followed the template of the capital city Tokyo; instead, the vernacular, regional development varied. Although this specific work does not focus on the colonial setting, it also sheds light on the relationship between the metropole and the localities, both in *naichi* and the colonies.<sup>54</sup> By tracing the development of specific locales in each chapter, this dissertation provides an extension to this inquiry, not only between Japan and colonial Taiwan. It also looks at the coeval development of the central metropole, Tokyo, and other smaller localities, either in Tokyo's periphery, smaller regions on the outskirts of the metropole-circle, and the hinterland of colonial Taiwan. This is an approach

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<sup>54</sup> Louise Young, *Beyond the Metropolis: Second Cities and Modern Life in Interwar Japan*, 2013.

that reconciles spatiality with temporality.<sup>55</sup> I discuss both the spatial and temporal dimensions by examining the simultaneous development across different localities across Japan and Taiwan.

The colonizer-colonized relationship was never one way either. Anthony King and Gwendolyn Wright have long pointed out that the “colonial third culture” is a dynamic reaction to industrial imperialism in a new environment. It was not a simple duplication of metropolitan urban culture at home. Moreover, the colonizers could also be influenced by local “exotic” aesthetics that in turn shaped the metropole.<sup>56</sup> Similarly, Yuko Kikuchi advocates analyzing the “interrelated modernity of colonizers and colonized.”<sup>57</sup> This dissertation offers a new case study to dismantle the binary logic of exchange between the colonizers and the colonized. The organic transport industry revealed how both parties struggled with limited resources. Railways were an emerging industry in Japan while the colonial state struggled to build its first colony. Both the metropole and the colony faced the simultaneous problems of limited resources and funding. This generated interstices in which locals and colonizers negotiated in surprisingly balanced terms. Taiwan’s human-drawn push-car industry was among only a few industries in which Japanese capital was employed in tandem and dependent upon local private capital in terms of investment and daily operations. This was the case even though the colonial officials were

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<sup>55</sup> Some have criticized Foucault’s formalist concern with space for its neglect over the intricacies of temporality. The rise to primacy of explicit concerns with spatiality, territory, borders, regionalism, national boundaries posed too much presupposition of historical space at the expense of temporality. See Tani Barlow, “The Debate over Colonial Modernity.”

<sup>56</sup> Anthony D King, *Colonial Urban Development: Culture, Social Power and Development* (London: Routledge, 2007); Gwendolyn Wright, *The Politics of Design in French Colonial Urbanism* (Chicago: University of Chicago Press, 1991).

<sup>57</sup> Kikuchi, “Introduction.”

cognizant that the seemingly backward light railway system did not best serve their colonial plans.<sup>58</sup>

Finally, this dissertation extends the inquiry on the global-regional (local) relationship to the formation stage of a new empire. Colonial modernity is a valuable point of departure because it “gives both a diachronic perspective on indigenous development and a synchronic perspective on common modes of modernity triggered by the intervention by cultural imperialism.”<sup>59</sup>

Colonialism was inherently global, but its manifestation was local. Cultural studies scholars have been fruitful in using “colonial modernity” to examine different scales of regionalism – pan-Asianism, inter-Asianism, and transnational Asia.<sup>60</sup> Examining the transportation industry allowed me to focus this study on the spatial concerns of connectivity flows and circuits in the emergence of regionalism on a smaller scale. The organic transportation industry existed because of inherent resource limitations and strong regional interests. Thus, it made for a critical site to explore the local-global dynamics. Treating the local as typical, Martin Dusenberre, Simon Partner, and Gail Lee Bernstein have used local histories in which the individual or the household is the unit of analysis to highlight themes and broader narratives in global history and

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<sup>58</sup> In specific case studies, Todd Henry demonstrates how Japanese imperial ideologies and projects “intersected and interacted with preexisting institutions and practices in the colony itself” both in the design of hygiene systems and city planning. Todd A. Henry, *Assimilating Seoul: Japanese Rule and the Politics of Public Space in Colonial Korea, 1910-1945* (Berkeley, California: University of California Press, 2014); Todd A Henry, “Sanitizing Empire: Japanese Articulations of Korean Otherness and the Construction of Early Colonial Seoul, 1905-1919,” *The Journal of Asian Studies* 64, no. 3 (2005): 639–75.

<sup>59</sup> Kikuchi, “Introduction,” 6–7.

<sup>60</sup> John Namjun Kim, “The Temporality of Empire the Imperial Cosmopolitanism of Miki Kiyoshi and Tanabe Hajime,” in *Pan-Asianism in Modern Japanese History*, ed. Sven Saaler and Koschmann (London: Routledge, 2007), 151–67; Yūko Kikuchi, *Refracted Modernity: Visual Culture and Identity in Colonial Taiwan* (Honolulu: University of Hawaii Press, 2007).

modern Japanese histories.<sup>61</sup> This dissertation sheds light on the relationship between local productivities in smaller units and overarching global development.

## Chapter Organization

*The Muscle-Powered Empire* starts in the late early modern period (1600-1868). Chapter 1 (“When Humans Competed with Beasts: Urban Cart Culture in the Early Modern Era”) begins in the early nineteenth century. It examines organic forms of transportation in the early modern city and the evolving notions of urban identity, human-animal relationships, and cart technology. This chapter is a prelude to the history of bodily energy, mobility, and how these fluid elements constructed the cultural geography of the region. This mobility was best manifested through the urban transportation business, the core of Takanawa’s local economy, and an understudied area in the literature on Tokugawa urban history. The physical flows of the chō’s transport elements reflected and drove the city’s socio-economic transformation throughout the Tokugawa period. The peripheral Takanawa was central – both symbolically and physically – in normalizing a vision of prosperity that came to define the shogun’s capital. The arrival of Westerners and the intensifying foreign contact further complicated these phenomena in the 1850s when the shogun’s capital became a modern Meiji metropolis.

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<sup>61</sup> Simon Partner, *The Mayor of Aihara: A Japanese Villager and His Community, 1865 to 1925* (Berkeley: University of California Press, 2009); Gail Lee Bernstein, *Isami’s House : Three Centuries of a Japanese Family* (Berkeley, CA, USA: University of California Press, 2005); Martin Dussinberre, *Hard Times in the Hometown: A Microhistory of Modern Japan* (Honolulu: Univ. of Hawai’i Press, 2011).

Chapter 2 (“The Rise of the Rickshaw: Urbanites and Animals in the Evolving Urban Space”) traces the technological and commercial innovation of the rickshaw in Japan. The rickshaw was invented in Tokyo by three men in 1870. As this new form of transport proliferated across Asia, it became a symbol of modern metropolises, though full of controversies. This chapter discusses how the invention, innovation, technological development, and marketing of rickshaws evolved within the Japanese political context, especially in the context of Japan’s civilizing project and treaty revision efforts. As a result, the roles of both draft animals and human pullers were profoundly transformed and became increasingly problematized in the Meiji project of “civilization and enlightenment.”

Chapter 3 (“‘Made in Japan’: The Rickshaw as a Commercialized Technology”) traces the export of rickshaws in the pan-Asian market, which started as early as 1873. In 1887, they were listed as a “principal export” of Japan, subject to state monitoring, and they proliferated in Asian metropolises, such as Hong Kong, Singapore, Shanghai, and Beijing. Historians such as James Warren, Chi-Ming Fung, and David Strand have produced pioneering works on how the growing population of rickshaw laborers shaped the rapid urbanization process and local politics of Asian cities, even forging a trans-Pacific network.<sup>62</sup> However, they have not treated the rickshaw as a global commodity. This chapter traces how small-time rickshaw manufactures,

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<sup>62</sup> James Francis Warren, *Rickshaw Coolie: A People’s History of Singapore, 1880 - 1940* (Singapore University Press, 2003), <http://researchrepository.murdoch.edu.au/18286/>; Chi Ming Fung, *Reluctant Heroes: Rickshaw Pullers in Hong Kong and Canton, 1874-1954 / Chi Ming Fung.*, Royal Asiatic Society Hong Kong Studies Series (Hong Kong: Hong Kong University Press ; London, 2005); David Strand, *Rickshaw Beijing : City People and Politics in the 1920s / David Strand.* (Berkeley: University of California Press, 1989).



mostly family-based workshops, tailored their operations to overseas markets and tried to maintain the Japanese monopoly/superiority in the global market. Surprisingly but revealingly, the early twentieth-century introduction of electric trams in Asian cities did not stop but instead stimulated technical innovation in rickshaws.

Chapters 4 (“Only Locals Know: Human-powered Railways in Japan”) and Chapter 5 (“The Unexpected Network: Push-car Railways and the Making of the First Colony of the Last Empire”) feature the human-powered railway in Japan and the push-car railways in colonial Taiwan. Chapter 4 scrutinizes this underwritten story of human-powered railways in Japanese history and showcases human-powered railways’ contribution to creating new regional geography, both spatially and symbolically. The combination of human power and railways shaped the modern experiences of Japan, as did other capital-intensive and more “advanced” transportation industries. Moreover, the human-powered railways revealed the construction and redefinition of specific regions by small-time local initiatives. The human-powered railways sprung out of the geographical gaps between major steamways and trunk roads, in places left out of the grand designs of state initiatives and capital-intensive projects.

Although used as leisure transport in Tokyo, the human-drawn rail carts persisted as mass transport in colonial Taiwan until the 1930s. Chapter 5 investigates the nature of the push-car industry in Taiwan. This chapter argues that the human-powered push-car railway was essential to the colonizing and modernizing experience in colonial Taiwan. The push-car railway was both the propellant and the product of the Japanese colonial expansion. It helped subdue and commercialize peripheral regions – mostly hinterlands that had previously been stateless and

outside of dynastic sovereignty – into the rule of the Empire and the increasingly globalized economy.

The Conclusion ends with an epilogue on human-powered transportation technologies in contemporary Asia. The energy revolution, namely electrification and the use of petroleum, did not directly cause the demise of human-powered transportation. Moreover, these modes of transportation lingered throughout the world in different forms, not as modes of public transport but as memories, cultural symbols, and reinvented traditions. In this way, they remained integral to the place-making process of small localities in Asia in the new context of globalization.

## CHAPTER 1

### WHEN HUMANS COMPETED WITH BEASTS:

### URBAN CART CULTURE IN THE EARLY MODERN ERA

#### Introduction

Imagine that you are from a village in Western Japan, on your first trip to see the shogun's capital, sometime in the late eighteenth century. You walk north along the broad Tōkaidō Highway, in the company of travelers and packhorses, eager to catch a glimpse of the great city. As you approach the city, you recognize the large wooden gate (*ōkido* 大木戸), and next to it signboards (*kōsatsu* 高札) displaying notices and edicts from the shogunate. As you proceed, you notice empty wooden carts (known as “big-eight carts,” *daihachi-guruma* 大八車) parked by the coastline, waiting for cargo to be loaded from boats in the busy port to your right. You envy the passengers on horseback, and as you watch palanquins (*kago* 駕籠) pass, and you think about hiring one for yourself, even though it is technically illegal for peasants to ride them.<sup>63</sup> Meanwhile, you are distracted by teahouse waitresses asking you to stop for a cup of tea,

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<sup>63</sup> The shogunate restricted the use of palanquins inside of Edo except in areas around post-stations. In addition, beginning in the sixteenth century, the shogunate forbade commoners from using palanquins, and also restricted the usage of palanquin to patients, female, children, elders, and travelers with special permission. Ōkurashō 大蔵省, ed., *Nihon zaisei keizai shiryō. 3 日本財政經濟史料 卷3* (Tokyo 東京: Zaiseikeizaigakkai 財政經濟学会, 1924), 1131–32, 1134. Throughout the Tokugawa era, the Edo magistrate issued several similar restrictions, but none worked. See Tokyo-to Minato Kuyakusho 東京都港区役所, *Minato kushi 港区史* (Tokyo 東京: Minato Kuyakusho 港区役所, 1960), 879–80. Also see Iwada Kōtarō 岩田浩太郎, “Toshi keizai no tenkan 都市經濟の轉換,” in

which you decline. Walking further, you see several black cows, led by their masters, pulling large packages of cargo. Their presence tells you that you have reached the Takanawa-chō, which you recognize as one of the “famous places” (*meisho* 名所) of Edo.<sup>64</sup> This, to you, is where the city begins. You have arrived.

The colloquial usage of “Takanawa-chō” referred to a large area stretching between Shiba on the north and the Shinagawa post town to the south along the east coast of Edo Bay and the Tōkaidō Highway. Takanawa was a special place for Edo’s transportation industry. It was home to Edo’s oxcart business, the birthplace of the human-powered big-eight cart, a spot of fierce competition for palanquin carriers both in and outside of the city, and of course, a coastal loading zone for cargo boats.

The transportation business in turn also profoundly shaped the spatial dynamics of the Takanawa neighborhood. The prominent presence of land transport was unique during the Tokugawa period, when major transport relied on waterways. In fact, the use of wheeled carts was an urban phenomenon. Passenger-oriented oxcarts served the Kyoto aristocracy and became a sign of their elevated status. Meanwhile, cargo transportation relied primarily on packhorses, not wheeled vehicles. Only six cities allowed the operation of wheeled carts to transport cargo:

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*Toshi no jidai 都市の時代*, ed. Nobuyuki Yoshida 吉田伸之 (Tokyo 東京: Chūō Kōronsha 中央公論社, 1992), 276–77.

<sup>64</sup> Many ukiyo-e artists drew on Takanawa as one of Edo’s “famous places”. Examples include Hiroshige I (1797–1858), *Tōto Meisho Takanawa No Yūkei 東都名所高輪の夕景* (*Famous Places of the East Capital, the Evening View of Takanawa*), n.d., n.d., The Museum of Fine Arts, Boston. “Hiroshige II, *Tōto Sanjūroku Kei: Takanawa Kaigan 東都三十六景: 高輪海岸* *Thirty-Six Scenes of Tokyo, the Takanawa Coast*, 1862, 1862, Minat-to Library.

Kyoto, Edo, Sunpu, Sendai, Osaka, and Nagoya, and only the first four permitted ox carts to transport cargo within the city boundaries.

This chapter is a prelude of the modern history of bodily energy, mobility, and how these fluid elements constructed the cultural geography of the region. This mobility was best manifested through the urban transportation business, the core of Takanawa's local economy, and an understudied area in the literature on Tokugawa's urban history. From James McClains's pioneering work on Osaka to new works by Timon Screech and Amy Stanley, many English-speaking scholars have joined the Japanese scholars' efforts to recover the legacy of indigenous urbanism that had global resonance with modern Japan. In many ways, this connection is better revealed by the daily circulation of people and goods within the city, the center of which sits the transportation industry.

However, urban transportation in the context of space has never featured at the center of any scholarly discussions about early modern Japan.<sup>65</sup> Takanawa-chō's association with the diversifying urban transport industry made the chō's mobility more than rhetorical or symbolic. The physical flows of the chō's transport elements not only reflected, but also drove, the socio-economic transformation of the city throughout the Tokugawa period. In a sense, the peripheral Takanawa grew to be central – both symbolically and physically – in normalizing a vision of prosperity that came to define the shogun's capital. The arrival of foreigners transformed

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<sup>65</sup> James L McClain and Osamu Wakita, *Osaka: The Merchant's Capital of Early Modern Japan* (Ithaca: Cornell University Press, 1999); Amy Stanley, *Stranger in the Shogun's City: A Japanese Woman and Her World*, 2020; Timon Screech, "The Strangest Place in Edo. The Temple of the Five Hundred Arhats," *Monumenta Nipponica* 48, no. 4 (1993): 407–28.

Takanawa into a frontier of foreign contact as the shogun's capital became a modern metropolis in the Meiji era, transforming this area spatially and socially with new challenges.

### The Region of Takanawa-chō

From a historian's perspective, looking back centuries later, Takanawa seems like an anomalous neighborhood. Contemporaries usually called it "Takanawa-chō," but there was never a single "Takanawa-chō" per se. The character for chō, which can also be pronounced "machi," referred to the basic socio-spatial unit in early modern Japanese cities. Its most common form indicated a gated residential block with roads around the perimeter.<sup>66</sup> The chō was also a self-governed unit, also known as the block association. It was part of the city of Edo's executive system, in which a neighborhood chief (*nanushi* 名主), who was himself a homeowner, managed daily matters, coordinated with other homeowners and residents, and communicated with the City Magistrates.<sup>67</sup>

As a peripheral area on the outskirts of rapidly urbanizing Edo, Takanawa was subject to many jurisdictions. Since Takanawa encompassed what was originally Kami-Takanawa Village and Shimo-Takanawa Village, the *daikan* intendant originally oversaw most of its rural sections

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<sup>66</sup> Takahashi Yasuo 高橋康夫 and Yoshida Nobuyuki 吉田伸之, *Nihon toshishi nyūmon* 日本都市史入門 (Tokyo 東京: Tōkyō Daigaku Shuppankai 東京大学出版会, 1989), iv, 2, 67.

<sup>67</sup> Not all chō had neighborhood chiefs. As neighborhood chiefs' local power expanded, some came to manage multiple chō, especially neighboring chōs. Ryōsuke 良助 Ishii 石井, *Edo no machibugyō* 江戸の町奉行 (Tokyo 東京: Akashishoten 明石書店, 2012), 24; Yoshida Nobuyuki 吉田伸之, "Edo no machi to nanushi 江戸の町と名主," in *Miru yomu aruku Tōkyō no rekishi* みる・よむ・あるく東京の歴史, ed. Ike Susumu 池享 et al. (Tokyo 東京: Yoshikawa Kōbunkan 吉川弘文館, 2017), 68.

(*zaikata* 在方). However, these areas began to transform into city blocks (*machiba-ka* 町場化) in the mid-seventeenth century, and by 1713 Takanawa was subject to the dual administration of both the intendant and the City Magistrates. Over the next few decades, the area developed into eighteen small *chō*, with a mixture of commoner blocks, samurai estates, and temple territories.<sup>68</sup> By the eighteenth century, while “Takanawa” often referred to this broad, diverse neighborhood, it was also frequently symbolized by a small portion of the neighborhood, Shiba-kurumachō, known for its iconic ox carts and cows. In this sense, Takanawa resembled Edo’s famous business district, Nihonbashi, which was also a broad stretch of land named after one part of a larger whole. However, unlike Nihonbashi, which stood at the center of Edo, Takanawa was peripheral, situated on the southern edge of the city. [Map 1 An overview of Takanawa-chō ]

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<sup>68</sup> In 1662, a few blocks adjacent to the Shinagawa post town were transformed into city blocks and transferred to the jurisdiction of the Edo City Magistrate. In 1713, several more rural areas became city blocks (*chō*), which officially started a dual administration of both the intendant and the City Magistrate. The Shogunate investigation bureau conducted a thorough survey of the city in the late nineteenth century, tracing and reconstructing the spatial development of each region. Map 1 shows the relevant part from the overview of Takanawa region from this land survey, which demonstrates the region’s spatial divide and the mixture of commoner *chō*, villages, daimyo estates. Tokyo-fu, *Gofunai basue ōkan sonohoka enkaku zosho jyūroku ka* (Tokyo: 1847). National Diet Library 802-38.

Map 1 An overview of Takanawa-chō<sup>69</sup>

Though spatially peripheral, Takanawa was central to the creation of the cultural geography of Edo’s “famous places.” The area lay in between the city itself and Shinagawa post town, which was known as the “first” of the fifty-three stations along the Tōkaidō Highway connecting Edo to Kyoto. Sengakuji Temple, which was only steps away from Shibakurumachō, was the memorial site for the forty-seven self-sacrificing samurai in the legend of the Akō Vendetta, celebrated as a symbol of samurai loyalty. Separately, on the twenty-sixth day of the first and seventh months of each year, Edoites from all over the city would gather here to celebrate a festival called “*nijyūroku yamachi* 二十六夜待,” literally “waiting for the night on

<sup>69</sup> Tōkyōfu 東京府, *Gofunai Basue Ōkan Sonohoka Enkaku Zusho* [6] *Jyūroku Ka* 御府内場未往還其外沿革圖書. [6] 拾六下 (Tokyo 東京, September 1846), 10.11501/9370094, National Diet Library 国立国会図書館, info:ndljp/pid/9370094.



the twenty-sixth.” They would climb up high or gather in coastal teahouses, waiting to worship the legendary reflections of three buddhas to appear with the moonlight above the sea, praying for good luck, and enjoying liquor, food, and songs.<sup>70</sup> Takanawa continued to be a prominent transportation hub in the Meiji era, and beginning in 1872, Japan’s first steam railway connecting Shinbashi and Yokohama whistled along the Takanawa coast.<sup>71</sup>

These characteristics of Takanawa attracted the attention of many renowned ukiyo-e artists, who frequently presented Takanawa in popular pictorial gazetteers, woodblock prints, and travel guidebooks that showcased the city’s “famous places”. These artists would depict all forms of urban transportation found in the shogun’s capital, which were also ingrained in Takanawa’s identity — sailing cargo junks, oxcarts, big-eight carts, palanquins, and later in the Meiji era, rickshaws and trains. These images, which invoked movement, contrasted with the other common symbol of the district: the large, fixed wooden gate (*ōkido* 大木戸).

At the same time, the vibrant urban transport generated a variety of social problems in the area as fierce competition in the transport business escalated along with the rising commoner economy in Edo. These dynamics earned Takanawa the image of a troubled place as much as a famous place, and sometimes these two images reinforced each other.

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<sup>70</sup> Saitō Gesshin 齋藤月岑, ed., *Tōto Saiji Ki Aki 4 東都歳時記秋 4* (Edo 江戸: Suharaya Mohee Suharaya Ihach 須原屋茂兵衛 須原屋伊八, 1838), 14. Hiroshige also had an ukiyo-e woodblock print describing this festive scene. Utagawa Hiroshige 歌川広重, *東都名所高輪二十六夜待遊興之図 Tōto Meisho Takanawa Njūroku Yamachi Yūkyō No Zu*, 1842 1841, Kishie 錦絵, 36.7\*25.0, 1842 1841, Edo Tokyo Museum. Tokyo Digital Museum, <https://www.edohakuarchives.jp/detail-4534.html>.

<sup>71</sup> Utagawa Hiroshige II 歌川広重 二代, *Tokaidō Mesho No Uchi, Takanawa Ōkido 東海道名所之内高輪大木戸*, 1863, 36\*24.5 cm, 1863, National Diet Library 国立国会図書館, info:ndljp/pid/1309476.

This chapter shows how the socio-economic and spatial character of the transport business enabled the production of the cultural geography of Takanawa. Historians have been discussing how publishing industry helped to redefine the spatial identity of early modern Japan but focusing on transportation industry concretizes such production of space through flows and circuits.<sup>72</sup> In this sense, this chapter aligns with Kären Wigen’s approach to explore the tension between the types of space produced by political units and economic circuits.<sup>73</sup> Although the region and the *chō* operated on different spatial and political scales, Wigen’s central insight – that space is historically produced, and it changes in its configuration and meaning both physically and socially over time – is equally applicable to the great city of Edo.

The spatial character of Takanawa and the land-based transport industry must be understood within the framework of Tokugawa urban spatial-social structure. As castle towns were built, the shogunate imposed “official duties” (*yaku 役*) on status groups, usually based on occupation, and allocated them plots of land in different *chō*. As a result, the *chō* became a concrete, physical manifestation of socio-economic change. Yoshida Nobuyuki uses a short-hand term “space = society” to articulate this dynamic. As he points out, each *chō* also contained a social world of their own. The neighborhood chiefs and great merchant houses (*Ōdana* 大店) that occupied the front streets of the *chō* exercised hegemonic control over their communities,

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<sup>72</sup> See Yonemoto, *Mapping Early Modern Japan*; Yonemoto, “Nihonbashi, Edo’s Contested Center”; Nenzi, *Excursions in Identity*; Goree, *Printing Landmarks*.

<sup>73</sup> Wigen, *A Malleable Map: Geographies of Restoration in Central Japan, 1600-1912*; Wigen, *The Making of a Japanese Periphery, 1750-1920*.

and as the consumer economy grew, the latter group expanded their influence. Yet, in the back-alleys of the chō, there was an expanding day laborer stratum (*hiyōsō* 日用層) of tenants, whose jobs and residencies were volatile and transient. These dynamics emerged within the unit of the chō, which interacted with the surrounding society through the production and distribution of goods and services.<sup>74</sup>

In a general sense, Takanawa-chō exemplifies the social and economic phenomena that Yoshida discusses, but it also introduces new dynamics related to its history as a gateway transportation center. Takanawa did not have a dominant merchant house or a powerful neighborhood chief that dominated the cart business. Rather, its transportation industry – carts and palanquins alike – was intertwined with the local teahouses and inns, as well as temples. Thus, Takanawa’s local economy resembled the Shinagawa post station more than that of the other Edo chō. Like many block associations organized around a craft or trade, the Takanawa oxcarts were also a land-based group. This was similar to a guild in that both were self-governing groups, and Tokugawa status groups in the broadest sense. Maren Ehlers demonstrates that these self-governing groups developed new traits to adapt to a changing environment, which mirrored the Takanawa transportation groups.<sup>75</sup> This chapter unravels how land-based groups

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<sup>74</sup> Yoshida Nobuyuki 吉田伸之, *Toshi: edo ni ikiru 都市: 江戸に生きる* (Tokyo 東京: Iwanamishoten 岩波書店, 2015); Daniel Botsman, “Recovering Japan’s Urban Past: Yoshida Nobuyuki, Tsukada Takashi, and the Cities of the Tokugawa Period,” *CCS City, Culture and Society* 3, no. 1 (2012): 9–14.

<sup>75</sup> Ehlers emphasizes the flexibility of guilds and confraternities to extend their geographical spheres of influence because they were unattached to productive lands like the chō associations were. Maren A Ehlers, *Give and Take: Poverty and the Status Order in Early Modern Japan*. (S.I.: Harvard University Asia Center, 2021).

also transcended geographical limits and extended their economic, social, and cultural spheres outside of their designated chō.

With an ambiguous and ever-changing boundary, “Takanawa” had grown into an identity encompassing the entire coastal neighborhood, rather than a fixed spatial unit governed by a single neighborhood chief. Due to the nature of the transportation business, Takanawa’s mobility was immediate and literal – not only for the day laborers, but for homesteaders as well. Elements of the chō traveled across the city and even helped redefine Edo’s central space.

### **The Origin of Takanawa Shibakuruma-chō – the “Ox-town”**

When the ox-master (*ushimochi* 牛持) Shirōemon was summoned from Kyoto to Edo in 1636 with his colleagues and ox carts, he was unaware that it would be a permanent relocation for him and his family. Nor could he have predicted that the neighborhood of his new home would embody the shogun’s expanding capital. Shirōemon had been among a group of Kyoto ox-masters who had earned their reputation by serving the aristocracy. Only decades earlier, the ox masters had also transported weapons and military provisions to help Tokugawa Ieyasu prevail over Toyotomi Hideyori in the Battles of Osaka, thus securing the shogunate for generations of Tokugawa heirs. In 1634, Kimura Seibee became the first of the Kyoto ox-masters summoned by the shogunate to help to build Ankoku Hall at Zōjōji Temple, a Tokugawa family temple in Edo.

By 1636, when the ox-masters finished their second official construction project, Edo officials had realized that these professionals were too useful to let go.<sup>76</sup>

This was a defining moment for Edo. In 1635, the shogunate had just finished constructing the outer moat of Edo castle, encircling the geographical and political heart of Edo. That year also marked the full-scale implementation of the alternate attendance system. This system, which had been designed to strengthen shogunal authority, offered unexpected business opportunities for the ox-masters because it required about 260 daimyo all over Japan to house their families and retainers in Edo and alternate their residence between Edo and their domains. Along with the daimyo came a growing number of merchants and artisans in service, and consequently, increased cargo circulation.<sup>77</sup>

To ensure stable oxcart service for the expanding capital, the Edo City Magistrate decided to settle the ox-masters in an occupational chō, a common practice among daimyo building castle towns.<sup>78</sup> However, the nature of the oxcart business made settling the ox-town a less straightforward decision for city officials. Caring for cows required large spaces, and ox-masters had around 600 head at the time. City officials could not afford to settle the ox-masters near the

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<sup>76</sup> Tōkyō-to Kōbunshokan 東京都公文書館, *Edo no Ushi 江戸の牛*, Toshi kiyō 都史紀要 32 (Tokyo 東京: Tōkyō-to Kōbunshokan 東京都公文書館, 2003), 23; Tōkyō-to Kōbunshokan 東京都公文書館, “Ushimochi Kyūden 牛持旧伝; Ushimochi 芝車町牛持関係書類,” in *Edo no Ushi 江戸の牛*, Toshi kiyō 都史紀要 32 (Tokyo 東京: Tōkyō-to Kōbunshokan 東京都公文書館, 2003), 110–18.

<sup>77</sup> Ike Susumu, Sakurai Ryōju, Jinnai Hidenobu, Nishiki Kōichi, Yoshida Nobuyuki eds., *Miru yomu aruku Tokyo no rekishi Tsūshihen Tokyo no rekishi 2 Tsūshihen 2 Edo jidai* (Tokyo: Yoshikawa Kōbunkan, 2017.10), p. i. Kota Kodama, “Sankin kōdai seido no igi,” *Nihon gakushiin kiyō* 52(3) (1998), pp. 211–226.

<sup>78</sup> For example, the Maeda daimyo recruited artisans needed in the construction of the castle town, such as carpenters, coopers, and swordsmiths, and gave them land for shops and residences. See James L McClain, *Kanazawa: A Seventeenth-Century Japanese Castle Town* (New Haven: Yale University Press, 1982).

three crowded Tenma-chō in central Edo, which could have put them under closer surveillance of the post-horse officials (*Tenma-yaku* 伝馬役). They also rejected a location in Nakabashi Hirokōji between Nihonbashi and Kyōbashi, which would have put the oxcarts closer to their samurai clientele.<sup>79</sup>

It took three years before officials finalized a permanent location for the ox-masters in Takanawa. To the south of the city, where the urban mingled with the rural, Takanawa had plenty of empty space. Meanwhile, the Tōkaidō Highway ensured the oxcarts a convenient flow to the heart of Edo. This was where the shogunate established an area of four small chō of approximately 40,000 square meters along one side of the highway for the ox-masters. In 1639, Shirōemon moved there along with thirty-eight other Kyoto ox-masters. They were joined by several other ox-masters, who had been relocated from Yotsuya, Kanasugi, Tenma-chō, and Hamachō – construction sites scattered around central Edo. These ox-masters and their 600 cows were the first residents of the Shibakuruma-chō, literally “the cart block in the Shiba area.” It soon received a more popular nickname, the “ox-town” (*ushimachi* 牛町).

Each ox-master was the owner of both his house and an oxcart workshop, which usually constituted one oxcart craftsman, several employees called “cow-leaders” (*ushikata* 牛方), and sometimes a veterinarian or two. Shirōemon, followed by eight generations of his descendants,

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<sup>79</sup> Overseeing the oxcart business and issuing operation permits did become part of their job in the early eighteenth century. Tōkyōto 東京都, *Genroku no machi* 元禄の町, Toshi Kiyō 28 (Tokyoto 東京都, 1981). Tokyo-to eds., *Edo no ushi*, p. 42.

served as the neighborhood chief (*nanushi* 名主) of Shibakuruma-chō. However, as a commoner chō, Shibakuruma-chō's administrative status was ambiguous. It was under the temple magistrate's administration for the first four years, then the rural intendant's watch for another two decades before the Edo City Magistrate finally took it under direct administration in 1662. In short, this ox-town was an exclave of urban commoners surrounded by vast lands of temple estates and rural sections.<sup>80</sup>

With no city walls, Edo's periphery was open to regular reconfiguration, and Takanawa was an exemplary case due to its proximity to the Tōkaidō Highway. All Western daimyo, imperial envoys, and foreign processions had to cross the busy Shinagawa post-town, then Takanawa, before they reached the city via the Tōkaidō.<sup>81</sup> At the same time, Takanawa was located just north of the estuary of the Tama River into Edo Bay, a critical loading zone for the waterway supplying the capital.<sup>82</sup> The intersection of the waterway and Tōkaidō attracted flows of both

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<sup>80</sup> Tōkyō-to Kōbunshokan 東京都公文書館, "Ushimochi Kyūden 牛持旧伝; Ushimochi 芝車町牛持関係書類," 115–18; Hasegawa Masatsugu 長谷川正次 and Tokyo-to Minato Kuritsu Minato Toshokan 東京都港区立みなと図書館, *Bunsei no machi no yōsu Edo machikata kakiage 文政のまちのようす江戸町方書上* (Tokyo 東京: Tōkyō-to Minato kuritsu Minato Toshokan 東京都港区立みなと図書館, 1993), 697; Kodama Kōta 児玉幸多, "Edo no ushi koya 江戸の牛小屋," *Nihon rekishi 日本歴史*, no. 151 (1961): 25.

<sup>81</sup> The absence of a city wall made Edo an exceptional case in the early modern world. See Daniel Jütte, "Entering a City: On a Lost Early Modern Practice," *Urban Hist. Urban History* 41, no. 2 (2014): 204–27. It was not until 1818 when the Edo city magistrate officially defined Edo's boundary and compiled a land survey titled "Gofunai enkaku zusho 御府内沿革図書." *Kyū Edo Shuin Nai Zu 旧江戸朱印内図*, n.d., n.d., 654-02-02-07(ZA-113), Tokyo Metropolitan Archive. <https://dasasp03.i-repository.net/il/cont/01/G0000002tokyoarchv01/000/020/000020622.jpg> (accessed June 10, 2020). For more about the Tōkaidō Highway, see Jilly Traganou, *The Tōkaidō Road: Travelling and Representation in Edo and Meiji Japan* (London: Routledge, 2011).

<sup>82</sup> Two major water networks were supplying the capital. One, known as the Okugawa route (Inner River Route), brought cargo through the Tone-Edo River network from the northeastern domains, Musashi, Shimousa, Hitachi, Kōzuke, Shimotsuke. The other was known as the "Umite" route (sea route). It brought cargo through the Edo Bay, including routes using the Tama River. See Yoshida Nobuyuki, "Maki no takatsumi to kashi dōri," in Ike Susumu, Sakurai Ryōju, Jinnai Hidenobu, Nishiki Kōichi, Yoshida Nobuyuki eds., *Miru yomu aruku Tokyo no rekishi*, 40.

people and cargo, which in turn attracted residents, merchants, artisans, and laborers to settle in Takanawa. As empty blocks and farmland transformed into chō, the urban encroached upon the rural.

A more drastic transformation occurred in 1657, the third year into the Meireki era, when the catastrophic Meireki Fire sparked a reconfiguration of the city. The conflagration, which wiped out almost sixty percent of the original Edo and caused tens of thousands of deaths, forced the shogunate to widen the streets, set up firebreaks, and relocate temples.<sup>83</sup> At the same time when the shogunate was busy reconstructing the Nihonbashi area as the public face of shogunal authority in Edo's commoner districts, the reconstruction plan forced masses of commoners, mostly merchants and artisans, to vacate central areas. The shogunate also transferred the vast territory between Asakusa and Shiba (adjacent to Takanawa) from the intendant to the jurisdiction of the Edo City Magistrates. This was done in order to encourage commoner migration across the Sumida River. As these commoners resettled to the outskirts of the city, the daimyo also retreated from the geographical center. Many seized the opportunity to expand their territory toward the suburbs by purchasing land from commoners and establishing secondary or tertiary residences for both themselves and their retainers.<sup>84</sup> Thus, samurai territories stretched toward the area surrounding Takanawa.

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<sup>83</sup> There were two types of firebreaks: the "fire-preventing block" (*hiyokechi*), which were designed to be vacated and often were encircled with a fence; and the "widened streets" (*hirokōji*), which could be lined with commercial establishments, as long as they did not intrude on reserved open space as sanctuaries in case of fire. James McClain, "Edobashi: Power, Space, and Popular Culture in Edo," in James L McClain, John M Merriman, and Kaoru Ugawa, *Edo and Paris: Urban Life and the State in the Early Modern Era* (Ithaca, N.Y.: Cornell University Press, 1994), 119.

<sup>84</sup> Marcia Yonemoto, "Nihonbashi: Edo's Contested Center," *East Asian History*, No. 17/18 (1999), 54. James McClain, "Edobashi: Power, Space, and Popular Culture in Edo," 107, 119. Miyazaki Katsumi, "Edo no tochi –



The post-fire transformation of the cityscape stimulated urban construction, which fueled a need for heavy lumber and cargo transportation. The skyrocketing demand soon exceeded the ox-masters' capacity, who by this time had only around 250 cows, and probably fewer ox carts, at their disposal. Sensing an opportunity, a carpenter from the ox-town in Takanawa, Hachizaemon, the son of the Kyoto carpenter who had come with the first ox-masters, remodeled his ox cart into a two-wheel wooden cart with extra shafts that could attach to a human body. This new design allowed one or two people to pull from the front, while another one or two drivers pushed from the back. This new device became known as “*daihachi* 大八” (*big-eight*), referencing the “hachi” (eight) in the inventor's name, or “daihachi” meaning “substitute for eight,” a boast about this new device's efficiency, which could accomplish the work of eight men.<sup>85</sup>

The new technology was a success. The big-eight cart could be instantly functional as long as there was sufficient human labor, which was continually replenished by the growing pool of day-laborers in the city. Wages for big-eight cart drivers were also cheap, compared to maintaining a herd of cows that required a constant food supply. Hachizaemon was overwhelmed with business, and made enough money to rent a separate storefront as his new shop. He gathered several apprentices and started his own business in Tsukiji's Kobiki-chō, a new district constructed through reclamation in the coastal area to the north of Takanawa.<sup>86</sup> This could be interpreted as an expansion of the “ox town,” even though the carts were no longer animal-

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daimyo bakushin no tochi mondai 江戸の土地—大名幕臣の土地問題,” in Yoshida Nobuyuki 吉田伸之, ed., *Toshi no jidai 都市の時代* (Tokyo 東京: Chūō Kōronsha 中央公論社, 1992), 135.135.

<sup>85</sup> Tokyo-to, *Edo no ushi*, 48.

<sup>86</sup> Kodama Kōta, “Edo no ushi koya,” *Nihon rekishi*, No. 151 (1961), 23-26. “Ushimochi kyūden,” 119.

driven. The same households were involved in both areas, and the ox carts had made the “big-eight carts” possible by establishing the technology and driving the demand for transport services. By moving into a new business, the ox-town had extended itself into a new neighborhood along Edo’s periphery, now known for carts, rather than animals.

### **The Rise of Urban Cart Culture**

The use of carts, as mentioned in the introduction, was an urban phenomenon. Throughout the Tokugawa period, only six cities allowed wheeled carts, out of which only four permitted ox carts. In fact, the need for carts as well as the trouble they caused signified the level of early modern urbanization. The first ox carts in Sunpu and Sendai were recruited from the Takanawa ox-town to support construction projects, in the same way as the Kyoto ox-masters had been summoned for the construction of Edo.<sup>87</sup> In most cases, as in Edo, castle towns were subject to strict regulations on where, when and how transportation methods could be used, especially given the danger of traffic accidents as well as the constraints of urban infrastructure, such as narrow, muddy, or stony streets, and fragile bridges.

Over time, carts became symbols associated with each city’s identity: ox carts for Kyoto, big-eight carts for Edo, and beka-carts for Osaka.<sup>88</sup> On the operational level, each city may have adopted its own standards for manufacturing the same cart. When the Tokugawa Great Elder

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<sup>87</sup> Tokyo-to, *Edo no ushi*, 1. “Ushimochi kyūden,” 147.

<sup>88</sup> Beka-cart (*beka-guruma*), was a two-wheeled human-powered cart that had been used in Osaka since the mid-eighteenth century. It was designed to transport heavy materials such as lumber or rocks. Usually, it was operated by two or three men in the front driving up a string attached to the cart, and two men in the back pushing. It was narrower than a big-eight cart, given the street conditions in Osaka.

(*tairo* 大老) and lord of Hikone domain, Ii Naosuke, wanted to rebuild his burned mansion in Edo, he encountered issues precisely due to a discrepancy in manufacturing standards. Instead of employing local Edo big-eight carts, he intended to hire a cheaper big-eight cart transportation team from Nagoya. Even as late as 1853, there was no standardization: Ii still needed to negotiate with the Edo City Magistrate (*machibugyō* 町奉行) because Nagoya-style carts were incompatible with Edo's sloping streets.<sup>89</sup>

Within Edo, too, carts also became associated with a specific place, Takanawa. Their reputation was based on assigned duties. The ox-masters offered extra muscle in heavy lumber transport and constructing shogunal projects. They also provided professional bovine knowledge to shogunal officials. They cut cows' horns, punctured thread rings through their noses, and cured bovine diseases in precious white cows. Edo commoners, too, relied on Takanawa cows' labor not just to circulate cargo, but also for ritual purposes. The Shinto festivals celebrated city-wide -- the Sannō, Kanda, and Nezu Festivals -- relied on Takanawa cows to carry portable shrines (*mikoshi* 神輿) on their grand parades.<sup>90</sup> Economically and symbolically, the Takanawa oxcars defined what it meant to live in Edo.

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<sup>89</sup> Tokyo daigaku shiryō hensansho 東京大学史料編纂所, ed., *Dai Nihon kinsei shiryō. Shichū torishimari ruishū shichū-torishimari no bu 3* 大日本近世史料. 市中取締類集 市中取締之部 3 (東京: 東京大學出版會, 1974), 310–12.

<sup>90</sup> “Ushimochi kyūden,” pp. 124-126, 128-129, 133. Tokyo-to Minato Kuritsu Minato Toshokan eds., *Edo machikata kakiage*, 698, 726.

Takanawa-chō's spatial identity was integral to the spatial definition of Edo as a whole. Tairō Uemon's two versions of the New Map of Edo (*Shinten Edo no zu* 新添江戸之図) delineated Edo's boundaries at the beginning of 1657, just before the Meireki Fire. Both maps cut off Edo's southern rim at the ox-town in Takanawa, marked by "Ushimachi-yokochō" and "ushimachi," respectively [Map 2 The Southern Rim of *Shinten Edo no zu*].<sup>91</sup> As the city expanded, Takanawa ceased to be the cartographical southern border of Edo, but gained even greater importance as a geographical marker. In 1710, Takanawa was featured in the politicized reconstruction of Edo landmarks, as Arai Hakuseki tried to rearrange the ritual reception of the Chosun diplomatic envoy. He ordered one of two large wooden gates to be erected next to the Shibakuruma-chō as the gateway to Edo on the Tōkaidō Highway.<sup>92</sup> The installment of the large wooden gate reinforced Takanawa's position as a geographical landmark, but also as an institution of city governance. By the side of the gate, the shogunate erected official notice boards to disseminate governmental edicts, policies, and information to its subjects. The

<sup>91</sup> See appendix Map 2 The southern rim of *Shinten Edo no zu*. Tarō Uemon, *Shinten Edo no zu* (Edo: 1657), size 135.1\*60.1. Kokusai Nihon Bunka Kenkyū Center, Map Database, YG/19/GC65/To 000904235, [http://lapis.nichibun.ac.jp/chizu/santoshi\\_1255.html](http://lapis.nichibun.ac.jp/chizu/santoshi_1255.html) (accessed May 26, 2019). *National Diet Library, Digital Collection. 000007277563. https://dl.ndl.go.jp/info:ndljp/pid/2542711 (accessed May 26, 2019).*

<sup>92</sup> Arai Hakuseki also ordered the original landmark of the southern entrance to be moved into Edo. He reconstructed the Shibaguchigomon and moved it from the Shiba area (just north of Takanawa) to the southern rim of Ginza to the Shinbashi area. He also had two new large wooden gates constructed on the main avenues in Edo, one of which was installed in Takanawa next to the Shibakuruma-chō, marking the gateway to Edo on the Tōkaidō Highway. The rearrangement of Edo's entry point was an essential part of a ritual project by Arai Hakuseki, who sought to assert Japan's diplomatic prestige over the Korean diplomatic envoy. Tokyoshi eds., *Tokyoshi shikō shigaihen Vol. 17* (Tokyo: Tokyoshi, 1932), 225-226. Takemura Itaru 竹村到, "Shibaguchi Gomon Shibaguchi-Bashi No Fushigi 芝口御門芝口橋の不思議," *Minato Kutsu Minato Kyōdo Shiryōkan Dayori 港区立港郷土資料館だより*, no. 73 (2014): 2. Jeong Youngsil 鄭英實, "The Joseon Missions to Japan and Japanese Intellectuals at the Beginning of the Eighteenth Century 18世紀初頭の朝鮮通信使と日本の知識人," *Kaisai University Institutional Repository*, March 31, 2011, <http://jairo.nii.ac.jp/0161/00003432>.

shogunate chose the locations of the notice signs strategically to impress the urban populace with the shogun's power, which became increasingly necessary as the city grew, and the boundaries between previously separate status groups blurred.<sup>93</sup> In Takanawa, the gate and the signboard together created an institutional landmark that made Takanawa officially part of the city.

Map 2 The Southern Rim of *Shinten Edo no zu* <sup>94</sup>



<sup>93</sup> Daniel Botsman, *Punishment and Power in the Making of Modern Japan* (Princeton: Princeton University Press, 2007), 19; Yonemoto, "Nihonbashi, Edo's Contested Center."

<sup>94</sup> 太郎右衛門 Tarō Uemon, *Shinten Edo No Zu 新添江戸之図*, 1657, Kokusai Nihon Bunka Kenkyū Center, [http://lapis.nichibun.ac.jp/chizu/santoshi\\_1255.html](http://lapis.nichibun.ac.jp/chizu/santoshi_1255.html); 太郎右衛門 Tarō Uemon, *Shinten Edo No Zu 新添江戸之図*, 1657, National Diet Library 国立国会図書館, <https://dl.ndl.go.jp/info:ndljp/pid/2542711>.

As the city swallowed Takanawa, the *chō*'s character changed. Teahouses, which had clustered in the Shinagawa post stations, spread to the Takanawa area, joining the established wholesaler houses and ox-masters. Inns and brothels followed.<sup>95</sup> Meanwhile, the cart business, which had formed the nucleus of the original district, was forced to adapt to growing competition from other forms of transport.

### **Draft Animal Economy in Edo**

The Takanawa cart business remained politically marginal, in comparison to its biggest competitor, the Tenmachō packhorse operators, even as it triumphed economically. Both oxcarts and big-eight carts could carry nine *hyō* of cargo or more, almost three times more than the maximum capacity of a single packhorse. For heavy cargo such as rice, miso, and wheat, the capacity gap influenced transport efficiency, even if the price per *hyō* was similar.<sup>96</sup> However, as members of an urban profession, cart laborers were not tied to the countryside, while the packhorses had links to the horse-raising commoners who were essential to military mobilization. In Owari domain, several regional intendants restricted the use of carts in urban areas in order to forestall a decline in horse-raising commoners.<sup>97</sup> In 1681, twenty-four years after the invention of the big-eight cart, the horse masters in Edo submitted their first protest

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<sup>95</sup> “Takanawa ōkido 高輪大木戸,” in Nagasegawa Settan 長谷川雪旦, *Edo meisho zue san dai-ichi-kan san satsu* 江戸名所図会三第一卷三冊, ed. Saitō Chōshū 齋藤長秋 (Tokyo 東京: Hakubunkan 博文館, 1893), 133.

<sup>96</sup> *Hyō* was a volume unit for circulating goods in the Edo period. At the time, 1 *hyō* equaled roughly 60 kg. Kumai Tamotsu 熊井保, “Edo no ushi kasegi [fu Ushimoshi Kyūki no utsushi] 江戸の牛稼ぎ〔含「牛持旧記之写」〕,” *Kokuritsu Rekishi Minzoku Hakubutsukan* 国立歴史民俗博物館研究報告, 1987, 122–23..

<sup>97</sup> Sakurai Yoshiaki 桜井芳昭, “Kinsei Owari No Binbō Sha to Daihachi-Guruma 近世尾張の貧乏車と大八車,” *Kyōdo Bunka* 郷土文化 50(2), no. 174 (1995): 62–63.

petition against the cart business. Accusing the cart operators of hijacking their primary business of transporting rice, soybeans, and wood, they also emphasized their continuous service of supplying horses to the shogunate. They reminded city magistrates that the proliferation of the cart business would decrease the horse supply, which would increase the shogunate's administrative burden.<sup>98</sup>

Nevertheless, the cart business continued to thrive despite several new regulations. In 1696, the Edo city magistrate restricted the maximum cargo weights for big-eight carts. Then, in 1710 they required that big-eight cart operators pay a monthly tax of 1 ryō per cart to the three Tenmachō in order to obtain operating permits. The Tenmachō horse masters only enjoyed this privilege for three years before another great fire broke out in Edo. The fire, in turn, forced the magistrate to lift the taxes as a form of disaster relief.<sup>99</sup> At the same time, another round of post-fire construction gave the cart business an opportunity to prove its value in this fast-expanding city, and the permit tax was never re-levied.<sup>100</sup>

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<sup>98</sup> Tōkyōto 東京都, ed., *Tokyoshi shikō sangyōhen Vol. 7 東京市史稿産業篇7* (Tokyoto 東京都, 1960), 425. In Osaka, the emergence of beka carts raised similar challenges to packhorses and cargo boats. See Hada Shinya 羽田真也's "Kinsei ni okeru bekaguruma no tenkai to uwani chabune 近世におけるベカ車の展開と上荷茶船" in Tsukada Takashi 塚田孝, *Kinsei oosaka no hō to shakai 近世大坂の法と社会* (Osaka: Seibundō 清文堂, 2007).

<sup>99</sup> Ōkurashō 大蔵省, *Nihon zaisei keizai shiryō. 3 日本財政経済史料. 卷3*, 1108–10, 1112. Tōkyōto 東京都, *Tōkyō shishikō. shigai 14 東京市史稿 市街篇第14* (Tokyo 東京: Tokyoto 東京都, 1973), 501. p. 501. Itakura Kiyonobu 板倉聖宣, "Edo fukkō ni katsuyaku shita daihachiguruma wa yokuatsu manugareru 江戸復興に活躍した大八車は抑圧免れる," *Kagaku Asahi 科学朝日 / 朝日新聞社 [編]*. 51, no. 4 (1991): 82–86.

<sup>100</sup> In 1728, the desperate horse-masters submitted another petition, proposing that the cart business only transport "cart cargo," such as sand, stones, and furniture, leaving packable goods, such as sake, wood, rice and miso to packhorses. However, this time, their attempt to restrict cargo carts to their original official construction assignments proved to be in vain. It was unclear how the city magistrates responded, and the cart business continued to thrive. "Go-tenma kata kyūki 御伝馬方旧記," in Kodama Kōta 児玉幸多, *Kinsei kōtsū shiryōshū 近世交通史料集3* (Tokyo 東京: 吉川弘文館 Yoshikawa Kōbunkan, 1969), 102–5.

As the cart business took off, competition between modes of transport increased, and traditional ox-masters started to lose out to the trendy big-eight carts, which had grown out of their own business in their own district. Maintaining a herd of cows inside of the city was costly. First, not all cows suited as drafting labor. Cows from the nearby Kantō area – Kazusa, Shimusa, Sagami, and Anwa – were too small to be used as cart-cows. The ox-masters had to import calves from faraway Etchū, Hida, and Shinano.<sup>101</sup> Additionally, the fodder cost was expensive as well. To prepare the daily ration for one single cow, the ox-masters needed to mix 5 shō of barley and three shō of wheat bran and boil them together to make a special stew. This meant that they not only had to purchase the fodder but also a large amount of firewood to maintain a large herd.<sup>102</sup> This made the ox-cart masters sensitive to grain prices and vulnerable during times of famine. They petitioned for extra subsidies to the shogunate many times during famines.

The enactment of Tokugawa Tsunayoshi's "Laws of Compassion for Living Things" complicated the relationship between draft animals and humans, and further influenced the oxcart business. On one hand, the law reinforced the ban on the slaughter of draft animals for food. It mostly concerned draft animals in the countryside as a measure to stabilize rice agriculture, which was the economic foundation of the shogunate. The law urged peasants to raise draft animals and to care for them as if they were kin. However, in the urban setting, such laws led to unintended trouble for the ox-masters. In Edo, the human-powered big-eight cart

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<sup>101</sup> "Ushimochi kyūki 牛持旧記," in *Edo no ushi kasegi [fu Ushimoshi Kyūki no utsushi] 江戸の牛稼ぎ*, by Kumai Tamotsu 熊井保, Kokuritsu Rekishi Minzoku Hakubutsukan 国立歴史民俗博物館研究報告 (Kokuritsu Rekishi Minzoku Hakubutsukan 国立歴史民俗博物館, 1987), 158.

<sup>102</sup> *Edo no ushi*, 80-81.



operators often caused traffic accidents, which often led to death of street dogs. Tsunayoshi's obsession with dogs also led to a regulation to require all cart businesses to hire extra navigating laborers (*sairyō* 宰領) to attend to each vehicle and prevent accidents. The ox-masters therefore were irritated by such collateral burden indirectly imposed by the big-eight cart operators. The extra employment added another financial burden for the ox-masters, who already had to hire cow-leaders to supervise the daily cart operations. With fewer orders, the oxcarts had to survive on declining marginal profits.<sup>103</sup>

In contrast, the human-powered big-eight cart challenged the fundamental nature of the draft animal economy. The big-eight carts were a more straightforward and flexible business. Operators of big-eight carts did not have to struggle with official obligations or bear the high costs of animal maintenance. Wholesalers could recruit laborers themselves, then rent or purchase big-eight carts, which circumvented the traditional transportation monopolies. With lower prices and superior flexibility, the big-eight cart became popular among commoners and became a major employer for Edo's day laborers as well. While Takanawa-chō was swallowed by the urban world, the big-eight carts dispersed from Takanawa into the streets of Edo.

The ox-masters may have been destined to be swallowed up by the offshoot business they had created. The amount of operators demonstrated the diverging fates of the big-eight carts and oxcarts. The ox-town started with around thirty ox-masters and 600 cows in the Kan'ei era (1624-43), but by the Jōkyō years (1684-87), there were only 18 ox-masters and 250 cows. By

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<sup>103</sup> "Ushimochi kyūki," 155-156, 181.

the Kyōhō period (1716-1736), there were only eight ox-master households and 210 ox carts left. The dwindling quantity was in contrast to the over two-thousand big-eight carts around the same period.<sup>104</sup> Some descendants of the earliest ox-master households chose a different occupation. To renounce their occupation as ox-masters, they sold out of their ox stocks (*kabu* 株) and their designated lands, and moved out of the ox-town. Stocks were business licenses usually shared by members of trade and craft guilds. An ox-master's relocation suggested a group's ambiguous nature. They were quasi-guilds, but also possessed a place-based identity. At any rate, this made them less flexible than the big-eight carts.<sup>105</sup>

In an attempt to maintain their ways of life, the Takanawa ox-masters employed several conventional strategies to survive a competitive market. They petitioned the shogunate for relief measures, such as borrowing money and grain from the government when they suffered from famines, fluctuating rice prices, or destructive fires. They also petitioned to reduce their costs by rescinding their obligation to hire the redundant navigating laborers, citing increased competition from big-eight carts. However, their efforts were insufficient to save them from the plight.<sup>106</sup>

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<sup>104</sup> Numbers are from “Ushimochi kyūden” reprinted in Tokyo-to eds., *Edo no ushi*, and “Ushimochi kyūki,” reprinted in Kumai Tamotsu, *Edo no ushi kasegi*. “Go-tenma kata kyūki,” in Kodama Kōta eds., *Kinsei kōtsū shiryō shū Vol. 3* (Tokyo: Yoshikawa Kōbunkan, 1969) 102-105., requoted from Tokyo-to eds., *Edo no ushi*, 10.

<sup>105</sup> “Ushimochi kyūden.” Tokyo-to Minato Kuritsu Minato Toshokan eds., *Edo machikata kakiage: Bunsei no machi no yōsu I Shiba-hen jōkan*, 726-728. For more on stocks (*kabu*), see Maren A. Ehlers, *Give and Take: Poverty and the Status Order in Early Modern Japan* (Cambridge, Massachusetts: Harvard University Asia Center, 2018), 29.

<sup>106</sup> Petitions mentioned that the fluctuating rice prices were in 1733, and following the Great Famines of Kyōhō in 1833 and 1863. Petitions due to destructive fires were submitted in 1806 and 1847. “Ushimochi kyūden” and “Ushimochi kyūki.” “Ushimochi kyūden” and “Ushimochi kyūki.”

Table 1 Number of Ox-masters houses and Cows in Edo <sup>107</sup>

Year	Ox-masters (households )	cows
1624-43	30	600
1684-87	18	250
1711	8	271
1726	7	260
1728	7	254
1733	7	249
1742	6	197
1829		142
1865	4	172

### The Reconfiguration of Edo's Urban Space

At a loss, the ox-masters pursued a different strategy, which unexpectedly changed the landscape of Edo and the nature of Takanawa chō. They followed the faster pace of commercial traffic and penetrated the heart of Edo. Their first stop outside of Takanawa was the Nihonbashi area. Nihonbashi, literally the “Bridge of Japan,” was a designated firebreak that grew to be the geographic, commercial, and cultural center of Edo. According to Marcia Yonemoto, Nihonbashi's centrality was based on a constant negotiation between the urban commoners' economic and cultural vitality and shogunal authority. <sup>108</sup> Entering the stage from the peripheral

<sup>107</sup> Tōkyō-to Kōbunshokan 東京都公文書館, “Ushimochi Kyūden 牛持旧伝; Ushimochi 芝車町牛持関係書類,” 48.

<sup>108</sup> Marcia Yonemoto, “Nihonbashi: Edo's Contested Center.”

Takanawa, the ox-masters would join these competing groups in the making of early modern Japan's central crossroads.

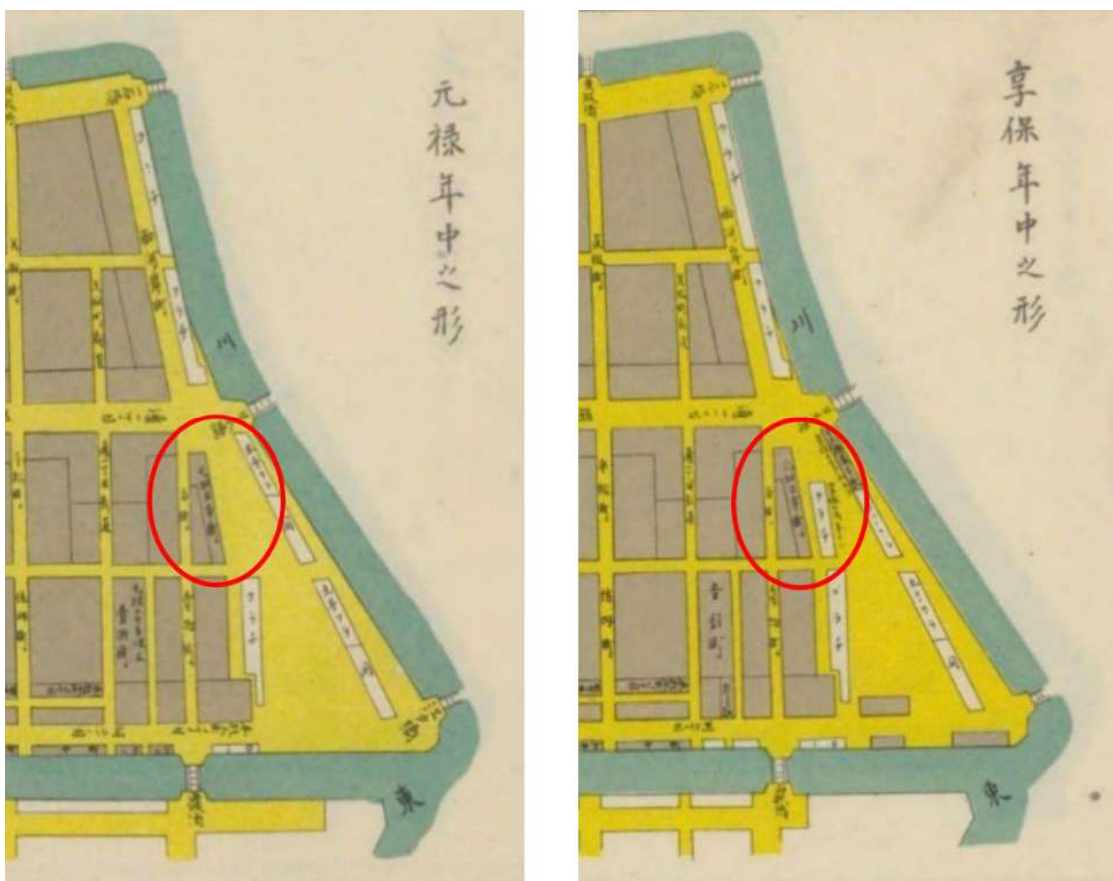
Moving to the Nihonbashi area started as a sensible business strategy – one that coincided with the moves of fellow commoners. The lumber wholesalers, who were valuable clients and partners of the ox-masters, had stretched their occupation along the riverside of the tributary of the Nihonbashi River in Honzaimoku-chō (literally “the Lumber Merchants Quarter”). By moving their base to an adjoining area, the ox-masters could reduce their operating costs and be closer to their customers in the city. In 1707, three years after the shogunate lifted the Tenmachō-registration tax on the big-eight carts, the ox-masters submitted a petition asking to rent a permanent wagon yard in the southern portion of the Yokkaichi firebreak. It was adjacent to the southern corner of Nihonbashi and only a few steps away from Honzaimoku-chō. To the delight of the ox-masters, the city magistrate, who probably also recognized the benefit of the ox-masters' presence in facilitating market circulation, soon granted them 200 *tsubo* of vacant yards in the neighborhood [Map 3 Oxcart parking lot in Yokkaichi].<sup>109</sup>

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<sup>109</sup> “Ushimochi kyūden” and “Ushimochi kyūki.”

### Map 3 Oxcart parking lot in Yokkaichi

The map on the left shows the region in the Genroku era (1688-1704) before the establishment of the parking lot, and the one on the right shows it during the Kyōhō era (1716-1736).<sup>110</sup>



Yokkaichi shared some geographical traits with the ox-masters' home base in Takanawa.

Situated at the mouth of the Nihonbashi on the waterway of the Kanda River, the Yokkaichi

<sup>110</sup> Tōkyōshi Nihonbashiku 東京市日本橋区, “御府内場末往還其外沿革図書 十六下 Gofunai basue ōkan sonohoka enkaku zusho jyūroku ka,” in *Kanpō kokenzu kaisetsu – gofunai ōkan sonohoka enkaku zusho Nihonbashi no bu 寛保活券図解説 御府内場末往還其外沿革図 日本橋之部* Reprinted in *Shinshū Nihonbashi kushi 新修日本橋区史* (Tokyo 東京: 東京市日本橋区, 1937), 28–29.

firebreak was at a conjunction of both the land and waterway networks. The spaces at the riverside were natural trans-shipment points where wharves, storage houses, and rice and fish markets flourished. In the eighteenth century, riverside wholesalers (*kawabe toiya* 川辺問屋) sprawled along Edo's land-river crossroads, turning riverbanks into busy hubs of circulation that supplied greater Edo. The ox-masters' most competitive rivals, the big-eight cart workshops (*kurumaya* 車屋), had already established bases along the riversides in Edo and recruited day laborers for the heavy lifting.<sup>111</sup> The Takanawa oxcarts had limited options to follow suit due to their chō-based constraints, but Yokkaichi, with its proximity to Nihonbashi, would be a crucial location for them to catch up with their rivals.

Yokkaichi resembled Takanawa in its status as a place to display shogunal authority. Like Takanawa, it featured an official notice board. It was also home to a public execution grounds for criminals. Adding another layer to the political display of power were several assigned mansions for the city elders (*machi toshiyori* 町年寄) on the same block.<sup>112</sup> The permission for the oxcarts to stay in Yokkaichi indicated that the city magistrates recognized the importance of their presence – even if it meant incorporating them into the increasingly crowded urban center or settling them next to the city officials' dwellings.

Departing from the Yokkaichi parking lot, the ox-masters flowed into the streets of central Edo. They dragged their oxcarts from the Yokkaichi across the riverbank and reached the

<sup>111</sup> Yoshida Nobuyuki, *Toshi: Edo ni ikiru*, 205-208, 222-224.

<sup>112</sup> Marcia Yonemoto, "Nihonbashi: Edo's Contested Center," 58. Takenouchi Masato 竹ノ内雅人, "Machi toshiyori to machikata shakai 町年寄と町方社会," in Ike Susumu 池享 et al., eds., *Miru yomu aruku Tōkyō no rekishi* みる・よむ・あるく東京の歴史 (Tokyo 東京: Yoshikawa Kōbunkan 吉川弘文館, 2017), 66.

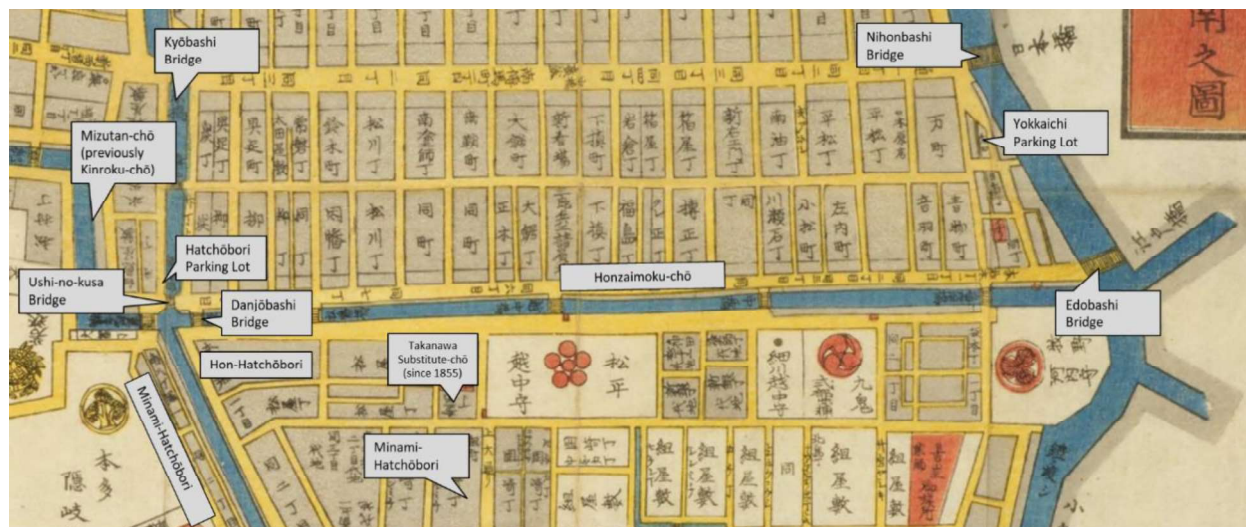
southern end of the Honzaimoku-chō – the Hatchōbori neighborhood. This was another crucial gateway and circulation hub in central Edo. The castle moat in Hatchōbori was extended inside several daimyo storehouses to facilitate the direct waterway transport of firewood that supplied the great daimyo in the core of Edo Castle. It was the primary residential area for samurai policemen, *yoriki* 与力, and *dōshin* 同心, making it a center of Edo politics.<sup>113</sup> Here in Hatchōbori, the oxcars had closer access to their samurai patrons.

Before they received official permission to do so, the ox-masters strategized to park their oxcars in several stop points to cover the neighborhood. They put five to six oxcars on the southern side of Kyōbashi Bridge, another five to six oxcars across the bridge on the Minami-hacchōbori area, and twenty-three oxcars further east in front of the merchant houses in Kinroku-chō. The other thirteen oxcars covered the rest of the neighborhood. This spatial arrangement allowed quick response to requests from their samurai patrons and wholesalers in the neighborhood, including wholesalers in Honzaimoku-chō, Matsuyachō, and the adjacent daimyo house of Matsudaira Etchū no kami<sup>114</sup> [Map 4 Two Takanawa parking lots in Edo’s central area].

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<sup>113</sup> “Ushimochi kyūden,” 120-123. Kakuwa Yūko 角和裕子, “Hikone-han Setagaya-ryō to Edo Hantei 彦根藩世田谷領と江戸藩邸,” in Yoshida Nobuyuki 吉田伸之, ed., *Shirizu santo. Edokan シリーズ三都江戸巻* (Tokyo 東京: Tōkyō Daigaku Shuppan Sha 東京大学出版会, 2019), 61. Minami Kazuo 南和男, *Edo no machi bugyō 江戸の町奉行* (Tokyo 東京: Yoshikawa Kōbunkan 吉川弘文館, 2005), 202–10. Also see Miyazaki Katsumi 宮崎勝美, “Edo no tochi – daimyo bakushin no tochi mondai 江戸の土地—大名・幕臣の土地問題,” in Yoshida Nobuyuki 吉田伸之, *Toshi no jidai 都市の時代*, 157.

<sup>114</sup> “Ushimochi kyūden,” 159-160. See also petitions reprinted in Tokyo-to eds., *Edo no ushi*, p.104.

Map 4 Two Takanawa parking lots in Edo's central area<sup>115</sup>

However, the incorporation of ox carts in the center of the city required new spatial arrangements, which caused tension. As Edo expanded, commoner neighborhoods became even denser. The time-tested strategy for solving this issue was temporal management. For example, the tangerine merchants would occupy a place from winter to spring, and plant sellers from summer to fall.<sup>116</sup> However, the arrival of ox carts, their bulky cargo, and their non-seasonal business challenged the schedule. The neighborhood chiefs of both Yokkaichi and Hatchōbori filed complaints against the ox carts throughout the eighteenth century. They accused the clumsy ox carts of damaging their property, and tried to push them out of the neighborhood.<sup>117</sup> These spatial conflicts forced the ox-masters to defend their rights by submitting counter-petitions.

<sup>115</sup> Based on Seishichi Owariya 尾張屋清七 and Kageyama Muneyasu 景山致恭, *Edo Kiriezu: Tsukiji Hatchōbori Nihonbashi Minami Ezu 江戸切絵図 築地八町堀日本橋南絵図*, 1862 1849, 1862 1849, National Diet Library 国立国会図書館, info:ndljp/pid/1286660.

<sup>116</sup> Tokyo-shi eds., *Tokyoshi shikō sangyōhen vol. 22*, (Tokyo: Tokyoshi, 1978), 641.

<sup>117</sup> The petition by Hatchōbori chō caretaker (jimori), a manager in charge of collecting rents and general property management for landowners. Petitions reprinted in Tokyo-to eds., *Edo no ushi*, 103.



Luckily for the oxcarts, Edo officials were on their side, as their diligent service to samurai and commoner clients was needed in the expanding capital. In 1726, the city elders intervened on their behalf. They assuaged the Hatchōbori neighborhood chiefs' anxiety by restricting the ox-masters to a designated square on the west side of the Danjōbashi bridge.<sup>118</sup> It was the second officially recognized oxcart parking yard in central Edo. With two new wagon yards in the heart of Edo, the ox-masters solidified their networks connecting peripheral Takanawa to central Nihonbashi.

This spatial strategy rescued the oxcart business, but it did not turn the tide. By the mid-eighteenth century, there were three thousand big-eight carts in Edo, and the ox-masters had to lower their prices by an average of 75% percent. Some chose to follow the trend. Building on their previous connection to Hachizaemon and his invention, they began purchasing big-eight carts to keep on their yards as backup devices.<sup>119</sup>

Confronting a survival crisis, however, the ox-masters had developed the skill of vocally defending their rights. Over and over, they cited the story of how they had been needed and summoned to come to Edo in the first place, reminding officials of their former indispensable roles in the capital. They claimed to follow daily cleaning routines – a standard requirement for all urban residents. They also promised to make amends for any property damage.<sup>120</sup> In 1769, the

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<sup>118</sup> Tokyo-to eds., *Edo no ushi*, 103-105.

<sup>119</sup> “Ushimochi kyūden,” and “Ushimochi kyūki,” 182-183.

<sup>120</sup> In 1769, they also petitioned once again to expand their wagon depot in Yokkaichi, but the Honzaimoku-chō neighborhood chief declined their request. Tokyo-shi eds., *Tokyoshi shikō sangyōhen vol. 22*, (Tokyo: Tokyoshi, 1978), 641. Their petitions to protect their rights as tenants can be dated to 1720, 1730, 1731, 1734, 1736, 1745, 1761, and 1769. “Ushimochi kyūden,” and “Ushimochi kyūki.”

ox-masters even went after one of the oldest, and most representative, tenants in Yokkaichi, the tangerine wholesalers. They used the same accusations that had been leveled against them by other tenants, claiming that their neighbors had improperly used the limited shared space and impeded their business.<sup>121</sup> The Takanawa ox-masters had learned to assert their rights as legitimate members of the community in central Edo.

Meanwhile, though they were often in conflict with their wholesale neighbors' guild organizations (*nakama* 仲間), they also learned from their example. In 1769, six ox-masters submitted a bold proposal to the Edo magistrate. They asked for permission to be the representative (*sōdai* 惣代) of all big-eight cart businesses in the city. They proposed charging each big-eight cart one monme and five bun of silver per month, for a total of 900 ryō annually. In exchange for this privilege, they would submit 200 ryō to each of the two city magistrates, altogether a 400 ryō annual tribute. The ox-masters proposed acting as the manager of all cart operators, as well as the mediator between cart professionals and the Edo officials. Without explicitly saying so, this proposal intended to establish a guild-like organization for the cart business in Edo and extend Takanawa's sphere. At the same time, they were trying to

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<sup>121</sup> Miyao Shigeo 宮尾しげを, *Edo kobanashishū* 江戸小咄集 (Tokyo 東京: Heibonsha 平凡社, 1971), 154; "Edo Yokkaichi no mikan-ichi 江戸四日市の蜜柑市," in Hirase Tessai 平瀬徹齋 and Hasegawa Mitsunobu 長谷川光信, *Nihon sankai meibutsu zue 2* 日本山海名物図会 2 (東京: 名著刊行会, 1979). Petition reprinted in Tokyo-to eds., *Edo no ushi*, 102-103.

incorporate and subordinate a stronger competitor. Yet to their dismay, their proposal never received official permission, despite several attempts over the years.<sup>122</sup>

Unlike cargo barges (*kaisen* 廻船), Takanawa carts never had any guild-like organizations. However, even without an official institution, the Takanawa ox-masters organized themselves much like a quasi-guild that was bonded upon their *chō*-based geographical and occupational identities. In the 1840s, during the Tenpō Reforms, when guild organizations were temporarily outlawed, a non-Takanawa origin startup group proposed operating oxcarts in the Shinjuku area, which was outside of the geographic range of the oxcarts' two wagon yards in Edobashi. However, the Takanawa ox-masters still managed to restrict the newcomers from entering the Yotsuya-mitsuke area. They set an upper limit of fifty cows for the group, and even managed to charge the newcomers an annual fee of one *ryō* per cow. These methods were typical among other Tokugawa guilds to thwart or tame rivals outside of the guild.<sup>123</sup> It was possible that the Tenpō Reform's prohibition of guild organizations had enabled other amateur groups to invade the otherwise Takanawa-dominated oxcart business.<sup>124</sup> Ironically, the ox-masters were

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<sup>122</sup> For example, there were “nakama” associations among the eighteen cart workshops (*kurumaya*) along the Sujigai-bridge riverside, near the convergence of the Kanda and Sumida Rivers. Yoshida Nobuyuki, Toshi: Edo ni ikiru, 222-223. “Ushimochi kyūden,” 133-134.

<sup>123</sup> “Shinsen Tokyo Meisho Zue No. 33 新撰江戸名所図会 3 3,” *Fūzoku Gahō (Rinji Zōkan) 風俗画報 (臨時増刊)*, 1902; Japan) Tōkyō-to Minato Kuyakusho 東京都港区役所, ed., *Minato-ku shi 港区史 4* (Tokyo 東京: Tōkyō-to Minato Kuyakusho 東京都港区役所, 1960), 882; Japan) Tōkyō-to Shiba-ku 東京都芝区, ed., *Shiba-ku shi 芝区史* (Tokyo 東京: Tōkyō-shi Shiba Kuyakusho 東京市芝区役所, 1938), 296; Ono Takeo 小野武雄, *Edo bukka jiten 江戸物価事典* (Tokyo 東京: Tenbōsha 展望社, 2009), 136.

<sup>124</sup> Araki Hiroyuki 荒木裕行, “Tenpō kaikaku to Edo no shakai 天保改革と江戸の社会,” in Ike Susumu, Sakurai Ryōju, Jinnai Hidenobu, Nishiki Kōichi, Yoshida Nobuyuki eds., *Miru yomu aruku Tokyo no rekishi 2 Edo Jidai*, 131.

still able to deploy these methods to protect their monopoly, precisely because they were not an officially registered guild organization.

As ox-masters asserted their rights in new territory, their home district was also getting crowded, forcing them to defend their traditional stronghold. By the mid-nineteenth century, the ox-masters had to confront spatial disputes with the neighboring teahouses and *sudare* (*yoshizu* 葭簀) merchants in coastal Takanawa. Their disputes epitomized a frequent occurrence on riversides in Edo, which had become increasingly crowded circulation hubs. Joining the riverbank wholesalers were many petty merchants, who also began to squeeze in new dwellings and shops along the waterway. In 1824, the shogunate had to issue a new edict to remind the urbanites that these banks belonged to the shogun, and imposed an annual tax (*myoga* 冥加) in exchange for the right to occupy this space.<sup>125</sup> Although the edict targeted banks along the castle moat, the coastline Takanawa ox-masters seized the opportunity before their competitors. They applied for the *myoga* tax, thus securing their rights along the coastline in front of their *chō*.<sup>126</sup> In both the geographical periphery and the center of Edo, where waterways met the land route, the Takanawa cart professionals asserted their membership in their own *chō*, as well in the wider urban world of Edo.

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<sup>125</sup> Yoshida Nobuyuki 吉田伸之, “Maki no takatsumi to kashi tōri 薪の高積みと河岸通り,” in Ike Susumu, Sakurai Ryōju, Jinnai Hidenobu, Nishiki Kōichi, Yoshida Nobuyuki eds., *Miru yomu aruku Tokyo no rekishi*, 40.

<sup>126</sup> “Shibakuruma-Chō Ushimochi Kaganchi Myōgakin 芝車町牛持河岸地冥加金” (Kyūbakufu hikidsukisho: Tenpō senyō ruishū [268] dai 95 jō chōnin shogan no bu jō 旧幕府引継書: 天保撰要類集[268]第 95 上町人諸願の部上, n.d.), National Diet Library..

### **A Troublesome “Famous Place”**

Along with the flows of the chō’s people, animals, and carts, Takanawa developed a reputation as both a “famous place” and a “troubled place”. These distinctions were mutually reinforcing. In this sense, Takanawa-chō resembled the Shin-Yoshiwara brothel district, which was geographically peripheral, but central to the imagination of Edo’s urban life through the combination of repeated depictions as a desirable destination in popular culture and a deserved reputation as a hotbed of crime and violence.<sup>127</sup>

The infiltration of Takanawa cart businesses in the spatial heart of the city introduced socio-economic troubles through their employment of a large population of laborers. These cart-pullers and ox drivers — poor, marginal men — brought the neighborhood to the attention of the authorities, cementing the area’s reputation as one of the city’s most troublesome quarters. Takanawa’s association with a vulnerable, exploited population rendered it a site of official scrutiny and a stand-in for a new conception of urban social problems.

Some of the problems in Takanawa were related to the nature of the transport business. Over-loading and speeding were two common practices subjected to repetitive regulations. Stacked bales of goods could flip, and speeding wheels injured cows, people, and property, especially in a city with ubiquitous slopes. In extreme cases, careless loading cost lives. A 1716 proclamation criminalized manslaughter by cargo transporters with the sentence of exile to

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<sup>127</sup> Amy Stanley, *Selling Women Prostitution, Markets, and the Household in Early Modern Japan* (Berkeley: University of California Press, 2012), 49–53, <http://public.eblib.com/EBLPublic/PublicView.do?ptiID=913760>.

remote islands. Many of the victims were small children on the streets who died in accidents, even if the cart drivers had followed their behavior codes, such as shouting out alerts before rushing down a bridge.<sup>128</sup> Laws and regulations on such matters treated ox carts and big-eight carts as a single category of cart businesses, instead of consolidating packhorses and ox carts, for instance, as animal-driven transport. Thus, it re-inscribed the connection between Takanawa's traditional ox carts and the emerging big-eight carts as one category subject to city administration.

However, the problem that most concerned the city administration was the expanding and increasingly diversified day laborer stratum that supplied the transport industry. As the city expanded and more goods circulated, more laborers entered the sub-distribution channel market. Professional big-eight cart pullers, known as *shariki* 車力, joined the cows and ox-masters, flowing through the veins of the city. Penetrating the heart of Edo, the ox-masters also recruited day laborers from nearby neighborhoods, rather than ox-town residents, as cow-leaders. Meanwhile, the demand for human transport also increased. With few skill requirements, the palanquin carrier (*kago-kaki* 駕籠舁) became a form of fallback work when day laborers ran out of other employment. This caused their numbers to grow city-wide. Starting from 1665, the city

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<sup>128</sup> Ōkurashō 大蔵省, *Nihon zaisei keizai shiryō*. 3 日本財政經濟史料. 卷3, 1107–9, 1113–14, 1108–9, 1114–15; Tokyo daigaku shiryō hensansho 東京大学史料編纂所, *Dainihon ishin shiryō kōhon maikuroban shūsei : tōkyō daigaku shiryō hensanjo shozō* 大日本維新史料稿本マイクロ版集成: 東京大学史料編纂所所蔵. (Maruzen Tokyo Daigaku Shuppankai 丸善 (発売), 東京大学出版会, 1997), 1690.23-3-1.10, 17; 1742.27-3-2.3, 34; 1758.28-4-1.7, 44; Shihōshō daijn kanbō chōsaka 司法省大臣官房調査課, *Tokugawa jidai saiban jirei keiji no bu* 徳川時代裁判事例. 刑事ノ部, Shihō shiryō 221 (東京: 司法省調査課, 1937), 142, 603–5, 623–24, 953–54.

magistrate imposed a registration law to control the growing population of day laborers through working permits and registration taxes. It officially recognized big-eight cart pullers as part of the day laborer category in 1670 and added palanquin carriers in 1704.<sup>129</sup> However, unlike the earliest residents, such as the ox-masters, these day laborers did not have a neighborhood assigned for them. This meant they had neither *chō*-based occupational duties nor spatial identities. Most were single men without permanent jobs or even residential registration. Like the cargo and carts, the day laborers flowed and dispersed into the streets of Edo.

The problem of unrooted day laborers was prominent in a liminal location such as the Takanawa – Shinagawa area. As a vibrant post town, Shinagawa’s brothel district (*giji yūkaku* 疑似遊郭) was famous throughout the realm.<sup>130</sup> The post station’s inns and teahouses had in-house palanquin services for sending clients back to Edo after they had patronized prostitutes.<sup>131</sup> However, these station palanquins, in addition to their official duties assigned by the post town, were restricted by local rules to offer only one-way service from Shinagawa post town to Edo. This meant that they could not pick up guests who were coming from Edo on their way, even in places as close to the post town as Takanawa.

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<sup>129</sup> The 1665 edict included day laborers such as fire hook users (*tobigushi*), rice pounders (*kometsuki*), back carriers (*seohi*) and light palanquin owners (*karukago-mochi*). “Ushimochi kyūki,” 175-176. Ōkurashō eds., *Nihon zaisei keizai shiryō*, Vol. 3 *Keizai no bu 2* (Tokyo: Zaisei Keizai Gakkai, 1925), 1100,1103. Iwada Kōtarō, “Toshi keizai no tankan,” in Yoshida Nobuyuki eds., *Kinsei no nihon Vol. 9 Toshi no jidai* (Tokyo: Chūō Kōron Sha, 1992), 278-279.

<sup>130</sup> Of the four post-stations surrounding Edo, Shinagawa had the greatest concentration of these inns, more than the three others combined. Yoshida Nobuyuki, *Toshi: Edo ni ikiru*, 173.

<sup>131</sup> Inns and teahouses selling sex emerged near post stations and religious institutions throughout Japan in the eighteenth century. Amy Stanley, *Selling Women*, 61.

Situated between the city and the station, Takanawa's liminal location provided an opportunity for other non-station palanquins to intrude into the sphere of Shinagawa station carriers. Freelance palanquin carriers from Shinagawa and licensed carriers from Edo were both free of the post-town restrictions, and therefore had a competitive advantage. These carriers were unrooted, flexible, and owned nothing but their muscles. They were attached to neither the station nor the inns.<sup>132</sup> Smart palanquin carriers often reached agreements with teahouses in Takanawa so that they could seek out potential guests in advance before reaching into the sphere of the Shinagawa station palanquins. Indeed, many Shinagawa freelancer carriers found opportunities in Takanawa and crossed the border into the neighborhood. In the mid-eighteenth century, their mobility even created a tenancy vacuum in Shinagawa, which caused anxiety for Shinagawa landlords.<sup>133</sup>

This aspect of Takanawa's mobility was problematic especially when the transport professionals had organizations and conceptions of space that did not align with the purview of shogunal officials. In 1850, an ex-convict named Yasutarō caught the attention of Ikeda Harimano-kami (also known as Ikeda Yorikata), who served as both Road Magistrate and Finance Magistrate (*kanjō bugyō dōchū bugyō kaneyaku* 勘定奉行道中奉行兼役). Yasutarō was accused of leading a gang of palanquin carriers and organizing robberies in Takanawa. Under his command, the group tricked travelers into teahouses and inns and forced them to squander

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<sup>132</sup> Yoshida Nobuyuki, "Kago-kaki," in Yoshida Nobuyuki ed., *Edo kan (Shiri-zu santo)* (Tokyo: Tōkyō Daigaku Shuppan Sha, 2019), 252- 253.

<sup>133</sup> Yoshida Nobuyuki, *Toshi: Edo ni ikiru*, 177. Yoshida Nobuyuki, "Kago-kaki," 252.



money on drinks and food and even took their clothes and personal effects. Officials later found out that Yasutarō had not merely lured guests into patronizing his son's teahouse in Southern Takanawa, but had also turned a local Takanawa gang into a sizeable, organized syndicate along the Tōkaidō Highway involving many teahouses.<sup>134</sup> In this way, Takanawa's liminal position enabled Yasutarō's group's mobility.

Yasutarō's criminal syndicate's activities not only reflected the character of the local economy, but also revealed how Takanawa-chō's multi-level administrative structure complicated governance for officials. Like the Shinagawa post town, Takanawa's economy relied on the combination of the transport industry, and its coalition with inns/teahouses, and most likely, brothels. This economic network transected the borders of administrative chō, extended to the post station, and even reached outside of Edo's boundaries. The Edo Magistrate oversaw all matters related to the commoner chō, but most of the Takanawa area was occupied by temples and shrines that had fallen into the jurisdiction of the temple magistrate (*Jisha bugyō* 寺社奉行). Yasutarō also demanded the attention of the intendant of the Musashi domain and the Kantō Regional Official (*Kantō torishimari shutsuyaku* 関東取締出役), which had recently been assigned by the shogunate in 1805 to police any criminal activities across the Kantō area in response to an intensifying rural crisis.<sup>135</sup> As the rural economy declined, many peasants sought better working opportunities as day laborers in the city. It is plausible that Takanawa-chō became

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<sup>134</sup> Tokyo daigaku shiryō hensanjo eds., *Dai nihon kinsei shiryō shichūtorishimari ruishū-3: shichū-torishimari no bu 3* (Tokyo: Tokyo Daigaku Shuppankai, 1974,) 349-385.

<sup>135</sup> See David L. Howell, "Hard Times in the Kantō: Economic Change and Village Life in Late Tokugawa Japan," *Modern Asian Studies* 23, no. 2 (1989): 349-71.

a popular destination due to its proximity to Kantō villages. Many of Yasutarō's associates, like Yasutarō himself, were “unregistered” (*mushuku* 無宿), and hence free from housing contracts as well as the surveillance of the chō. Yasutarō was never caught, and thus escaped his lawful punishment: being tattooed and exiled from Edo.<sup>136</sup>

The social chaos in the villages connected to the city via peripheral neighborhoods such as Takanawa complicated Edo's management. As David Howell's work demonstrates, the Tokugawa polity lacked both institutional and cultural mechanisms to cope with rapid commercialization in Kantō villages.<sup>137</sup> Overlapping jurisdictions were a common feature of the Tokugawa order, and it was also common to have to negotiate with several officials to bring itinerant criminals to justice. However, the administrative patchwork of Edo, the circuits of the highway system, and the fragmented nature of authority in the countryside caused problems at the sites where the roads met the city. With this structural challenge, combined with masses of drifting day-laborers, a concentration of teahouses and brothels, an influx of travelers, and an array of careening carts, it is not surprising that Takanawa became associated with urban social problems.

However, the mobility and vibrancy of Takanawa also made it one of ukiyo-e artists' favorite sites for the creation of “famous places.” The pictorial gazetteer of famous places, known as “*meisho zue* 名所図会,” has circulated throughout the publishing industry since the

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<sup>136</sup> Tokyo daigaku shiryō hensanjo eds., *Dai nihon kinsei shiryō shichūtorishimari ruishū-3: shichū-torishimari no bu* 3 (Tokyo: Tokyo Daigaku Shuppankai, 1974), 349-385.

<sup>137</sup> Howell, “Hard Times in the Kantō.”

late eighteenth century. Usually, in the form of a guidebook, the *meisho zue* would offer realistic, but poeticized, representations of landscapes across Japan. Their selection was based on artists/editors' anticipation of their commoner audience's tastes. As Robert Goree demonstrates, the busy scenes of Takanawa-chō made it a popular site which shaped perceptions of the great city of Edo's prosperity.<sup>138</sup> This was where the chō became a symbolic unit that helped construct the vision of the city through vivid details of everyday life. The creation and circulation of these woodblock prints incorporated the chō into the construction of Tokugawa urban spaces' cultural geography. However, underlying the cultural creation of "famous places" was a troubled and vibrant socio-economic reality, which came along with the flows of carts.

Situated at Edo's southern end, Takanawa possessed several traits that were integral to the depiction of a prosperous capital. Prominent ukiyo-e artists, such as Hasegawa Settan, Katsushika Hokusai, and Utagawa Kuniyoshi frequently brought the scenes of Takanawa alive. In their paintings and prints, Takanawa was packed with commoners – petty merchants at food booths and teahouses, drinking patrons, dancing folks among the ritual parades, and of course, the carts, cows, and horses. The shogun's power was also on display, as it had been in reality. The wooden notice board was a signature of Takanawa. Daimyos' alternate attendance queues were shown making their grand entrances through the gate, while commoners, forced to the edges of the streets, bowed to them.<sup>139</sup> At the same time, the place had literary resonance. Sailing

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<sup>138</sup> Robert Dale Goree, *Printing Landmarks: Popular Geography and Meisho Zue in Late Tokugawa Japan* (Cambridge, Massachusetts: Harvard University Asia Center, 2020).

<sup>139</sup> Utagawa Hiroshige II 歌川広重 二代, *Tokaidō Mesho No Uchi, Takanawa Ōkido* 東海道名所之内高輪大木戸; Utagawa Sadahide 歌川貞秀, *Tōkaidō Takanawa Fūkeio* 東海道高輪風景, 1862, 75\*37 cm, 1862.

junks regularly dotted the background, labeled “returning boats (*kihan* 帰帆).” A queue of wild geese would hover across the autumn moon (*shūgetsu* 秋月), which shined upon the curving coastline. The “returning boats” and the “autumn moon” were among the eight-site topos (*hakkei* 八景) as representative famous places in Edo.<sup>140</sup> Furthermore, the coastline brought the wooden gate closer to the viewer/reader, with the beaches stretching away from Edo, forming a picturesque curve that divided land and sea.

Even the trouble-making day laborers were at the same time symbols of urban prosperity in the making of Takanawa as a “famous place.” Ukiyo artists often captured these working men in Takanawa’s thriving street scenes. Conspicuous among them were the half-naked palanquin carriers in pairs, carrying clients back and forth along the road.<sup>141</sup> These characters expressed Takanawa’s position as an urban periphery adjacent to one of the busiest post towns on the Tokaidō Highway in Shinagawa. Prominent oxcart establishments, such as that of the famous ox-

<sup>140</sup> The Eight Views topos were first established by Song Di (c.1015 – c.1080) in the painting Eight Views of Xiao Xiang (*Xiao Xiang Bajing*). The eight views include the wild geese on the sandbank (*rakugan*), returning boats (*kihan*), the haze on a sunny day (*seiran*), the sunset snow (*bosetsu*), the autumn moon (*shūgetsu*), the night rain (*yeu*), the evening bell (*banshō*), and the glow of the setting sun (*sekishō*). Hiroshige first adopted this set of topos in the topography of Lake Biwa called Eight Views of Ōmi (*Ōmei hakkei* 近江八景) (1834), and then in several other collections as well. See Utagawa Hiroshige 歌川広重, *Tōto Hakkei: Takanawa Shūgetsu 東都八景高輪秋月*, 1839, 22.2 x 32.9 cm, MFA06936, Boston Fine Art Museum; Utagawa Hiroshige 歌川広重, *Tōto Shiba Hakkei: Takanawa Kihan 東都司馬八景高輪帰帆*, n.d., 23.3×34.4, n.d., Digital Collections of Keio University Libraries, <https://dcollections.lib.keio.ac.jp/ja/ukiyoe/0432..>

<sup>141</sup> Utagawa Hiroshige 歌川広重, *Tōto Meisho Takanawa Tsuki No Kei 東都名所高輪月の景*, 19M, 24.8\*34.7, 19M, Digital Collections of Keio University Libraries, [https://dcollections.lib.keio.ac.jp/ja/ukiyoe/0448](https://dcollections.lib.keio.ac.jp/ja/ukiyoe/0448;); Utagawa Hiroshige 歌川広重, *Edo Meisho Shiki No Nagame Takanawa Tsuki No Kei 江戸名所四季の眺め 高輪月の景*, 19M, (右)36.3×24.1,(中)36.5×24.1,(左)36.3×24.1, 19M, Digital Collections of Keio University Libraries, <https://dcollections.lib.keio.ac.jp/ja/ukiyoe/0451.>

master Senba Tarō, owner of the oldest oxcart establishments in ox-town, had earned enough capital to open a business that operated palanquins, in the same way as a previous generation of ox-masters had invested in the business of big-eight carts. As the ox-master family of a sizable establishment for multiple generations, the Senba family became a legendary figure celebrated in the Meiji-era memory of the “famous place” of ox-town.<sup>142</sup> They might have learned from their own experiences of sending oxcars to central Edo, or the lessons from the Shinagawa station palanquins, that a transport business could only survive if it followed the flow of new traffic in Edo.

Takanawa’s identity followed the flow of the carts to the center of the city as well. In 1853-1855, the City Magistrate confiscated several plots of commoner land in Takanawa Minami-chō to construct a new mansion for Sakai Dadamasu (Lord of Echizen Domain) and a navy base for costal defense in response to the arrival of Matthew Perry’s “Black Ships.” As a conventional practice of compensation, the Takanawa commoner landlords – craftsmen, not vehicular professionals – obtained substitute lands (*daichi* 代地) elsewhere in the city. Whether intended or not, the city magistrate settled the substitute lands in the former Matsuya chō, in the Hatchōbori neighborhood where the Takanawa ox-masters’ parking lot was located.<sup>143</sup> A few

<sup>142</sup> “Shinsen Tokyo meisho zue No. 33,” in *Fūzoku Gahō (rinji zōkan) No. 244* (Tokyo: Tōyōdō 1902), 20.

<sup>143</sup> “Takanawa Minami-Chō Goyōchi Ikken 4 Kan [4]高輪南町御用地一件 4 卷 [4],” n.d., National Diet Library 国立国会図書館, info:ndljp/pid/2611002. See map “Ansei Ni Nen Shi Gatsu Hatchōbori Zoku Takanawa Minami-Chō Daichi Ezu 安政二年四月八町堀続高輪南町代地絵図,” n.d., National Diet Library 国立国会図書館, info:ndljp/pid/2542351. It is noteworthy that only a few Takanawa commoner landlords received the substitute land. Other commoner tenants, such as teahouse owners, sudare merchants and day laborers, received only cash compensation and lost their livelihoods in Takanawa. See also appendix Map 4 Two Takanawa parking lots in Edo’s central area for the geographical relations in the neighborhood. According to the 1726 oxcart petition (“Ushimochi

steps away from the substitute land was the “cow’s grass bridge” (*ushi-no-kusa-bashi* 牛の草橋), located between Kyōbashi and Danjōbashi. It had earned this name because of the Takanawa cows’ prominence in this spot. One comic tanka featured the “cow’s grass bridge” in the 1856 *Kyōka Poetry Illustrated Guide to Famous Places in Edo* (*Kyōka Edo meisho zue* 狂歌江戸名所図会). “From the eighteen-chō of Takanawa substitute land to the ‘cow’s grass bridge,’ the Takanawa cows piss all over.”<sup>144</sup> This image about the Kyōbashi neighborhood may have been comparable to that of remote Takanawa. It symbolized the city’s affluence, the flows of people and goods, and in this case, the diversity of urban denizens – both humans and animals.

Behind the vision of prosperity was a troubling social reality that came along with the flows of the carts in central Edo, which in turn reinforced Takanawa’s identity as a “famous place”. For example, in 1857, Fujiokaya Yoshizō’s famous news diary, *Fujioka-ya Nikki* 藤岡屋日記, recorded an argument between a doctor serving the shogun and the ox-masters. On his way back from Edo Castle, the doctor had been annoyed by how the bulky, slow oxcarts had occupied the road and impeded traffic. Furious, the doctor dragged a cow-herder for several blocks and beat him with a stick. The oxcarts and the beasts were left on the street, disturbing the neighborhood’s peace. Neighborhood officials summarily informed two parties of interest. One messenger went to Takanawa to notify the boss, ox-master Senba Tarō. The other messenger was

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kyūden,” 159-160), the resolution in 1726 granted the ox masters only a small square on the west side of the river on what was labeled “sumichō” and “yanagichō” in the 1863 version of the map (“Shirauoyashiki” on the 1849-1862 version of the map).

<sup>144</sup> Tenmei Rōjin Takumi 天明老人 and Andō Hiroshige 安藤廣重, *Kyōka Edo meisho zue* 狂歌江戸名所圖會 (Place of publication not identified: publisher not identified, 1856), info:ndljp/pid/8369325.

sent a few blocks away to the ox-master's client, the Owari daimyo, one of the Tokugawa Noble Three Houses (*Go Sanke* 御三家). This had been a stable business relationship, and serving the prominent samurai houses had made Senba Tarō one of the most renowned ox-masters in Takanawa. The ox-masters in his establishment had a reputation of adorning themselves with showy borrowed plumes and usually ignored proclamations that exhorted them to give way to other samurai. Eventually, the shogun's doctor had to give in for interrupting the business of the great Bishū lord. To demonstrate his repentance, the doctor visited both the daimyo's mansion and the Takanawa oxcart workshop, and apologized with a few bottles of good sake.<sup>145</sup>

Together, these images added Takanawa to the cultural geography of “famous places” that collectively celebrated the capital's prosperity. The messages were clear. Takanawa was a vibrant location along coastal Tokaidō, well-traveled by both the high and the low. Takawana's geographical importance warranted meticulous representation of the landscape to help the viewers navigate the space, which was not only an instrumental function of the “famous place” prints, but also normalized the image of a prosperous capital city.<sup>146</sup> More importantly, Takanawa was where Edo would welcome travelers from the Tokaidō Highway, with a variety of commercial products: tea, food, festivals, and services such as transportation and even sex.<sup>147</sup> These symbols were attached to Takanawa's carts, its people, and its cows, and traveled with

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<sup>145</sup> Sudō Yoshizō, *Fujiokaya nikki. Dai 7-kan* 藤岡屋日記 第7巻 第7巻, ed. Suzuki Tōzō 鈴木棠三 and Koike Shōtarō 小池章太郎 (東京: San'ichi Shobō 三一書房, 1990), 539.

<sup>146</sup> Robert Goree, “Meisho Zue and the Mapping of Prosperity in Late Tokugawa Japan,” *Cross-Currents: East Asian History and Culture Review* 6, no. 2 (2017): 404–39.

<sup>147</sup> Laura Nenzi, *Excursions in Identity: Travel and the Intersection of Place, Gender, and Status in Edo Japan* (Honolulu: University of Hawai'i Press, 2008).

them to central Edo where the power relations of Edo society were displayed most conspicuously. Therefore, the image of a peripheral Takanawa epitomized the affluent city, well provisioned and governed by the shogunate.

### **Takanawa as a “Frontier” of Foreign Contact**

The arrival of foreigners in the late Tokugawa period reinforced Takanawa’s reputation as a site of urban chaos. The presence of foreigners complicated existing issues of jurisdiction. Takanawa was a convenient location as a middle point along the Tōkaidō Highway, between Edo and the nascent foreign settlement in Yokohama. As a result, it was a desirable location for foreign consulates. In 1859, Rutherford Alcock, the first British consul-general in Japan, recognized that “there was no finer site or grounds in Yeddo, and that it had been specially destined for the British Representative”, and set up the first British consulate in Tōzenji Temple in Takanawa, which was only a few blocks south of Shibakuruma-chō.<sup>148</sup> This decision inspired violent resistance. In 1861, fourteen rōnin from the Mito domain dashed into Tōzenji, the temporary British consulate, and attacked Alcock. They were angry that he had polluted the sacred Tōkaidō Highway during his recent tours. Alcock escaped unharmed, and the shogunate pacified the area, but he and his men were shaken. After the incident, the British briefly moved their consulate to Yokohama. However, this location proved less convenient to the capital, and

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<sup>148</sup> Rutherford Alcock, *The Capital of the Tycoon: A Narrative of a Three Year’s Residence in Japan; with Maps and Numerous Illustrations in Chromolithography and on Wood; in Two Volumes. Vol. 2 Vol. 2* (London: Longman, Roberts, & Green, 1863), 111.



the consul returned to the Takanawa area in 1866. This time, the diplomats settled in the Sengakuji temple area, adjacent to Shibakuruma-chō.<sup>149</sup>

The encounter with Westerners raised further questions related to the issue of animals in urban space. In response, the Takanawa ox-masters again deployed their “moving around the city” strategy. The arrival of Western sailors in Yokohama increased demand for beef, which changed the status of cows from “sacred” animals and working animals to a source of food.<sup>150</sup> The arrival of Westerners in the late Tokugawa period diversified cow’s role by introducing it as a source of beef. Many scholars, such as Daniel Botsman and Pieter de Ganon, have discussed the cultural and economic consequence of such change. Beef eating became the icon of cultural modernity, and a measure to fortifying Japanese bodies and the state itself.<sup>151</sup>

In Tokugawa Japan, both oxen and horses were considered working companions, essential to support the economic and political system of the shogunate. Animal labor in Japan did carry an implicit responsibility to care for the animal. They were believed to “deserve” a certain type of treatment, a notion of just, that in some ways resembles the idea of “on,” reciprocal obligation.<sup>152</sup> The ox-masters manifested this “reciprocal obligation” in physical terms. In 1738, seven ox-master households chipped in together and erected a monument inside of Ganshōji Temple,

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<sup>149</sup> Hugh Cortazzi, *Collected Writings of Sir Hugh Cortazzi*. (Tokyo; Richmond: Ed. Synapse ; Japan library, 2000), 232–33; Stanley Lane-Poole and F. V Dickins, *The Life of Sir Harry Parkes, K.C.B. and G.C.M.G., Sometime Her Majesty’s Minister to China & Japan*. (London: Macmillan, 1894).

<sup>150</sup> Pieter S. de Ganon, “The Animal Economy” (Ph.D Dissertation, Princeton University, 2011), UMI 3452597.

<sup>151</sup> Beef-eating: among the cultural avant-garde, at least, beef eating once vilified as defiling and cruel, became the icon of cultural modernity and a powerful emblem of Western civilization, away to reject the past and to literally internalize progress. Westerners in Japan also explicitly equated meat eating with progress. The Meiji government was also anxious to turn Japanese into beef-eaters. For beef was widely believed to be the premier body-building foodstuff, capable of fortifying Japanese bodies, and with them, the state itself, see Ganon..

<sup>152</sup> Ganon, “The Animal Economy,” 109.

located right in the ox-town. It was meant for the salvation of all the deceased souls of cows. When the monument was ruined by a big fire in 1806, the ox-masters made a new one again in 1828, to show their connection to their working companions.<sup>153</sup>

However, the rising demand for beef jeopardized Takanawa ox-masters' business and forced the ox-masters to rethink their relationship with their cows. Many cows that had previously been sent to the oxcart agencies were now killed and consumed, leading to a short supply of pack-cows and inflated cow prices. In 1863, the six major ox-master houses petitioned the shogun at length. They filled pages with praises of cows as “virtuous beasts” that had been serving people in both agriculture and transportation. They also complained about how cows were slaughtered to fulfill Westerners' desire for meat, regardless of the cows' physical conditions. As many strong cows were slaughtered as weak cows, despite the former's potential to benefit the people. However, rather than proposing a ban on beef consumption, or preserving healthy cows for their transportation business, as one might assume, the Takanawa ox-masters asked for permission to establish and manage a cattle-raising site in Yokohama. They offered to categorize cows based on their physical conditions, and sell the weak ones to foreign restaurants themselves.<sup>154</sup> The result of the petition was unclear, but it suggested yet another attempt by the Takanawa ox-masters to establish a “substitute land” outside of the Takanawa boundary. This time, it was even farther afield: outside the Edo city limits. After witnessing the rise of Edo's

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<sup>153</sup> Minato Kyōdo Shiryōkan(tōkyōto Minato Kuritsu)港郷土資料館(東京都港区立), *Edo dōbutsu zukan: Deau kurasu mederu : Kaikan nijjishūnen kinen tokubetsuten 江戸動物図鑑: 出会う・暮らす・愛でる : 開館二十周年記念特別展*, 2002, 39.

<sup>154</sup> “Shibakuruma-chō ushimochi kankei shorui,” reprinted in Tokyo-to eds., *Edo no ushi*, 141-146.

consumer economy, the Takanawa transportation specialists also anticipated the rise of Yokohama as a metropolitan port.

The Yokohama petition represented a desperate attempt by Takanawa ox-masters to cross the line dividing transport operations from cattle-keeping in response to the changing animal product markets in the late Tokugawa era. As proud Edo professionals, ox-masters had been distancing themselves from pure cattle-raising, which in Tokugawa Japan was associated with outcast communities.<sup>155</sup> However, in the Yokohama petition, the ox-masters emphasized their bovine expertise to explore the possibility of entering the new business of the foreigner-oriented beef market.

Throughout the Tokugawa-Meiji transition era, Takanawa ox-masters were forced to straddle the line in response to changing social and political circumstances. As a growing number of cow-raisers sold their livestock to foreign consumers, the shogunate responded with an edict in 1868, charging all cow-raisers in the Kantō area an extra tax on the foreigner-oriented animal trade. This time, the neighborhood chief of Shibakuruma-chō spoke on behalf of four remaining ox-master households and argued that cows used for transportation should be differentiated from cows raised as food.<sup>156</sup>

Takanawa ox-masters used the same reasoning to defend their rights as transport professionals in response to complaints about the presence of cows in crowded neighborhoods, this time articulated in terms of hygiene concerns rather than neighborhood inconvenience. In

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<sup>155</sup> Michael Thomas Abele, "Peasants, Skinners, and Dead Cattle: The Transformation of Rural Society in Western Japan, 1600-1890" (Ph.D Dissertation, Ann Arbor, University of Illinois at Urbana-Champaign, 2018).

<sup>156</sup> "Tokyo Metropolitan Archive (Tokyo-to Kōmonjokan)," n.d., fol. 632.B3.04, 632.C3.50, 605.A6.14.

May 1873, several cow deaths were reported in Shibakuruma-chō due to contagious disease. A month later, a city municipal edict banned all animal raising (both horses and cows) in dense urban areas due to potential health hazards.<sup>157</sup> In response, the Takanawa ox-masters petitioned to distinguish cart animals from other livestock. They claimed that they had burned all the carcasses at once to eliminate any hygiene hazards. This was a modern means of body disposal, in contrast with the Tokugawa routine of dumping dead bodies in Suzugamori, the designated execution grounds.<sup>158</sup> Ultimately, they convinced officials to carve out an exception for the cart animals that maintained their transport business.<sup>159</sup>

As the Takanawa ox-masters struggled to maintain their livelihood, Takanawa-chō, too, was subject to dramatic changes. In 1870, the Meiji Government began constructing the first railway between Shibashi and Yokohama, with Takanawa along the route. This project required large scale reclamation and embankment along the Takanawa coast. As the confiscation of coastal establishments proceeded, Takanawa's original community faced devastation. Fish wholesalers, boat craftsmen, teahouse owners, and of course, cart owners and transportation day laborers, who had all relied on coastal-loading areas to survive, were forced to relocate.<sup>160</sup> In other words, these petty urbanites, who had defined Takanawa's character, were forced to move in order to recreate Takanawa as the geographical center of new forms of transportation modernization. Thus, the

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<sup>157</sup> Tokyo Metropolitan Archive (Tokyo-to kōmonjokan), 607.B7.14.

<sup>158</sup> For more on the routine for disposing deceased cows, see "Ushimochi kyūki," 151. For more about the Suzugamori execution grounds in Daniel Botsman, see *Punishment and Power in the Making of Modern Japan* (Princeton University Press, 2005), 20-23.

<sup>159</sup> Tokyo Metropolitan Archive (Tokyo-to kōmonjokan), 607.B7.14.

<sup>160</sup> Yoshida Nobuyuki, "Takanawa Kaigan," in Yoshida Nobuyuki 吉田伸之 and Itō Takeshi 伊藤毅, eds., *Infura* インフラ (Tokyo 東京: Tōkyō Daigaku Shuppan Sha 東京大学出版会, 2010), 269–70.

creation of the modern capital of Tokyo came at the price of petty Takanawa residents, whose interests had proven peripheral in the national project.

Takanawa continued its reign as a transportation-oriented “famous place” in the Meiji-era city, even as the oxcart gave way to other technologies, old and new. In the early Meiji period, most Tokugawa-era transport devices were still running on the streets of Tokyo. In 1875, there were at least five hundred times as many big-eight carts than cargo horse-carts in Tokyo, and three-hundred times more big-eight carts than oxcarts. The last few oxcarts remained until as late as the 1890s despite the densifying urban environment and rising concerns about hygiene.<sup>161</sup> Meanwhile, rickshaws, a fashionable wheeled replacement for palanquins but not oxcarts, had just begun their golden age. Japan’s first railway began operations in 1872. The scene of the steam railway passing through the Takanawa coast was again captured by the ukiyo-e artists as a new image of Tokyo’s famous place. Tokyo’s Takanawa-chō was still fast, still fashionable, and still on the move.

Throughout the Tokugawa period, the urban transport industry continued to define Takanawa’s identity with its flows. This identity followed the carts in both Takanawa and central Edo, and even had a lingering effect in the Meiji period. Shōsai Ikkei’s depiction of the site of the Kyōbashi Bridge features seven stout cows crossing this famous bridge in central Edo. These

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<sup>161</sup> Naikaku tōkeikyoku 内閣統計局 and Nakamura Takafusa 中村隆英, eds., *Nihon teikoku tōkei nenkan 日本帝国統計年鑑* (Tokyo 東京: Tōyō Shorin, Hara Shobō 東洋書林: 発売原書房, 1996). Tokyo-to eds., *Edo no ushi*, 50-53.

Takanawa cows occupy the center of the busy street and shove other passengers to the side.<sup>162</sup> Being the guests of the neighborhood, the cows assert a boldness that came to define the Kyōbashi area [Image 1 Ikkei Shōsai 昇齋一景, *Tokyō sanjūrokkei Kyōbashi* 東京三十六景 京橋]. The 1902 version of *New Famous Places of Tokyo* (*Shinsen Edo meisho zue* 新撰江戸名所図会) told of the legend of another ox-master, Yoshida. Starting as a servant in Senba Tarō's oxcart workshop, Yoshida worked his way up and soon became the owner of a stately mansion in the Shibakuruma-chō and earned the honorific title “Sir Yoshida” (*Yoshida goten* 吉田御殿). His success in the central chō boosted not only his reputation but that of the Takanawa “ox-town” at the southern periphery of Edo as well.<sup>163</sup> In other words, Takanawa ox-masters' reputation had become an integral part of the “famous places” with which they were associated over time. Takanawa identity was fluid, both literally and symbolically: it moved with the people, the beasts, and the business.

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<sup>162</sup> Shōsai Ikkei 昇齋一景, *Tokyō sanjūrokkei Kyōbashi* 東京三十六景 京橋, 1871, 36.1\*25.0, 1871, 83200171, Edo Tokyo Museum. Tokyo Digital Museum.

<sup>163</sup> “Shinsen Tokyo meisho zue dai 33 hen,” in *Fūzoku gahō* (rinji zōkan) No. 244 (Tokyo: Tōyōdō, 1902), 19-22. Also, see Kubota Gorō 窪田五郎, *Nihon gyūshi* 日本牛史 (Yokohama 横浜: Koyasu Nōen Shuppan Bu 子安農園出版部, 1930), 143.

Image 1 Ikkei Shōsai 昇齋一景, Tokyō sanjūrokkei Kyōbashi 東京三十六景 京橋<sup>164</sup>



Conclusion Examining the dynamics of Takanawa provides an opportunity to acknowledge the reconceptualization of the urbanization process of early modern Japan. James McClain uses the term “chōnization” to describe this transformation. It refers to the “appropriation of the space, institutions, and cultural motifs of the city by its merchants and artisans at the expense of the government and the ruling samurai status group.”<sup>165</sup> Along a similar line, Japanese scholars have also demonstrated how merchants in “central neighborhoods (*Manaka naru machi (chō)*),”

<sup>164</sup> Shōsai Ikkei 昇齋一景, *Tokyō sanjūrokkei Kyōbashi* 東京三十六景 京橋.

<sup>165</sup> McClain, “Edobashi Power Space and Popular Culture in Edo and Paris,” 127.

dominated by purveyors to the shogun and samurai houses, declined and gave way to flourishing small and unrecognized forms of commerce located across the city and in its outskirts.<sup>166</sup> The rise of Takanawa's cart industry, in which the packhorse business declined and carts penetrated the heart of Edo, can be understood as part of this larger narrative.

However, the case of Takanawa has broader implications, especially regarding the relationship between center and periphery. Scholars in Japanese history have long debunked the simple dichotomy of center and periphery, in both abstract and concrete terms.<sup>167</sup> Marcia Yonemoto goes further, explaining that in the urbanization process, the transformation of the "center" over time from authority to autonomy, was not linear, but was instead a constant interaction between central authority and shifting forms of local power. She proposes that "centrality" was a "relational spatio-political concept", and projects it against the "integrated yet decentralized state structure" of Tokugawa Japan in which "the center was inherently dependent on the support of those supposedly in its peripheral."<sup>168</sup> The case of Takanawa-chō demonstrates that "periphery," too, was not only a relational spatio-political concept, but was fluid. As Takanawa's ox-masters and big-eight cart businesses encroached upon the heart of the city, they brought a peripheral chō into Edo's center, spatially, economically, and culturally. This

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<sup>166</sup> See Iwada Kōtarō, "Toshi keizai no tankan," in Yoshida Nobuyuki eds., *Kinsei no nihon Vol. 9 Toshi no jidai* (Tokyo: Chūō Kōron Sha, 1992), 270.

<sup>167</sup> Wigen, *The Making of a Japanese Periphery, 1750-1920*; David Luke Howell, *Capitalism from within: Economy, Society, and the State in a Japanese Fishery* (Berkeley: University of California Press, 1995); Philip C Brown, *Central Authority and Local Autonomy in the Formation of Early Modern Japan: The Case of Kaga Domain* (Stanford, Calif: Stanford University Press, 1993); Luke Shepherd Roberts, *Performing the Great Peace Political Space and Open Secrets in Tokugawa Japan* (Honolulu: University of Hawai'i Press, 2012), <http://muse.jhu.edu/books/9780824861155/>.

<sup>168</sup> Marcia Yonemoto, "Nihonbashi: Edo's Contested Center," 50.



phenomenon complicates the binary relationship between samurai authority and chōnin autonomy in two ways. Competition between commoners was fierce, as they jostled for geographical and economic space in the city, and asserted their small groups' autonomy. Additionally, Takanawa-chō's blurry boundary and politically liminal position contradicted the official conception of political space and posed unprecedented administrative challenges to authority.

McClain's concept of chōnization captures the rising commoner agency as a general trend in Edo's urbanization, and the case of Takanawa demonstrates the construction of a chō from within. The Takanawa cart professionals, like their other commoner neighbors, took incremental acts to participate in the re-ordering of urban space. Through daily negotiations, they learned to assert their bargaining power, and to manipulate their claims. Most importantly, they learned how to capitalize on their mobility. In turn, along with their neighbors and rivals, they defined what it meant to be a chō, not only as an administrative/spatial unit but, as an interest group bounded by chō-based occupational identities. Takanawa and the cart operators flagged the first stage of the dissertation, which was a story about the small-time, the local, the underexamined, but equally important in defining the character of the metropole.

Takanawa's place in the imagined city also shifted over time and produced Edo's cultural geography in a symbolic level. In the late seventeenth and eighteenth centuries, Takanawa was a "famous place," integral to the urban imagination, a symbol that could stand-in for the city itself. However, in the nineteenth century, it once again began to be understood as a borderland. It was an administratively complicated region that stood between Edo and the hinterland, and

ultimately, between foreigners and Japanese. Mid-nineteenth-century Takanawa was still famous, but it was known for an array of problems related to traffic, competition for space, disease, and crime. Now a uniquely problematic site, Takanawa was among the first regions in Edo/Tokyo to face the “social problems” that would need to be defined and solved in a modern metropolis. Its problems inspired the city and its residents to adjust its infrastructure and approaches to administration. In that sense, it is Takanawa, not the city center, that might best encapsulate the story of how the “traditional city” of Edo became the modern metropolis of Tokyo.

## CHAPTER 2

### THE RISE OF THE RICKSHAW:

### URBANITES AND ANIMALS IN THE EVOLVING URBAN SPACE

#### Introduction

Image 2 Tōkyō Ytsuyama shita kaigan jōkisha tetudō no zu 東京八ツ山下海岸蒸気車鉄道之図 (Picture of the Steam Railway in Takanawa Coast in Tokyo)<sup>169</sup>



<sup>169</sup> Utagawa Hiroshige III 歌川広重 三代, *Tōkyō Yatsuyama Shita Kaigan Jōkisha Tetudō No Zu 東京八ツ山下海岸蒸気車鉄道之図* (Picture of the Steam Railway in Takanawa Coast in Tokyo), October 1871, October 1871, Tokyo Metropolitan Library 東京都立図書館, [https://www.library.metro.tokyo.lg.jp/portals/0/edo/tokyo\\_library/modal/index.html?d=5400](https://www.library.metro.tokyo.lg.jp/portals/0/edo/tokyo_library/modal/index.html?d=5400).

Tokyo, 1871.

Hiroshige III captured a scene of Takanawa, the passage between Shinagawa post station and the capital (featured in Chapter 1) [Image 2 Tōkyō Ytsuyama shita kaigan jōkisha tetudō no zu 東京八ツ山下海岸蒸気車鉄道之図 (Picture of the Steam Railway in Takanawa Coast in Tokyo)]. Japan's first steam railway roared past the newly reclaimed overpass in place of the former coastal teahouses and fisheries. There were no oxcarts. Nor were there any palanquins, big-eight carts, single packhorses—all theretofore established symbols of this “famous place” of Edo. Instead, the street is packed with imported Western-style horsecars and various forms of rickshaws.

This was only one year after the invention of the rickshaw. In the same year, *Shinbun Zasshi* reported: “Now, the numbers of rickshaws increased every day and have reached 25,000, compared to 10,000 of palanquins. There are already 5,000 pullers, and the number is still growing. Within less than a year, this new transportation has forced two-thirds of the palanquins out of business.”<sup>170</sup> It was a phenomenal number considering the depopulation immediately after the Meiji Restoration: Edo's 1.3 million inhabitants dropped to approximately 800,000 in the first few years of Meiji.<sup>171</sup> In other words, there was one rickshaw for every thirty Tokyo

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<sup>170</sup> “Jinrikisha nimangosen dai-Yōfukuya banshō kagoya botsuraku 人力车两万五千台--洋服屋繁昌駕籠屋没落,” 1871-5, *Shinbun Zasshi* 新聞雑誌, reprinted in Meiji Hennenshi Hensankai 明治編年史編纂會, *Shinbun shūsei Meiji hennenshi* 新聞集成明治編年史 (Tokyo 東京: Rinsensha 林泉社, 1936), vol.1 376. “Tokyo hanei mariuta 東京繁荣鞠唄 (Tokyo Prosperity Song),” 1874-12-8, *Yubin hochi*, in Meiji Hennenshi Hensankai 明治編年史編纂會, *Shinbun shūsei Meiji hennenshi* vol. 2, 244; “Kaika shindai no giei 開化新題の戯詠,” 1875-11-30, *Asano Shinbun*, in Meiji Hennenshi Hensankai 明治編年史編纂會, vol. 2 440.

<sup>171</sup> David Peter Phillips, “Intersections of Modernity and Tradition: An Urban Planning History of Tokyo in the Early Meiji Period (1868-1888)” (Ph.D Dissertation, University of Pennsylvania, 1996), 9.

citizens. The Meiji journalist praised the rapid development of the rickshaw, attributing its success to the “effectiveness (kōryoku 効力) of mechanical power.”<sup>172</sup>

The emergence and rapid spread of the rickshaw also attracted the curious eyes of foreign visitors. A Chinese diplomat, Huang Zunxian, praised the rise of rickshaw in his *Riben zashishi* (Miscellaneous Poems on Japan): “[The contrast between palanquins and rickshaws] precisely presented the clumsiness of the old days and the cleverness of today (今昔巧拙不侔如此).”<sup>173</sup>

What was perceived by the Chinese diplomat as the sign of modern progress was seen as exotic by Western travelers. Joseph Alexander Hübner, a former Austrian diplomat, visited Tokyo in the summer of 1871 and was fascinated by the stream of rickshaws running down the fancy streets of the “great and mysterious capital of Japan.” He wrote: “Now imagine a file of these droll conveyances full of women, bonzes, singers, dancers (these last always recognizable from the exaggeration of their head-dress), in a word, Japanese exactly like the pictures you have seen a thousand times painted on vases, screens, or rice-paper, and you will be able, without any great effort of imagination, to form a just idea of this great ‘capital of the East.’”<sup>174</sup> In both cases, rickshaws had grown to symbolize the Japanese metropolis, although with different interpretations. In fact, among the symbols that came to define a modern metropolis, especially

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<sup>172</sup> “Jinrikisha ni man go-sen dai 人力車二万五千台,” *Shinbun Zasshi* 新聞雜誌, 1871-5,

<sup>173</sup> Huang Zunxian 黃遵憲, *Riben Zashi Shi* 日本雜事詩 (Changsha 長沙: Fuwentang 富文堂, 1898). My translation.

<sup>174</sup> Alexander Hübner and Mary Elizabeth Herbert, *A Ramble Round the World, 1871, Vol. 1* (London: Macmillan, 1874), 405–406.

in Asia, at the turn of the century—gaslights, tramways, the telephone, the electric bulb—the rickshaw was the only Japanese invention.

Historians in modern Asian history have examined the rickshaw from labor history and economic history because it was a prominent feature of Asia’s cityscapes.<sup>175</sup> However, few works systematically discussed how the rickshaw—an organically driven technology, an exported global commodity, and an industry—was integral to the nation-building and even empire-building process.

This chapter offers two dimensions of this issue. First, this chapter treats the rickshaw as a commercialized technology. It discusses how the invention, innovation, technological development, and marketing of rickshaw were subject to changes in the urban environment and the Japanese political context, especially against the backdrop of Japan’s civilizing project and treaty revision efforts. As a quintessential Japanese invention, the rickshaw relied much on its hybrid design to succeed: first by combining Western horsecars and later by borrowing popular elements from its export destinations in Asia. However, it soon attracted criticisms concerning Japanese intellectuals and curious foreign visitors who accused rickshaws of being “uncivilized”

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<sup>175</sup> Saito Toshihiko’s *Jinrikisha no Kenkyū* provides a range of details about the rickshaw industry as well as lives of rickshaw pullers, but he is not interested in articulating the cultural dynamics embedded in rickshaws. Fung Chi Ming’s monograph *Reluctant Heroes: Rickshaw Pullers in Hong Kong and Canton, 1874–1954* offers a social history of Hong Kong’s rickshaw pullers with little mentioned on the rickshaw industry in Japan. Peter J Rimmer’s article “Structure, Conduct, and Performance of the Rickshaw Industry in East and South East Asian Cities, 1869–1939” focuses on the economic aspect of rickshaw industry, but also omits the cultural implications of rickshaws. Saitō Toshihiko 齊藤俊彦, *人力車の研究 Studies of jinrikisha*. Fung Chi Ming, *Reluctant Heroes: Rickshaw Pullers in Hong Kong and Canton* (Hong Kong: Hong Kong University Press, 2005). Peter J. Rimmer, “Structure, Conduct, and Performance of the Rickshaw Industry in East and South East Asian Cities, 1869–1939,” in *Transport Policy, Management and Technology Towards 2001: Selected Proceedings of the Fifth World Conference on Transport Research* (Ventura, CA: Western Periodicals Co., 1989), 3: 597–611.

and “inhuman.” In this process, Japan’s rickshaw experiences became a part of what Prasenjit Duara identified as a “schizoid Japanese self-perception” in the Meiji period. In this Meiji paradox, Japan simultaneously identified with and reacted against the Western imperialist power. Nationalists were eager to earn recognition from Western powers but also felt victimized at the same time.<sup>176</sup> The rickshaw business experienced a similar paradox, straddling between the line between “civilized” and “backwardness.” By exporting rickshaws to the colonial and semi-colonial Asian market, the Japanese manufacturers and officials redefined their position in the hierarchical global order and project Japanese technical power to Southeast Asia.

Secondly, examining the organic driving forces that enabled the spread of rickshaws introduced a non-human dimension. The juxtaposition of draft animals and human pullers became increasingly problematized during the Meiji period, especially against the backdrop of the national project of “civilization and enlightenment.” In such context, the nineteenth-century dualism suggested a categorical distinction used to debate the character of Japan as the country modernized: East versus West, rationality versus superstition, savagery versus civilization, and a slow disentangling of humans from animals and society from nature.<sup>177</sup> However, many scholars had demonstrated that the human-animal relationship and modernity did not always play out along neatly bifurcated lines. For example, Ian Miller’s *Nature of the Beasts* discussed the contested culture of the juxtaposition of living animals and people in the imperial zoo. This chapter presents a more ubiquitous juxtaposition in the everyday transport business. On the

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<sup>176</sup> Prasenjit Duara, “The Imperialism of ‘Free Nations’,” in *Imperial Formations*, by Ann Laura Stoler et al. (Santa Fe; Oxford: School for Advanced Research Press : James Currey, 2007), 211.

<sup>177</sup> Ian Miller, *Natures of the Beasts*, 3 and 27.

public streets of Edo/Tokyo, humans and animals even became more intertwined physically and symbolically. The redefinition of animals' roles was closely related to the construction of a body of productive citizens.

### **The Rise of Rickshaws**

On a rainy May day in 1867, Suzuki Tokujirō (鈴木徳次郎), a clerk of a grocery store in Edo, hired a palanquin on his way back to Edo from a pilgrimage trip. The shaky palanquin slowly carried him towards the Shinagawa station along the causeway of Edo Bay. Tokujirō was annoyed by the palanquin carriers, as they kept coaxing him for more tips, cursing and swearing all the way—a common practice by carriers in this area (see Chapter 1). “What an abominable deed,” he thought. As he considered how to solve such a problem, a fully loaded big-eight cart, pulled by one man, passed him. “It would be nice to let passengers ride on such cart,” he mused, “It would only require one man instead of two carriers like the palanquins, hence no need to bear bad conversations. It would be cheaper, too.”<sup>178</sup>

In 1868, Izumi Yōsuke (和泉要助), a former servant of Chikuzen Domain (Fukuoka Prefecture), settled himself in Hakuya-chō in the Nihonbashi area, the heart of Edo. He started a new job in a Japanese restaurant. As an ordinary resident in Edo/Tokyo, he was amazed at the horse-drawn carriages, which had newly appeared on the street. Horses in Edo had never been

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<sup>178</sup> Suzuki Tokugarō 鈴木徳次郎, “Jinrikisha hatsumei nikki 人力車発明日記,” in Hayashi Wakaki 林若樹, “Jinrikisha to Gyūnabe 人力車と牛鍋,” *Nihon to Nihonjin Rinjigō Kaiko Kanbyakunen 日本と日本人・臨時号* 「回顧半百年」, September 1917.



attached to such a delicately manufactured passenger carriage. It was light, convenient, and different from any carts he had ever seen. “What if we replaced horses with humans,” he thought to himself, “it would be much more convenient to move around freely on the street.”<sup>179</sup>

The grocery clerk and the restaurant worker met one another while catering for Meiji Emperor’s first imperial trip to Tokyo. Chatting after work, they found themselves considering the same idea: a new type of human-powered carts designed for ordinary Japanese passengers. With deft hands, Izumi had been trying out different prototypes by himself. However, it was not until Suzuki brought on board Takayama Kōsuke (高山幸助), a professional cart craftsman, that the team of three finally got on the right track.

The rickshaw was a hybrid invention. In retrospective interviews and notes, Suzuki and Izumi each tried to take credit for the original idea of the rickshaw.<sup>180</sup> They benefited from different inspirations: Suzuki was inspired by the big-eight cart, the traditional man-pulled cargo cart, in Edo’s periphery. On the other hand, Izumi was struck by the Western design of imported horsecars at the center of Tokyo. However, the combination that finally brought about the prototype of rickshaws. The two-wheeled conveyance was a door-less carriage, something shaped between the aristocratic oxcart in Kyoto and the Western horsecar. The two long shafts attached to the cart resembled the big-eight cart, which stabilized the puller with the vehicle.

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<sup>179</sup> Noguchi Katsuichi 野口勝一, “Jinrikisha No Hatsumei 人力車の発明,” *Fūzoku Gahō 風俗画報*, October 1896.

<sup>180</sup> Suzuki’s *Jinrikisha hatsumei nikki* was published in 1873 (Meiji 6) with Hayashi Wakiki’s comments; Izumi’s account was based on the personal interview by the journalist Noguchi Katsuichi and published in 1896 (Meiji 29). There were several discrepancies in the details during the invention process, which indicated conflicts among the group.

In 1870, the three-men startup received official permission from the Tokyo municipal government to run the new business. They chose to start operating in Nihonbashi, the symbolic center of Japan. The new form of the vehicle did attract a huge crowd intrigued by curiosity. It was something familiar, but also something new.

Suzuki's rickshaw advertisement flier featured the excitement that rickshaw could bring to residents of the new capital, it also captured the atmosphere of the new era [Image 3 An advertising flier of the rickshaw business, 1870 ]:

In this splendid time under the sacred reign, we are proud to present this newly manufactured rickshaw, made without distinction between the rich and the poor, the noble and the lowly, and fulfilled with extra ingenuity. When everything else has become so expensive, the rickshaw provides you a trip at a low price. It serves you instantly as needed, thanks to its convenient design. It runs at a speed of five *ri* per hour regardless of wind or rain. Moreover, with one man pulling the cart, there will be no oscillation. Sitting back in the comfortable chair allows you to enjoy the scenery freely from all directions, clearing off the gloom. The carriage height was specially designed to protect all passengers from harm, including the elderly, children, and ladies. So please do try a rickshaw. Once you do, you will want to ride them again.

Nihonbashi Office, Gofuku-Chō Tarujinmichi  
Sagami-ya, Tokuji-ra <sup>181</sup>

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<sup>181</sup> Tōkyōto 東京都, *Tōkyō shishikō. shigai 51 東京市史稿 市街篇第51* (Tokyo 東京: Tokyoto 東京都, 1973). My translation.

Image 3 An advertising flier of the rickshaw business, 1870



This marketing strategy, which also featured in the group’s operation petition to Tokyo officials, emphasized the rickshaw’s hybrid nature. The Izumi group tried to demonstrate to their fellow citizens that their invention, the rickshaw, contributed to the “splendid time.” The rickshaw borrowed a Western-style design, but the carriage was smaller than a horsecar, making it very convenient to navigate around the narrow, unpaved streets of Tokyo without disturbing pedestrians. Moreover, the rickshaws were safer than carriages because they were driven by rational men rather than unthinking beasts and could maneuver the conveyances to avoid one another on narrow streets. Finally, the advertisement suggested that a smart Tokyo citizen would

choose the rickshaw because it was cheaper than the expensive and privileged horsecars and more upscale than the two-man-carried palanquins.<sup>182</sup>

A contemporary journalist attributed the quick spread of rickshaws to their design, which showcased the “effectiveness of the mechanical power (*Kikai no kōryoku* 機械ノ効力).”<sup>183</sup> The term “mechanical” indicated an initial impression of the rickshaw as a carefully designed device. It was not a machine per se. A canonical definition of the machine indicates a sharp binary between humans and the machine, which is “a complex of non-organic agents for converting energy, for performing work.”<sup>184</sup> However, the mechanical structure, wheels, the position of the axle, and carriage seemed to be more important for the writer. In a way, the design of the rickshaw facilitated transforming the human body into part of the machine. The combination of the rickshaw’s mechanical design and the use of rational human beings, as advertised by the inventors, ensured a safer and more stable ride. The emphasis on stable rides resonated with the modern need to eliminate interval oscillation. According to Wolfgang Schivelbusch, one of the most attractive features of the modern steam railway was the mechanic stability that aimed to end organic oscillation—a defining feature of pre-modern transportation driven by draft

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<sup>182</sup> Tokyo-shi, *Tōkyō shishikō. shigai*, 51: 163–166.

<sup>183</sup> “人力车两万五千台--洋服屋繁昌駕籠屋没落 (25,000 Rickshaws: Dressmakers prospered and Palanquins Declined),” 1871-5, *Shinbun Zasshi*.

<sup>184</sup> Lewis Mumford, *The Myth of the Machine: Technics and Human Development* (London: Secker and Warburg, 1967).

animals.<sup>185</sup> However, in reality, constrained by the road conditions and before the introduction of air-filled rubber tires, rickshaws trips were still bumpy and uncomfortable.

The rickshaw seemed to answer the Meiji Emperor's Charter Oath, that "all classes high and low, shall be united," and that "the common people ... shall all be allowed to pursue their own calling."<sup>186</sup> There was no distinction of the old status order on the rickshaw, no distinction on samurai or commoners. It was designed for all: rich or poor, elders, children, and ladies. The leveling of people marked the distinctive quality of the Meiji era.

However, the "leveling effect" was not necessarily positive from individual perspectives. The descending roles of former samurais best manifested this. After the Meiji Restoration, impoverished former samurai were forced to make their own living through unskilled labor. This became one controversial source of labor for the rickshaw industry. In 1874, the Scottish scholar J.F. Campbell wrote down his observations on his trip along the Tokaidō "ruined gentle folks and soldiers and coolies put themselves into the shafts, the farmers got inside."<sup>187</sup> At the same time, he also described how even the lower classes could afford an enjoyable ride on the rickshaws, breathing the "liberating air" without political and social constraints.<sup>188</sup> The social reordering also mirrored what happened in China at the end of the Qing Dynasty. As David Strand demonstrates,

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<sup>185</sup> Wolfgang Schivelbusch, *The Railway Journey: The Industrialization and Perception of Time and Space* (Berkeley: University of California Press, 1986).

<sup>186</sup> McLaren, W.W, *Japanese Government Documents*, quoted in Wm. Theodore De Bary, Carol Gluck, and Arthur E Tiedemann, eds., *Sources of Japanese Tradition Vol. 2 1600 to 2000* (New York; Chichester: Columbia University Press, 2006), 672.

<sup>187</sup> J. F. Campbell, *My Circular Notes. Extracts from Journals, Letters Sent Home, Geological and Other Notes, Written While Travelling Westwards Round the World, from July 6, 1874, to July 6, 1875*. (London: Macmillan and co., 1876), <http://catalog.hathitrust.org/Record/008588194>.

<sup>188</sup> Saitō Toshihiko 齊藤俊彦, *人力車の研究 Studies of jinrikisha*.

many Manchu bannerman – like the Japanese samurais – became rickshaw pullers after losing their privilege in the old regime.<sup>189</sup>

## Why Did the Rickshaw Spread So Quickly?

### *Rickshaw Pulling: A Solution to Urban Poverty*

Rickshaws quickly spread across Japan. In 1871, one year after the first rickshaw appeared in Nihonbashi, there were already 25,000 rickshaws and 5,000 pullers in Tokyo alone, and the number of pullers continued to rise significantly. This number had more than doubled the total number of palanquins (10,000). Almost simultaneously, multiple merchants brought rickshaws to Osaka through different channels.<sup>190</sup> The spread of rickshaw was astonishingly quick, especially compared to what happened in the Tokugawa period; it had taken almost a hundred years before the human-powered big-eight cart in Edo took its own from Osaka, which was known as the beka-cart.

Many factors contributed to the rapid proliferation of rickshaws. As Japanese intellectuals, such as Yanagita Kunio, reflected a few years later, it was rickshaw pulling—rather

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<sup>189</sup> David Strand, *Rickshaw Beijing*. Higuchi Ichiyō's novel, *Wakarejimo* (別れ霜 1892) and *Jyūsanya* (十三夜 1895) and featured the image of the socially “descending” rickshaw pullers, who originally came from well-off families but “fell” into the humble profession. These novels – resonating with Lao She's most well-known novel, *Camel Xiangxi* (駱駝祥子 1937)-- epitomized poor, highly exploited urban workers in expanding, evolving, and disordered metropolis in Asia. See Gao Xia 高峽, “Jinrikishafu e kakō no genshō nitsuite – Higuchi Ichiyō bungaku no jinrikishafu motif “人力車夫へ「下降」の現象について--樋口一葉文学の人力車夫モチーフ,” *Tagen Bunka 多元文化 / Nagoya Daigaku Kokusai Gengō Bunka Kenkyūka 名古屋大学国際言語文化研究科編*, no. 8 (2008): 135–48.

<sup>190</sup> Miyamoto Mataji 宮本又次, “Osaka no jinrikisha 大阪の人力車,” in Miyamoto Mataji 宮本又次, ed., *Ōsaka no kenkyū dai 5-kan. Fūzokushi no kenkyū, Kōnoike Ke no kenkyū 大阪の研究第5巻 風俗史の研究・鴻池家の研究* (Osaka 大阪: Seibundō Shuppan Kabushiki Kaisha 清文堂出版株式會社, 1970), 408.

than rickshaw riding—that drove the development of the rickshaw business.<sup>191</sup> The new profession of pulling a rickshaw became a viable solution to the rising problem of urban poverty, not only for the city officials but also for the enlarging urban poor population.

First of all, contrary to the abstract egalitarian promise of the Charter Oath, the Meiji Restoration only reinforced pre-existing hardship for the underclass. The immediate consequence of the Edo to Tokyo transition was not prosperity but depopulation and unemployment. The fall of the Tokugawa shogunate, the abolition of the alternate attendance system, and the Meiji restoration led to the depopulation of the city's samurai class. Only 40% of the former samurai population remained in the capital. With more than half of the samurai population gone, commoners who had been making their living based on services to the samurai class also lost their jobs.<sup>192</sup> To make matters worse, the surrounding rural areas in the Kantō region had been suffering from economic hardships since the late nineteenth century. Starving peasants have been leaving for Edo for employment, and with the samurai gone, they found themselves penniless

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<sup>191</sup> Yanagita Kunio 柳田国男, *Meiji Taisho Shi Seisō-hen 明治大正史 世相篇* (Tokyo 東京: Asahi Shinbunsha 朝日新聞社, 1930), 174–77.

<sup>192</sup> At the end of the Tokugawa period, there were 1.3 million people in Edo, half of which were samurai. About 30,000 of the samurai population was Hatamoto upper ranking samurai, daimyos on their alternate attendance duties, domain officials, and their families. After the Meiji Restoration, over half of the Hatamoto samurai and their families, house servants, and the whole Tokugawa house moved to Shizuoka. At the same time, 4,500 samurai chose to forfeit their samurai status and became merchants and peasants. Only 5,182 former bakufu officials remained in Edo. The total population dropped to approximately 800,000. Without the obligation of the alternative attendance, domain lords and their officials had no reason to stay in Tokyo and returned to their original domains. Only 60,000–70,000 samurai remained, which was about 40% of the previous samurai population. Large tracts of land in the capital were vacated as the samurai estates were handed over to the Meiji government. Yokoyama Yuriko 横山百合子, *Edo Tokyo no Meiji Ishin 江戸東京の明治維新* (Tokyo 東京: Iwanamishoten 岩波書店, 2018), 26.; David Peter Philips, *Intersections of Modernity and Tradition: An Urban Planning History of Tokyo in the Early Meiji Period, 1868–1888* (PhD diss.. University of Pennsylvania, 1996), 9.

and jobless and with no homes to which to return.<sup>193</sup> Thus, the shrinking capital and the rise of urban poor became a significant problem for the new Tokyo city government.

The problem of urban poor and unemployment was encapsulated in Takanawa as well. The Takanawa-Shinagawa area—a dynamic post-town economy—had been a busy spot for the palanquin business since the Tokugawa period (see Chapter 1). The rise of rickshaws forced two-thirds of palanquins out of business within only one year. Former palanquin carriers found themselves on the edge of unemployment. Holding a grudge, some carriers started to harass rickshaw pullers. However, they soon realized that instead of fighting against the trend, rickshaws provided a promising employment option. It did not take long before all palanquin carriers turned into rickshaw pullers.<sup>194</sup> Others soon followed: impoverished farmers who fled into the city, poor college students who needed a night-time job to pay their tuition, and former samurai who had lost their privileges and suffered from economic hardships. Rickshaw pulling became a safety net and a survival strategy for the urban poor during the Tokugawa-Meiji transition.

For the Tokyo government, rickshaw pulling also became an immediate solution to the pressing urban poverty problem. Ōki Takatō, the governor of Tokyo, targeted the “lazy and unemployed” Edoites to solve poverty. In an 1868 position paper, he suggested educating the

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<sup>193</sup> David Howell, “Hard Times in the Kanto: Economic Change and Village Life in Late Tokugawa Japan,” *Modern Asian Studies* 23, no. 2 (1989-05): 349–371.

<sup>194</sup> *Shinbun Zasshi* 新聞雑誌, 1871-5, in *Shinbun shūsei meiji Hennen shi*, 376; Suzuki Tokugarō, “Jinrikisha hatsumei nikki,” in Hayashi Wakaki, “Jinrikisha to gyūnabe.” Itakura Kiyonobu 板倉聖宣, “Shitsugyōshita Kagokakitachi Wa Zenin Ga Jinrikishafu Ni Nareta 失業した駕籠昇たちは全員人力車夫になれた,” *Kagaku Asahi* 科学朝日, 1991.



poor about the necessity of working and encouraging them to participate in silk and tea production, which contributed to Japan's export market.<sup>195</sup> In September 1869, the city government established an urban poor house, or, literally, Rescue-Education Center (Kyūiku sho 救育所) in Takanawa.<sup>196</sup> The poor house aimed to provide necessary training and employment information for homeless, disabled, and unemployed people. However, compared to tea and silk production, which required skills and probably the need to retreat to the countryside, construction and transportation professions were much more prevalent among urbanites who had nothing but their muscles. Therefore, the poor house officials also paid special attention to these professions and helped regulate fair wages.<sup>197</sup> The poor's spontaneous choice to pick up the shafts of rickshaws, therefore, also solved a vexing problem of the Tokyo officials.

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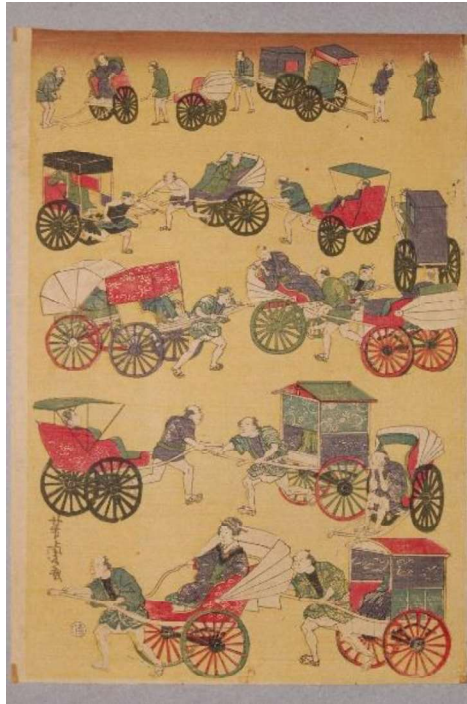
<sup>195</sup> Yokoyama Yuriko, *Edo Tokyo no Meiji Ishin*, 27.

<sup>196</sup> It was probably because Takanawa's liminal position had made it a popular location to attract the urban poor. Chapter 1 features Takanawa's spatial characters.

<sup>197</sup> In September 1869, the city government established two poor houses in Kōjimachi and Takanawa. *Tokyoshi shikō shigai-hen* vol.50, 948–954, and vol. 51, 314. It was also noteworthy how Tokyo government's attempt to channel laborers to productive professions was fundamentally different from that of the Tokugawa shogunate. When the human-powered big-eight cart hampered the business of packhorses, the Tokugawa bakufu tried to limit its impact by allowing the Tenma-officials to charge a certain amount of tax to offset its impact (see Chapter 1). Such measures revealed the shogunate's concerns about horse-raising, which was essential to its political domination as a military resource and information channel. But it also demonstrated the "benevolence" of the Confucian-style of governance and its effort to minimize potential social unrest, which was similar to its methods towards peasant movement. Stephen Vlastos, *Peasant Protests and Uprisings in Tokugawa Japan* (Berkeley and Los Angeles, California: University of California Press, 1986).

***The Rickshaw Economy: Manufacturing, Innovation, and Indigenesness***

Image 4 A variety of different rickshaws. “Jinrikisha” by Utagawa Yoshitora, 1871 <sup>198</sup>



The indigenous feature of the rickshaw was another important factor that contributed to its rapid spread. The rickshaw was modeled on traditional big-eight carts. All the materials of rickshaws—lumber, lacquer, iron, textiles—were locally available and ready to use. Part of the big-eight carts, such as wheels and shafts, could be easily adapted to make rickshaws. The requisite manufacturing skills were readily available as well. Edo craftsmen—blacksmiths, carpenters, lacquerers, and cabinet workers—many of whom had been on the brink of unemployment due to the shrinking size of the city, and especially the exodus of their most

<sup>198</sup> Utagawa Yoshitora 歌川芳虎, *Jinrikisha* 人力車, 1871, 1871, Adachi City Museum 足立区立郷土博物館, [https://jmapps.ne.jp/adachitokyo/det.html?data\\_id=562](https://jmapps.ne.jp/adachitokyo/det.html?data_id=562).

important old clients: the samurais. Now, they soon found rickshaw manufacturing a promising business. Therefore, unlike other imported transportation in the modern era (horsecars, tramways, automobiles, and bicycles), the rickshaw industry did not need extra training for its professional or import of any materials, at least in the early years.

The easy entry to rickshaw manufacturing—just like rickshaw pulling—solved the unemployment problem and, in turn, stimulated the rise of the rickshaw industry. Izumi, Suzuki, and Takayama’s prototype was a crude type of carriage, with four wooden pillars attached to a simple oilpaper roof to keep the passenger protected from rain. The influx of rickshaw makers brought a variety of spontaneous innovations. For example, Uchida Kanzaemon—who was not even a craftsman but a senior neighborhood official of the Shiba district—was known for replacing the crude oilpaper roof with an upgraded hood attached to the carriage as rain protection.<sup>199</sup> At the same time, the boom in the rickshaw business also meant increasing competition. Image 4 showed a variety of different rickshaws captured by an artist in 1871 alone. Local manufacturers had to keep a close eye on what happened on the streets and made quick innovations and adjustments. The domestic nature of the rickshaw business meant that manufacture, usage, customer satisfaction, and all other aspects of the business concentrated on serving an emerging local market. It drove up both the supply (of labors) and demand (for urban

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<sup>199</sup> Makida Shiimatsu 牧田椎松, “Jinrikisha Hattatsu Shi 人力車發達史 (一),” *Norimono 乗りもの*, February 1920. The Shiba district, interestingly, was in the the same neighborhood where the big-eight carts and oxcarts thrived during the Tokugawa period (discussed in Chapter 1). Akiha Daisuke also claimed the credit in Akiha Daisuke II 秋葉大助二代, “Jinrikisha 人力車,” *Kyōiku Gahō 教育画報*, 1918.

short-distance transport) at the same time and thus nurtured the rapid development of this industry within the first decade after its debut.

However, supported mainly through local manufacturing efforts, the rickshaw business thrived due to a localized Western design. Akiha Daisuke (秋葉大助), the most successful innovator of the rickshaw in the Meiji and Taisho eras, was representative in the making of the hybrid character of the rickshaw. Born in 1843 in Tokyo, Akiha came from a craftsman family and earned his first bucket of gold by selling guns and towels on the battlefield during the Boshin War (1868–69). When rickshaws first hit Tokyo's street, he had been running a small omnibus business between Tokyo and Kawasaki. He quickly decided to invest in the new rickshaw business and started a series of product innovations.<sup>200</sup> Akiha painted the rickshaw's passenger carriage with lacquer, reshaped the body to make it look like a Western carriage, redesigned the interior decoration by covering the seat with nice fabric and even leather. In 1875, he added mudguards and hoods to his rickshaws and subsequently a hood that a customer could open and close at will.<sup>201</sup> Later he adjusted the carriage axle to reduce oscillation and better adjust to the road conditions. His models of rickshaws earned the nickname "the Daisuke Cart" (*Daisuke-sha*, 大助車). Its popularity enabled him to adopt a novel business strategy of displaying vehicle models by the windows of his shop in Ginza, the famous Western-style brick-paved haunt of

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<sup>200</sup> Saitō Toshihiko, *Jinrikisha no kenkyū*, 158–161.

<sup>201</sup> Rimmer, "Structure, Conduct and Performance of the Rickshaw Industry in East and South East Asian Cities, 1869–1939."

enlightened ladies and gentlemen.<sup>202</sup> With immediate success, he was able to expand his business to Osaka as early as 1871.<sup>203</sup>

Image 5 The evolution of rickshaws



*Upper left:* A Hachiyō-no-kuruma, which was driven by an ox and usually served the aristocrats in the Muromachi period (1337–1573). Image from 国語教育プロジェクト (National Language Education Project), 原色シグマ新国語便覧: ビジュアル資料 (New Handbook of National Language) (Tokyo: Buneitō, 2005), 24.

*Lower left:* Horse-cart in the Meiji era. Partial Image from the famous ukiyo-e artist, Utagawa Hiroshige, “東京海運橋兜町為換座五階造り図 (Five-Story Building of Mitsui Kawaseza near Kaiun Bridge at Kabuto-chō),” printed in 1873. Published by Masadaya Heikichi. Collection from National Museum of Japanese History.

*Right:* The development of rickshaw carriage. Image cited from Saito Toshihiko, *Studies of Rickshaws*, 170.

The prototypical rickshaw was quite like the ancient type of aristocratic conveyance. However, Akiha reshaped the model to make the rickshaws look more like the Western-style horse-carts, as shown in the lower-left picture.

<sup>202</sup> Saitō Toshihiko, *Jinrikisha no kenkyū*; “Akiha Shōten Catalog 秋葉商店カタログ,” n.d., Saitō Toshihiko Private Collection.

<sup>203</sup> “Akiha Daisuke Hatsumei No Jinrikisha Kakoku No Chūmon Aitsugi Kokunai Deha Daisuke-Sha No Aishōn de Shitashimareru 秋葉大助発明の人力車 各国の注文相次ぎ、国内では大助車の愛称で親しまれる,” *Yomiuri Shinbun*, June 25, 1890..

Rickshaw accessories also became an active industry. Manufacturers of upgraded hoods, skeletons of convertible hoods, night lamps, Western-style umbrellas, and front covers of rickshaws, all obtained patents from the government in the 1880s.<sup>204</sup> In this sense, the rickshaw economy was also comparable to the horse economy in contemporary Euro-America. As Clay McShane and Joel Tarr demonstrated, nineteenth-century draft horses not only provided economic functions as living machines—hauling, carrying, and lifting—but also as consumers. Horses needed various manufactured goods, such as harnesses, blankets, and shoes, and the horse economy provided jobs to a variety of laborers, blacksmiths, and stable hands. However, there was still a slight difference. While the horse economy also drove new city infrastructures, such as paving stones and street rails, the rickshaws were left to adapt to the city roads passively. The city government never really prioritized the need of rickshaws. Infrastructure reforms were mostly driven by the concern to adapt to Western or more “civilized” transportation, such as horse-drawn tramways and automobiles. Bumpy and unsafe rickshaw trips were attributed to the poor designs of rickshaws as opposed to deficient infrastructure. It forced manufacturers to keep innovating, such as adopting rubber tires and air-filled tires later in the 1900s.<sup>205</sup> At any rate, the rickshaw had a similar economic structure, and its economy was entirely a making of Japan’s urban masses.

The local initiatives, continual innovations, and the growth of the affiliated rickshaw economy soon outpaced the expectation of both officials and the original inventors. At first, to

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<sup>204</sup> Sansan Bunbō 三三文房, *Meiji Nijyūsan Nen Tokyo Hyakuji Bin 明治廿三年東京百事便* (Sansan Bunbō 三三文房, 1890).

<sup>205</sup> Clay McShane and Joel Tarr, *The Horse in the City*, 440.

keep the inventors responsible for their technical models' safety, the Tokyo officials required anyone who wanted to join the rickshaw business to obtain a permit from any one of the three inventors. In effect, this arrangement maintained a monopoly by the Izumi Group. However, this monopoly lasted only for one year because the growing demand for rickshaws drew many other manufacturers to develop and upgrade the rickshaw models.<sup>206</sup> In terms of both sheer numbers and types of models, the proliferation of rickshaws led to the failure of Izumi Group's attempt to patent their rickshaw design in 1872, which was only two years after its invention. By 1890, there were at least 187 manufacturers who joined the Tokyo Cart Manufacturer Association (東京諸車製造業組合), the majority of which were actively producing rickshaws across the city.<sup>207</sup>

The efforts by the small-time rickshaw makers were comparable to the urban construction sector at the same time. According to Philips, master builders, carpenters, and townspeople, without the benefit of formal training in Western building methods, also used their skills and knowledge of traditional building methods to forge new architectural styles in Tokyo. In this sense, the urban culture of the Meiji period, marked by the slogan of “civilization and enlightenment,” was an internal creation: it was not the Westernization of Japan, but the “Japanization of Western culture.”<sup>208</sup> The rickshaw manufacturers' efforts were along the same line.

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<sup>206</sup> Tokyo-shi, *Tokyo-shi shikō shigai hen* 5:166-170. “Jinrikisha Moto Sōgyōji e Shazei No Naka 人力車元總行事へ車税の中, Jinrikisha Moto Sōgyōji Tangan No Gi Nitsui Ukagai 人力車元惣行事歎願之儀に付伺い” (Ōkurashō 大藏省 Ministry of Finance, December 1873), 2A-25-886, National Archives of Japan 国立公文書館.

<sup>207</sup> Sansan Bunbō, Meiji nijyūsan nen Tokyo hyakuji bin). Kōbun-sha 弘文社 and Kōeki-sha 公益社, *Tōkyō kōshō meikan: Bijutsu kōgei 東京工匠名鑑: 美術巧藝*, 1930, 281–83.

<sup>208</sup> Philips, 12–13.

The efforts of small-time manufacturers received official recognition because they aligned with the Meiji state's policy of "more production through industrial enterprise" (*shokusan kyōgyō*, 殖産興業). As a result, several rickshaw manufacturers participated in the Japanese National Industrial Exhibitions (*Naikoku Kangyō Hakurankai*, 内国勸業博覧会), beginning with the very first competition in 1878. The Japanese National Exhibition was inspired by the World EXPO in Vienna in 1871 that the well-known Iwakura Mission visited. For the Meiji officials, the "EXPO was the battlefield in peace times" for states to compete by showcasing industrial power.<sup>209</sup> Following similar logic, the National Industrial Exhibition aimed to stimulate domestic industrial development. The rickshaw competed with various products in the exhibitions, including prototypes of railway compartments, horse harnesses, medical equipment, and even newspapers, all of which were appealing in the "enlightenment" era. Competing products included not only models of rickshaws but also technical compartments or accessories of rickshaws, such as the iron spokes used to support the cart and the wheels. Among them, Izumi Yōsuke's model won the first-class "Dragon Award," partially as a recognition for his contribution as the inventor, as was appropriate to demonstrate the state's call for entrepreneurs.<sup>210</sup>

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<sup>209</sup> Kuni Takeyuki 國雄行, *Hakurankai no jidai: Meiji seifu no hakurankai seisaku 博覧会の時代: 明治政府の博覧会政策 (The Time of the Expo: The Expo Policy of Meiji Government)* (Tokyo: Iwada Shoin, 2005), 34.

<sup>210</sup> Japanese National Industrial Exhibition Bureau 内国勸業博覧会事務局, *明治十年内国勸業博覧会出品目録 (Meiji 10, National Industrial Exhibition Catalog)*, (Tokyo: National Industrial Exhibition Bureau, 1877); "Meiji jūnen Naikoku kangyō hakurankai shōbai hōjō jyūyo jinmei roku 明治十年内国勸業博覧会賞牌褒狀授予人名録" and "Meiji jūnen Naikoku kangyō hakurankai shinsatsu hyōgo 明治十年内国勸業博覧会審査評語 (Meiji 10 National Industrial Exhibition Evaluations)," in Fujiwara Masato 藤原正人 and Meiji Bunken Shiryō Kankōkai 明



### Problematizing the Organic Powers on The Street

The division between rickshaw manufacturing as an industry and rickshaw pulling as a profession became increasingly problematized by intellectuals and officials in the Meiji era. This problem must be viewed against the backdrop of Western imperial expansion and Japan's response to "civilization and enlightenment." Meiji Japan's "civilizing" mission and its mobilization of individual citizens were closely related to Japan's diplomatic resolutions. The national goal of cultural reform aimed to revise the unequal treaties forced upon Japan by the Western "gunboat diplomacy." During the early Meiji enlightenment era, Nakamura Masanao's translation of Samuel Smiles's *Self-Help* was the most influential foreign book of the Meiji era. In this bestseller, Nakamura translated and rendered Smiles's words and advocated that each individual had the duty to work hard and cultivate his own talent to advance in the world and make Japan a stronger country.<sup>211</sup> In other words, achievement-oriented individualism was the true source for the rise of Japan, and citizens must shoulder the responsibility collectively. In this context, both the spirit and the body of humans—and to some extent, non-humans as well—were interrelated with the national project.

Street dynamics underwent dramatic changes since the late Tokugawa period. Shosai Ikkei's depiction of Kyōbashi in 1872 still featured several Takanawa cows occupying the

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治文献資料刊行会, *Meiji zenki sangyō hattatsushi shiryō kangyō hakurankai shiryō* 明治前期産業発達史資料. 勸業博覧会資料 175 (Tokyo 東京: Meiji Bunken Shiryō Kankōkai 明治文献資料刊行会, 1983), 453–59.

<sup>211</sup> James McClain, *Japan*, 175.

central street of Kyōbashi (see Chapter 1). In 1882, the first horse-drawn tramway appeared in Tokyo, with two routes connecting Shimbashi with Nihonbashi and Asakusa. Utagawa Hiroshige III captured this moment and redefined the character of this “famous place” with a completely different landscape. [Image 6 Contrasting images in Kyōbashi 1871 and 1882 ] Horses are pulling imported, fashionable streetcars on the two-way rails. Competing side-by-side with them were the human-powered rickshaws. The change of representative cultural symbols of Kyōbashi also encapsulated what happened in Tokyo and Japan in general.

Image 6 Contrasting images in Kyōbashi 1871 and 1882 <sup>212</sup>



### *Animals in the Age of “Civilization and Enlightenment”*

In the age of “Civilization and Enlightenment,” the role of draft animals in Japan underwent significant and rather ironic changes, from human-like companions to living

<sup>212</sup> Shōsai Ikkei 昇齋一景, *Tokyō sanjūrokkei Kyōbashi* 東京三十六景 京橋; Utagawa Hiroshige III 歌川広重三代, *Tetsudō Basha Ōfuku Kyōbashi Renga Tsukuri Yori Take Kagan Zu* 鐵道馬車往復京橋煉瓦造ヨリ竹河岸図, 1882, 1882, Postal Museum Japan 郵政博物館, <https://www.postalmuseum.jp/collection/genre/detail-161567.html>.

machines. Tokugawa Japan had several bio-protectionist laws that prohibited the mistreatment of oxen and horses, which in its extreme forms was Tsunayoshi's Law of Compassion (Discussed in Chapter 1). As Pieter de Ganon demonstrated, oxen and horses were important to the small-scale intensive farming characteristic of the agrarian economy in Tokugawa Japan. It was not only because they were used for traction and haulage but mostly because they were an important source of manure. Their value as producers of fertilizers gave the state a vigorous interest in their protection.<sup>213</sup> As Chapter 1 shows, oxen and horses were also privileged animals in the early modern urban space. They supported the circulation of the expanding castle towns and the postal information system.

The legal framework conditioned a set of moral consciousness that defined the early modern human-animal relationship – a kind of affective relationship that compelled people to treat oxen and horses not as properties but as “almost human.”<sup>214</sup> For example, as Chapter 1 mentions, the Edo ox-masters erected a monument inside the local temple for the salvation of all the deceased souls of cows. The protection and benign treatment towards these animals were more than following religious taboos on slaughter and consumption. But rather, it was a set of normative behaviors. There were also customary rules that governed the treatment of old animals.

The age of “civilization and enlightenment” redefined the roles of oxen and horses in the urban setting. The most conspicuous change was the vanishing of oxen in urban space. As

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<sup>213</sup> Ganon, “The Animal Economy.”

<sup>214</sup> Ganon, 109.

discussed in Chapter 1, the arrival of Westerners in the late Tokugawa period diversified the cow's role as the source of beef. Many scholars, such as Daniel Botsman and Pieter de Ganan, have discussed the cultural and economic consequences of this change. Beef-eating became the icon of cultural modernity and a measure to fortify Japanese bodies and the state.<sup>215</sup> The changing roles of cows also impacted the oxcart business. Inflation of cow prices, hygiene concerns, shrinking urban space for the cows contributed to the steady decline of oxcart numbers.<sup>216</sup> Living cows, a privileged urban animal during the early modern period, became disassociated with the urban settings. They retreated to the countryside. What remained in the city was beef and milk. In other words, cows' products were spatially separated from the metabolic, ecological, and affective bodies of living cows. Simultaneously, in urban spaces, the oxen as a kind of animal capital changed from pure labor to a form of property.

The roles of horses changed as well but in the opposite direction. In Edo, horses were essential for the information channel of Tokugawa's political domination and were samurai's working companions. Due to a relatively low transport efficiency, the packhorse business lost out to the carts in the city (both oxcarts and big-eight carts) starting in the mid-seventeenth

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<sup>215</sup> Beef-eating: among the cultural avant-garde, at least, beef-eating, once vilified as defiling and cruel, became the icon of cultural modernity and a powerful emblem of Western civilization and a way to reject the past and to literally internalize progress. Westerners in Japan also explicitly equated meat-eating with progress. The Meiji government was also anxious to turn Japanese into beef-eaters. Beef was widely believed to be the premier body-building foodstuff, capable of fortifying Japanese bodies and, with them, the state itself. Warrior overlords banned the slaughter of draft animals for food because the practice posed an unjustifiable threat to the rice crop, the basis of the early modern economy and the source of samurai wealth. Peasants throughout Japan were urged in the strict terms to raised draft animals and to care for them as if they were kin; indeed, the disproportionate weight given to horses and cows in Tokugawa Tsunayoshi's *Laws of Compassion* should be understood within this context. Ganan, "The Animal Economy."

<sup>216</sup> See chapter 1.

century. However, in the Meiji era, horses re-entered the urban space with different socio-economic roles and cultural implications. In 1869, several Yokohama merchants co-founded the first omnibus company, serving foreigners in the Yokohama settlements for their rides to Tokyo. In 1874, Yura Morimasa, an official of the Home Ministry and a participant of the Iwakura Mission, imported two-story horsecars from England and established the first omnibus company in Tokyo, “Senri-ken” (literally “House of Thousand Miles”).<sup>217</sup> In 1882, with the support of Godai Tomoatsu, two samurai entrepreneurs (Taneda Seiichi and Tanimoto Michiyuki) co-founded the horse-drawn tramway in Tokyo. All of the thirty-one carts were imported from England, while horses were procured from the Kanto and Utsunomiya areas. In a way, the combination of Japanese horses and Western-origin technology reintroduced horses in Tokyo’s cityscape. No longer samurai’s tool of domination, horses were now associated with progress, civilization, and modernity.

The horse-drawn tramway revolutionized public transportation for Tokyo. One streetcar could carry twenty to thirty passengers at a time: 255,000 passengers monthly during the first year, at an average of 8,500 per day. It only took twelve minutes to go between Shimbashi and Nihonbashi.<sup>218</sup> It raised transportation efficiency inside the city and created a new type of public space. For the first time, people in Tokyo were mobile in groups and with strangers. The shared ride was a relatively new urban experience that resembled the compartments on long-distance

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<sup>217</sup> Tōkyō-to Kōbunshokan 東京都公文書館, *Tōkyō basha tetsudō 東京馬車鉄道* (Tokyo 東京: Tokyoto 東京都, 1989).

<sup>218</sup> Tōkyō-to Kōbunshokan 東京都公文書館.

steam railways outside the city boundary. It helped forge a new spatial imagination beyond the cityscape.

In this new setting, horses became not only properties but, in particular, living machines, a source of usable energy, instead of affective working companions as they were in the early modern era. In Europe, before the Industrial Revolution, horses and oxen were already valued animals as sources of auxiliary labor.<sup>219</sup> Euro-American cities had been using horse-drawn carriages as major urban transportation since the early nineteenth century. Joel Tarr and Clay McShane demonstrate that horses became “living machines” in the nineteenth century from two perspectives. First, horses were evaluated in terms of fuel efficiency. “The best horses were those that produced the most work for the least food.” Secondly, they were subject to technical refinements, such as innovation of harnesses, saddlery, and carriages that improved fuel efficiency.<sup>220</sup> These characters complicate the binary relationship between a technological machine and the pastoral ideals, as observed by Leo Marx in *The Machine in the Garden*.<sup>221</sup> In a way, the essence of the use of horses in the urbanscape was to mechanize the natural. Horses were no longer sensitive beings, affective companions, or representative of the pastoral life, but machines, tools, part of the technological culture in a built environment.

This mechanization of animals underwent a more fundamental change in the context of Japan. When the Japanese imported omnibuses and streetcars, they also adopted both ways of thinking in managing horses. Both were in sharp contrast to the early modern Japanese

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<sup>219</sup> Massimo Montanari, *The Culture of Food* (Oxford: Blackwell, 1994), 152–56.

<sup>220</sup> Clay McShane, Joel Tarr, *The Horse in the City*.

<sup>221</sup> Leo Marx, *The Machine in the Garden* (London ; New York: Oxford university press, 2000).

customary law. Kawai Chūzō once described that it is “great evil” to work an animal in the early modern era while it is young and sell it when old.<sup>222</sup> However, the Meiji streetcar companies now would depreciate their horses and then sell them after an average duration of four years and four months – comparable to the five-year serving tenure in in Euro-American horse-drawn transportation companies.<sup>223</sup> In other words, horses were no longer affective companions but disposable and replaceable properties of owners and companies. They had become efficiently driving forces both in terms of strength and fuel consumption under rational calculations. For example, for some loads over some distances, horses were more profitable than steam.

Moreover, as a form of the living machine, the working mode of horses also changed. In the Edo period, horses mostly appeared singularly, as packhorses, riding horses, and postal horses with official duties. Horses in Tokyo, however, never worked alone. Instead, they were attached to manmade and mostly imported Western technologies, such as carriages, harnesses, and rails. As a source of energy and a mechanism subject to technical improvement, horses in Japan, too, became living machines and an integral part of the transportation mechanism.

### ***Problematizing Rickshaw Pullers and Riders in the Age of “Enlightenment”***

If horses were living machines, what about rickshaw pullers, who seemed similarly attached to newly developed and continuously evolving technologies? In his classic definition of

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<sup>222</sup> Kawai Chūzō 川合忠蔵, “Ichiryū Manbai Megumi Ni Megumi 一粒万倍恵に恵,” in *Nihon Nōsho Zenshū Dai 29 Kan 日本農書全集 第29卷* (Tokyo 東京: Nō-san-gyoson Bunka Kyōkai 農山漁村文化協会, 1982), 16–17.

<sup>223</sup> “Tokyo basha tetsudō kaisha eigyō kairyō no hōshin 東京馬車鉄道会社営業改良の方針,” *Yomiuri Shinbun*, July 22, 1891. Tōkyō-to Kōbunshokan 東京都公文書館, *Tōkyō basha tetsudō 東京馬車鉄道*, 147. McShane and Tarr, *Horses in the City*.

machines, Lewis Mumford puts forward a technical spectrum that distinguishing between “machines” and “tools.” He argues that “the automaton is the last step in a process that began with the use of one part or another of the human body as a tool.”<sup>224</sup> The rickshaw sits in the middle of such a technological continuum. Its operation depended on the “skill and motive power of the operator,” making it closer to a “tool.” However, the tool user was part of the mechanism, too. With every upgrade, rickshaw manufacturers made sure that the spokes, the tire, and the chair’s structure contributed to an ever smoother, oscillation-free motion, one that was achievable with the optimal use of human power. Here, concerns on fuel efficiency and technical improvement also featured the development of rickshaws. If these two factors were what essentially made horses living machines, then rickshaw pullers could also be considered living machines. At least, to some extent, rickshaw pullers were expected to act as part of the mechanical design in an ideal situation. When rickshaws were first introduced, they were celebrated as the symbol of Tokyo in famous ukiyo-e paintings and postcards, demonstrating the thriving, civilized, and enlightened capital of Japan. In this narrative, rickshaw pullers were considered a part of the rickshaw technology. They acted as an essential component that completed the design and ensured the efficiency of the rickshaw’s technical mechanism.

However, and somewhat ironically, while animals were considered as machines, pullers were considered more as closer to animals. When humans – sweating and almost half-naked males -- were competing side-by-side with draft animals (now a form of the living machine and

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<sup>224</sup> Lewis Mumford, *The Myth of the Machine: Technics and Human Development* (London, Secker & Warburg, 1971), 9–10.



tool) serving their fellow human passengers on the everyday street, the contrast became more blatant.

It immediately agitated anxiety on the use of the human body, which further translated into a concern over the nation's civilizing project. The journalist, historian, and politician, Suematsu Kenchō (末船謙澄) was among the first to warn the nation about the rickshaw's corruptive effect. In an 1877 critique, he explicitly compared human labor with draft animals. He argues that the use of rickshaw exploited the human body and made "a two-footed creature to imitate a four-footed animal when drafting and running, one had to use the front hands to clamber over to the shaft, bend the body over to dash forward. Such a posture shrinks the pleura and oppresses the lungs, which leads to serious lung diseases, and many have died from it." The result of rickshaw pulling was the shortened life expectancy of people who could have been strong and prosperous, which led to the deprivation of the "Japanese good citizen" or ryōmin (良民) and Japan's ultimate decline as a nation.<sup>225</sup>

The anxiety over rickshaws concerned the body of the pullers and the spirit of a proper citizen in advancing national goals. A Yokohama reader's letter to *Yomiuri Shinbun* in 1881 also expressed similar concerns on "the vices of rickshaws." The letter states, "no one would like to be wrist-tied to a vehicle and deprived of physical freedom or to be treated like cows or horses

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<sup>225</sup> Suematsu Kenchō 末船謙澄, "Jinrikisha No Ron 人力車ノ論," in *Ishin Taika Bunshō: Fuhyō Kan 3 維新大家文抄 附評卷 3*, ed. Matsumoto Mannen 松本万年 (Onkodō 温故堂, 1877). It was unclear when Suematsu wrote this critique because the editor Matsumoto Mannen did not provide a citation. But this critique was the earliest critique against rickshaw pulling.

and sweating hard. This is human nature.”<sup>226</sup> He criticizes rickshaw riders for betraying the traditional Japanese morals of advocating military spirit (*shōbu*, 尚武) and diligence (*kinken*, 勤儉). The reasons for that were threefold. First, spending money on something unnecessary was a bad economic choice and too extravagant. Secondly, using rickshaws instead of walking was the wrong way of using one’s body. The increasing cases of beriberi could prove the direct consequence due to reduced walking exercises. Thirdly, however, he turned to criticize pullers instead. He argued that rickshaw pulling provided a negative safety net for the poor and dissipated. There had been a common sense that “if you are living hand to mouth, just pull up a rickshaw.” It made people unable to recognize the shameful behavior of their animal-like behavior. It became an especially bad encouragement for those opportunists, who lost a fortune in the stock market but could simply pick up a rickshaw to make money again. Both professions were unproductive to the country. All of these led Japanese citizens to become extravagant cowards (*dajaku shashi*, 懦弱奢侈) – contrary to all the treasured morals for a good Japanese citizen.<sup>227</sup> Hikida Eikichi (匹田銳吉), a journalist from *Yomiuri Shinbun*, further proposed to relocate rickshaw pullers—and for that matter, all the unemployed urban poor—to Hokkaido and transform them into more “productive” laborers in the colonial exploration, rather than leaving them as useless urbanites.<sup>228</sup>

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<sup>226</sup> “Jinrikisha No Ryūhei 人力車の流弊,” *Yomiuri Shinbun*, December 15, 1881.

<sup>227</sup> “Jinrikisha No Ryūhei 人力車の流弊.”

<sup>228</sup> 1891-2-17. Requoted from Saitō Toshihiko, *Jinrikisha no kenkyū*, 144.

The spirit of “good citizens” therefore was closely associated with the modern redefinition of “hygiene” or *eisei* (衛生). The anxiety over rickshaw-riding stemmed from a panoply of causes. However, it ultimately paralleled what Ruth Rogaski showcases in the treaty-port Tianjin: the transformation of hygiene as a set of individual practices to a hyper-politicized marker of modernity and a national project.<sup>229</sup> Similarly, multiple parties expressed their terms of concerns over rickshaw-riding from different perspectives, but they converged on a common concern on the rising conception of “hygiene.” Another journal article gave a more straightforward analysis. The author pointed out four vices of rickshaws: too much shaking, overturning, dusting, and reduction of exercise – all were “hygiene” (*eisei*) concerns for healthy citizens.<sup>230</sup> A group of Japanese Christians formed a “No-Carts Association (*Kinsha kai*)” in 1886. They claimed that using urban transports—particularly rickshaws—prevented people from getting proper exercise and led to various diseases such as rheumatism. Therefore, they proposed that people walk rather than using rickshaws except for emergencies. Members were required to pay a monthly fee of 10 sen—a reasonable amount for monthly rickshaw rides— for a charitable purpose.<sup>231</sup> Officials took on this issue in much more practical terms. The governor of Nagasaki, Utsumi Tadakatsu, issued a special notice in 1878. He advised pregnant women to avoid riding rickshaws or horsecars because several incidents led to miscarriages due to the rough movements

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<sup>229</sup> Rogaski, *Hygienic Modernity Meanings of Health and Disease in Treaty-Port China*. 138.

<sup>230</sup> Kawai Yasu 河井やす, “Jinrikisha No Gai 人力車の害,” *Kijo No Tomo 貴女之友*, 1888.. It is interesting to note that this article is published on the female-oriented journal. The context itself does not specify any gender context of using rickshaws, but it does suggest a gendered concern on the hygiene issues of rickshaw and worth further exploration in future research.

<sup>231</sup> Petition to the diet, 1891-2-17, requoted from Saitō Toshihiko, *Jinrikisha no kenkyū*, 145.

of carts.<sup>232</sup> In this context, the health of the individual (and personal choices) was increasingly interrelated with the health of the nation.

Along with the idea of hygiene also came the concept of “freedom” or *jiyū*. Daniel Botsman has demonstrated some of the implications of how Meiji’s enlightenment age was also coetaneous with the age of emancipation of the West. Nineteenth-century liberalism directly impacted the conditions of prostitutes and outcasts in Japan – both were regarded as forms of forced labor and even quasi-slavery.<sup>233</sup> Rickshaw pulling also encountered similar criticism. Multiple intellectual critiques of rickshaw pulling invoked the term “slave.” Pullers were not forced laborers, but the contrast on the public streets revealed a blatant inequality. Humans worked like draft animals, serving another human being on the cart until they exhausted their bodily energy. Saitō Kokubu, a journalist and bureaucrat, explicitly said, “Pullers are abject but lazy, unproductive and irrational, yet they emerged as a class of laborers and gathered as groups. This was an omen suggesting the subjugation of our country.”<sup>234</sup> Again, the juxtaposition of draft animals and the human laborers relying on their muscles—not productive skills—agitated intellectuals’ anxiety over rickshaw pulling.

Ironically, the fact that the urban poor chose this profession rather willingly—which was what anti-rickshaw intellectuals criticized them for—also aligned with the nature of the age of

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<sup>232</sup> “Ninpu Wa Jinrikisha Ya Basha Nado Ni Noruna Ryūsan Wo Kizukai Utsumi Tadakatsu Nagasaki Ken Gonrei Ga Yutatsu 妊婦は人力車や馬車などに乗るな 流産を気遣い、内海忠勝・長崎県権令が諭達,” *Yomiuri Shinbun*, July 12, 1878, sec. Chōkan.

<sup>233</sup> Daniel Botsman, “Freedom without Slavery? ‘Coolies,’ Prostitutes, and Outcastes in Meiji Japan’s ‘Emancipation Moment,’” *The American Historical Review* 116, no. 5 (2011): 1323–47.

<sup>234</sup> Kokubu Saitō 国府犀東, “Jinrikisha Hash Iron 人力車廢止論,” *Taiyō 太陽* 7, no. 5 (May 1901).

“freedom.” Nevertheless, for the policymakers and the police, absolute professional freedom contradicted social stability and the progress of Japanese civilization. Realizing that the rapid spread of rickshaw was unstoppable, officials began to impose regulations to minimize rickshaws’ negative effects. It took ten years for the Tokyo police to finalize regulations on rickshaw pulling, setting up criteria for laborers to obtain rickshaw licenses. These regulations included stricter eligibility requirements for pullers: age limitations (usually 18–50 years old, depending on different localities), physical condition, familiarity with city geography, and absence of any criminal records of robbery, rape, abduction, and human trafficking. From the 1890s to the early 1900s, Japanese police officers also openly discussed rickshaw regulations in police magazines such as *Keisatsugan* and *Keisatsu Kyokai Zasshi*. Most of these opinion letters aimed to rebut criticisms that questioned how much the state power could interfere with the personal choice of profession and accused police regulations of violating civil rights.<sup>235</sup> The opinion letters on police magazines stated clearly that all the regulating efforts were following the national project of the treaty revision. They justified stricter rickshaw regulations because these pullers were on the frontline of public contact, and liberty without restriction would only hamper national progress.<sup>236</sup>

Interestingly for laborers, the idea of liberty and freedom also turned into a self-defense weapon. The rise of the Japanese “Movement for Freedom and Popular Rights” during 1870–

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<sup>235</sup> “Jinrikisha Hikiko Shikaku Seigen o Ronsu 人力車挽子資格制限を論ず,” *Keisatsugan* 警察眼, 1893.

<sup>236</sup> “Jinrikisha Hikiko Shikaku Seigen o Ronsu 人力車挽子資格制限を論ず”; “Jinrikishafu Torishimari Kisoku No Taishō 人力車夫取締規則の対照,” *Keisatsu Kyōkai Zasshi* 警察協会雑誌, 1904.

1880 also inspired the emergence of political parties. Rickshaw pullers formed one of the first proletarian gatherings in Japan. The launch of the horse-drawn streetcar in 1882 directly impacted the business of rickshaw pullers. A decade earlier, the palanquin carriers encountered the same fate but decided to join the puller profession to survive. However, this time, the rickshaw pullers confronted horses—properties of a modern transportation enterprise, supported by Meiji businessmen and the Tokyo government. They had lost the option to join. Angry pullers threw excrement into passing streetcars, jammed the rails with rocks, and even assaulted the grooms openly on the street.<sup>237</sup> Okunomiya Kenshi, a member of the Liberty Party (*jiyūto*), channeled their anger into social and political movements. He successfully gathered 2,000 unemployed rickshaw pullers and other workers in a political rally on November 28, 1882. They announced their political party, the “Shakaidō” (Party of the Cart Association). However, the organization was short-lived: it dissolved four days later following Okunomiya’s arrest.<sup>238</sup>

***Juxtaposing Draft Animals and Rickshaw Pullers: National Disgrace, and Technology, and Imperial Order***

Thirty years into the Meiji era and the last year of the nineteenth century, the problematization of human and animal labor on the street converged. Japan had just won the First Sino-Japanese War. The Japanese navy had substituted beef for rice as their basic rations.

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<sup>237</sup> Tokyoto, *Tokyo basha tetsudo*, 92–94.

<sup>238</sup> Obinata Sumio 大日方純夫, *Jiyū minkenki no shakai 自由民権期の社会* (Tokyo 東京: Keibunsha 敬文舎, 2012).

Victory in the war further validated beef-eating as an effective measure to fortify national strength. Meanwhile, the Meiji government's endeavor to revise unequal treaties had entered a new stage. The year 1899 marked the beginning of "mixed residence," or the co-residence of Japanese and foreigners outside the designated settlements. To abolish foreign extraterritorial rights, Japan had to grant foreigners access to all places in Japan. Essentially, this exchange made Japan the first country in Asia that finally enjoyed equal international legal rights with the West. Nevertheless, co-residence also meant that foreigners could now travel, reside, trade, and work wherever they wanted in Japan. Now, everything in Japan was under the eyes of the world and fully open to capitalism and imperialism. Both working horses and running rickshaw pullers became more visible than before, and Japanese intellectuals started to worry about these organic laborers' public performance on the streets.<sup>239</sup>

The year 1899 also marked a new age of animal protection. That year, a scholar and Christian priest named Hiroi Tatsutarō published a journal article in one of the most influential literary and critique journals during the Meiji period, *Taiyo*. This article, entitled "Who Would Shed Tears for Cows and Horses," called on the Japanese people to prevent animal cruelty. As the "wisest of all creatures," human beings possessed the moral self-consciousness to achieve greatness and progress and refuse evilness and inhuman conduct. Therefore, meaningless killing and abuse of animals contradicted the way of human beings and world civilization's progress.<sup>240</sup>

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<sup>239</sup> William P Ker, "Treaty Revision in Japan: A Survey of the Steps by Which the Abolition of Foreign Privilege Was Accomplished in the Island Empire," *Pacific Affairs* 1, no. 6 (1928): 1–10.

<sup>240</sup> Hiroi Tatsutarō, *Taiyo* 5, no. 17 and no. 18, 1899.

Hiroi's article generated further debates on animal protection, which soon translated into substantial animal protections. It was not the first time that the Japanese paid attention to animal abuse. Since the early 1880s, English-language newspapers, such as *The Japan Weekly Mail*, had sporadically raised questions about animal protection and anti-animal cruelty. However, Hiroi's article was the first serious public critique discussed in Japanese media. It generated rounds of follow-up debate in *Taiyo* and *Chūō Kōron* (中央公論). It also stimulated more specific policing regulations concerning animal care. In 1899, the Superintendent General (*Keishisokan*) issued a special edict urging care towards cows and horses.<sup>241</sup> In 1901, the Minister of Agriculture and Commerce issued Edict No. 18, which prohibited the abuse against cows and horses because it would “hamper animals’ inherent goodness and physical development.”<sup>242</sup> It also stimulated a civil movement as well. In 1902, Hiroi Tatsutarō founded the society for the Prevention of Cruelty to Animals, the first animal protection association in modern Japan. This association was supported by several influential politicians, intellectuals, and entrepreneurs of the time, including Takayama Chogyū (高山樗牛), Konoe Atsumaro (近衛篤磨), Shibusawa Eiichi (渋沢栄一), Inoue Enryō (井上円了).<sup>243</sup>

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<sup>241</sup> Shoji Katsuhiko 東海林 克彦, “Hiroi Tatsutarō (moto Tōyō Daigaku Kyōjyū no dōbutsu aigo shisō ni kansuru kankyō ronrigaku teki kōsatsu 広井辰太郎(元東洋大学教授)の動物愛護思想に関する環境倫理学的考察,” *Kankōgaku Kenkyū* 観光学研究, no. 8 (2009): 97.

<sup>242</sup> Ōtomo 大友 Genkurō 源九郎, *Ba ji nenshi* 馬事年史, vol. 3 (Tokyo 東京: Hara Shobō 原書房, 1985), 311–12. “Gyūma Kokushi Torishimari 牛馬酷使取締,” *Yomiuri Shinbun*, August 1, 1901, sec. Chōkan.

<sup>243</sup> The association advocated humanitarianism towards animals. They organized regular meeting, devoted to children education, and publish association magazines entitled “*Awaremi*.” Most of their activities were among the higher echelon of the society, which also resembled the nineteenth-century animal protection movement in Europe. See Chikamori Takaki 近森 高明, “Dōbustu Aigo no ‘kigen’: Meiji 30 nendai niokeru kutsū he no hairyō to



When Hiroi Tatsutarō introduced his concerns over animal protection, he did so by highlighting the labor issues. “If we have been talking about how to protect the laborers, then we should equally concern the issue of cows and horses as an important social issue.”<sup>244</sup>

Coincidentally, 1899 was also a year of rising concerns over the underclass of Japan. That year, journalist Yokoyama Gennosuke published his renowned investigation, *Nihon no kasō shakai* (*Society of the Lower Classes of Japan* or the *Underclass of Japan*). The study of the nameless working-class revealed a society undergoing radical changes: the expansion of the metropolis and the explosion of urban population and the growth of both wealth and poverty, and it drew more attention to the previously invisible: who were the poor, what did they do, and why were they poor? Rickshaw pullers were representative among this population and sat at the heart of Yokoyama’s discussion.

In short, thirty years into the Meiji period, the urban underclass and animal protection (specifically of draft animals) became simultaneously more visible and problematized in the public forum. In a way, both rickshaw pullers and draft horses were integral parts of the country’s socio-economic mechanism. They could both either hinder or advance the nation as a globally recognized civilization. These two issues of human and animal transport labor were comparable in several ways.

Hiroi’s theory on animal protection did not aim to separate animals as something natural in opposition to something artificial. On the contrary, he argued that draft animals were an

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dōbutstu aigo undō 動物愛護の<起源>--明治30年代における苦痛への配慮と動物愛護運動,” *Kyoto Journal of Society* 京都社会学年報, no. 8 (2000): 81–96.

<sup>244</sup> Hiroi Tatsutarō, *Taiyo*.

integral part of Japan's socio-economic mechanism, and animals could only function better if given enough care. In this context, Hiroi's animal protection logic did not contradict the Western practices of treating horses as living machines. One of the main reasons for anti-cruelty argued that abuses simply could not maximize horses' capacity. It was noteworthy that Hiroi's reasoning was different from the Tokugawa logic of animal protection and is fundamentally an economic one. Both oxen and horses were considered working companions in the Tokugawa era, essential to support the shogunate's economic and political system. Animal labor in Japan did carry an implicit responsibility to care for the animal. They were believed to "deserve" a just treatment that in some ways resembles the idea of *on* (reciprocal obligation).<sup>245</sup> However, Hiroi specifically targeted the working horses on the streets. He explicitly excluded cows slaughtered in the butcher factories in the countryside because it was away from public eyes, conducted by experts, and necessary to support the nation.<sup>246</sup> The ultimate purpose of caring for draft horses and anti-cruelty was to nurture human dignity and advance a civilized Japanese society.

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<sup>245</sup> Pieter de Ganan, *The Animal Economy*, 109.

<sup>246</sup> Differences from the Western thoughts on animal care/husbandry: There were some sixteenth-century thermophiles (animal lovers) who argued for animal intelligence, but the French philosopher René Descartes laid out the dominant thought of the new era. Descartes believed that animals were purely mechanical, incapable of reason or emotion, even pain. In general Enlightenment thinkers saw nature (including animals) as a resource for humans, not as something intrinsically valuable. The practice of animal husbandry in colonial North America was quite poor. American legislatures, greatly influenced by Enlightenment ideas, evidently thought about animals mostly as agricultural tools (although both Quaker Pennsylvania and Puritan Massachusetts passed anti-cruelty laws, and there was a common law prosecution for beating a horse as early as 1788). Human porters, to judge from iconographic evidence, carried most urban freight. Victorian thinkers, whether in the United States or Europe, were somewhat ambivalent. Many accepted Darwinian notions about the survival of the fittest. For them, hegemony over animals was the norm. Other Victorians were vitalists, believing that animals and even plants had a life force that science could not understand. A literary genre that saw animals as other than an exploitable commodity began to flourish in the late nineteenth century. Anthropomorphic animals were also a staple of nineteenth-century children's literature, suggesting a perceived kinship, since they are presented as cultural representations. McShane and Tarr, *The Horses in the City*.

Similar concerns over bodily well-being also applied to rickshaw pullers. A police journal in 1904, for example, was upfront about the physical requirement over transport labors. “Just as it was necessary to conduct a physical check for horses before omnibuses took off, it was also necessary to ensure that rickshaw pullers are in a good physical condition.” In this sense, the concern over the bodily health of pullers was multilayered. First, age limitation was necessary to ensure the basic body condition of the puller population. In fact, out of the 42,704 registered rickshaw pullers in Tokyo, 5371 were above fifty years old, which was over 12% of the total puller population. The author argued that it would be inconsiderate for the administration to let the situation go unchecked. Pullers died on the road due to cardiopathy, lung disease, and beriberi, resulting from overworking. It was a direct result of old pullers competing with mechanical powers. Secondly, the author also invoked “animal abuse” and argue that the indulgence of pullers without governmental regulation was essentially an abuse of human beings. Finally, the bodily well-being of the pullers is also related to their prospects as productive citizens. Some, like Hikida Eikichil, had suggested moving pullers to colonial projects overseas or Hokkaido. Like the author of the police journal, others suggested that pullers would be more likely to turn into laborers in other industries such as construction and cargo transport. In either case, it was necessary to keep the laborers in good health. At any rate, the nature of this profession required state interference. Again, the health conditions and professional choice of

pullers, as an integral part of the transportation system, were national problems and subjected to state surveillance.<sup>247</sup>

Despite these different arguments, there was a common underlying logic to concerns about the bodily well-being of both pullers and draft horses. As organic driving forces, both animals and pullers were parts of the urban transportation mechanism instead of purely metabolic and affective beings. As a result, therefore, both pullers' and animals' body conditions were closely related to the nation-building process. Kokubu Saitō, a journalist and bureaucrat, explicitly said, "Pullers are abject but lazy, unproductive and irrational; the fact that they were emerging as a category of laborers and even gathered as a large group was an omen of the subjugation of our country. It ignored human dignity, made people willing to be used like horses and oxen. This [rickshaw puller] is a kind of slave, and slavery is not allowed in any civilizations. Therefore, the existence of pullers is the denial of the civilized society."<sup>248</sup>

The anti-rickshaw discourse argued that the pullers' deteriorating bodies and the social disorders would bring disgrace to Japan. Ultimately, these forces would hamper the nation's effort to advance into a higher position in the international hierarchical order. For Hiroi and the anti-cruelty association, public abuse of animals would affect social morale. When the abuse became visible daily on the street, it would spread hostility among people, damaging human dignity and bringing disgrace to the nation.

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<sup>247</sup> Matsui Nama 松井生, "Jinrikishafu No Torishimari Nit Suite 人力車夫の取締に就て," *Keisatsu Kyōkai Zasshi* 警察協会雑誌, February 1904.

<sup>248</sup> Kokubu Saitō 国府犀東, "Jinrikisha Hash Iron 人力車廢止論." My translation.

Concerns on overworking carriage horses had been mounting in Meiji newspapers in the 1880s.<sup>249</sup> The anti-cruelty activists especially criticized owners of small omnibus companies. Three factors contributed to the over abuse of horses on the street: the diversifying options in urban transport, namely rickshaws, streetcars, horse carriages, bicycles; the consequently rising competition in the transport market; and the animal economy that treated horses as properties and living machines instead of affective human-like companions. The petty business owners of smaller horse carriage companies could only maintain their business at the lowest cost possible. This meant that they could only afford one or two horses, most of which were already in a bad state. So they worked the horses around the clock, dragging around poorly designed wagons, to raise their marginal gain. These small businesses and their employees were the most likely to be seen on the street whipping the horses. These are scenes full of despair of both the human and the animal. In other words, for these animal-protection advocates, the problem of animal abuse was essentially the problem of the less educated urbanites. The Tokyo police had been sharing similar judgments. They repeatedly expressed concerns over the problematic profession of horse-masters, for example, by introducing an exam system to ensure horse professionals had adequate knowledge to attend horses or issued notices to call out attention to horse abuses.<sup>250</sup>

However, for omnibus and horse-drawn streetcar business owners, the problem of employing draft horses was subject to biological constraints. As McShane and Tarr demonstrate,

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<sup>249</sup> “Basha Uma No Karōshi Aitsugu 馬車馬の過労死相次ぐ,” *Yomiuri Shinbun*, July 30, 1884, sec. Morning.

<sup>250</sup> “Norai Basha No Gyosha Ni Shaken Seido Dōnyū e 乗合馬車の御者に試験制度導入へ,” *Yomiuri Shinbun*, December 15, 1881, sec. Chōkan; “Uma o Kakoku Ni Atsuwanu Yōni Keishichō Ga Basha Gyōsha Ni Naiyu 馬を過酷に扱わぬよう警視庁が馬車業者に内諭,” *Yomiuri Shinbun*, May 5, 1890, sec. Chōkan.

the urban owner in America developed various mechanisms such as to counterbalance these biological traits that might reduce horses' functionality as living machines. For example, they used breeding and castration to standardize biological natures and mechanical attachments (harness, vehicles, improved horseshoes, and blinders) to improve performances.<sup>251</sup> The Japanese owners also faced such challenges: dealing with the unprecedented accumulation of horse urine in a city where the sewer system and the road condition were still underdeveloped. As the horse traffic grew, the horse station near Nihonbashi—where both omnibuses and streetcars converged and parked—even became a “urinal” that pedestrians could fall into if not paying enough attention.<sup>252</sup> The horse urine problem was not only a public urban hygiene problem but also an economic one. Horse urine corroded the road, hindered other businesses along the road, and resulted in an unexpectedly large amount of repair charges for both the streetcar company and the city. The streetcar company, city government, concerned small business owners, and the police department tried to negotiate a solution to the problem, starting in 1883. In 1885, the streetcar company finally received permission for upgraded engineering. They buried a channeling system under the tracks to reroute the urine to a collector near the public toilet near Nihonbashi's entrance.<sup>253</sup> This spot was exactly where the former big wooden gate stood in the Yokkaichi. The space created an interesting coincidence. As Chapter 1 discussed, the Takanawa ox carts also used to obtain permission to establish their temporary wagon yard at the same spot. The urine of the Takanawa cows used to be a part of this famous

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<sup>251</sup> McShane and Tarr, *Horses in the City*.

<sup>252</sup> *Asano Shinbun*, November 6, 1883.

<sup>253</sup> Tokyo-to, *Tokyo basha testudo*, 98–100.

place in Edo. However, now in place of the cows, the urine of the horses signaled the problems of Tokyo as an emerging modern metropolis.

Most of the rickshaws' problems also came from the "biological" part of the mechanism: the pullers. Humans were able to communicate, interact with clientele as people, able to strike, react violently. Humans could also be full of errors. The Meiji newspapers were filled with records of how pullers caused troubles, clashes, wrangles, fraud, and even instances of manslaughter. Police statistics in 1900 showed that rickshaw pullers accounted for more than 9 percent of all convicted crimes in Tokyo, even though pullers only constituted 3 percent of the total population.<sup>254</sup> The most typical troubles were pullers intentionally taking detours to trick passengers or conflicts with passengers on fares.

Compared to the infeasible proposal of transferring pullers to other businesses, improvements in technology were a more immediate solution to these problems. Early in 1877, Akiha Daisuke invented an innovative rickshaw with an attached meter, a clock-like device that would record the exact distance traveled, effectively preventing cheating on the fare. The advertisement Akiha published in *Tokyo Nichinichi Shinbun* stated that the device was easy to

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<sup>254</sup> Chapter 5 in James L Huffman, *Down and Out in Late Meiji Japan*. (Place of publication not identified: University of Hawai'i Press, 2019). There were four basic categories of rickshaw pullers in Meiji Japan: personal chauffeurs who worked for private, well-off individuals or families (*okakae* おかかえ), sharers employed based on commission or salaries (*yado* 宿), owner-pullers who had limited ownership of rickshaws and were organized into guild-type unions (*ban* 番), and drivers who were unorganized, unlicensed, renting vehicles for fees, and catching customers on streets (*mōrō* もうろう). Just like the day laborers from the Tokugawa era, the last two categories were usually the troublemakers. These rickshaw pullers made money based on the number of trips they made per day, which served as an incentive for them to run even faster than they were supposed to. This situation caused many rickshaw accidents and uncomfortable customer experiences, as newspaper articles well documented. Saito Toshihiko, *Studies of Rickshaws*, 236. Multiple newspaper reports on accidents on *Asahi*, *Yomiuri*, and other media coverages in *Shinbun shūsei Meiji Hennenshi*.

use for even women and children, applicable to both rickshaws and horsecars, and, as always, at an unbeatable price. [Image 7 Meter-Attached Rickshaws<sup>255</sup> Akiha's model obtained a second-class "Phoenix Award" in the Domestic Industrial Exhibition in 1878. He lost to Izumi Yosuke and another manufacturer, Oda Sahei, who had a design in cart spokes and carriage structure that ensured better stability.<sup>256</sup>

However, ten years later, Akiha's rickshaw meter received wider recognition to solve the fare dispute problem. In 1897, two different journals -- *Gakutō* (*The Light of Knowledge*), a popular institutional magazine by the publishing house Maruzen, and *Keisatsugan* (*The Eye of Police*), the institution magazine of the Police Association -- advocated the promotion of rickshaw meters. Again, technology became the solution to counterbalance the adverse effects of fights over fares, which riders attributed to uneducated and uncivilized pullers. The timing coincided with the "mixed residence" stage of the treaty revision. As the latter journal pointed out, using the meter would reduce much trouble when foreigners were involved, mainly because such devices were already common overseas.<sup>257</sup> Therefore, technical improvement of rickshaws was a necessary adjustment of social behavior, which aimed at facilitating the treaty revision process.

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<sup>255</sup> "Me-Ta-Tsuki No Jinrikisha メータ一付の人力車 (Meter-Attached Rickshaws)," *Tokyo Nichinichi Shinbun*, August 17, 1877.

<sup>256</sup> "Meiji jyūnen Naikoku kangyō hakuraikai shinsatsu hyōgo," in Fujiwara Masato, *Meiji zenki sangyō hattatsushi shiryō kangyō hakurankai shiryō* vol. 175, 453–459.

<sup>257</sup> "Jinrikisha No Kaizō 人力車の改造," *Gakutō 學鑑*, 1897; "Jinrikisha Torishimari Hō Ni Tsuite 人力車取締法に就て," *Keisatsugan 警察眼 Keisatsu Kyōkai 警察協会*, September 1897.



By the 1910s, technological development, the anti-animal cruelty movement, and Japan's modernization process came to trap rickshaws in a dilemma. On the one hand, rickshaws still dominated the streets of Japan. Designed to fit Japan's narrow streets, rickshaws' convenience, economical prices, and ability to absorb the urban poor were undeniable. It had essentially made Asian cities into their modern forms.

However, on the other hand, rickshaw pulling had increasingly become understood as the antithesis of Japan's modernization. The managing director of the Industrial Reform Association, Uchimura Tatsujirō, summarized the pressing need for the rickshaw's rapid evolution. On the one hand, the adoption of machines and energy transitions in the transportation industry went hand-in-hand with the anti-animal cruelty movement. For Uchimura, it was so because Euro-American cities had already reduced the use of horse-powered vehicles due to the mounting concern on animal protection. On the other hand, they had found more efficient machines that drove the urban transport -- namely automobiles, which now signified the direction of civilizational development. However, Uchimura laments, as the leading country and representative power in Asia, Japan's major public transportation still relied on rickshaws. Therefore, further industrial reform of affordable ways of public transportation was necessary to ensure Japan would have appeared as civilized as the Western powers.<sup>258</sup>

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<sup>258</sup> Uchimura Tajirō 内村達次郎, "Jinrikisha No Kairyō o Nozomu Kōgyō 人力車の改良を望む工業," *Kōgyō 工業 Kōgyō Kairyō Kyōkai Shuppan Bu Kōgyō Gakuin 工業改良協會出版部工業學院*, July 1909.

Image 7 Meter-Attached Rickshaws <sup>259</sup>

In short, what had been supporting the development of Japan's great cities had now grown to be a national disgrace and source of anxiety for concerning intellectuals who wanted to advance Japan's position in Asia and the world. This problem bothered the intellectuals as much as rickshaw manufactures, who were on the frontline determining the level of rickshaws' mechanical design and operational efficiency. Was there still hope for the development of this industry? This would be the topic of the next chapter.

<sup>259</sup> “Me-Ta-Tsuki No Jinrikisha メーター付の人力車 (Meter-Attached Rickshaws).”

## CHAPTER 3

### “MADE IN JAPAN”

#### RICKSHAWS AS A GLOBAL COMMODITY

##### A Tool, A Crafted Artwork, and A Technology

As the previous chapter demonstrates, the last decade of the nineteenth century witnessed a deteriorating reputation of the rickshaw and the pullers. While rickshaw pulling became tainted with national disgrace, the Japanese—intellectuals, entrepreneurs, policymakers—tried to portray themselves as modern entrepreneurs and exporters of rickshaws as a modern transport technology and even a well-made commercialized craft.

Starting from Tokyo, rickshaws soon proliferated in other Japanese cities and throughout metropolises in East and Southeast Asia, such as Hong Kong, Singapore, Shanghai, and Beijing.<sup>260</sup> These new conveyances became a regular feature of ordinary people’s daily lives and appeared regularly in the iconography of the great capitals of the East. The export of rickshaws to China started as early as 1873. As the domestic market for rickshaws shrank, the exports increased instead. In 1887, the Annual Statistics of Japanese Foreign Trade (*Dainihon gaikoku bōeki nenpyō* 大日本外国貿易年表) started to list export of rickshaws in a separate section as

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<sup>260</sup> “Tōkaidō Chinsen Gairyaku Hyō (Ninsoku Kago Jinrikisha Shariki) 東海道賃錢概略表 (人足・駕籠・人力車・車力),” November 1871, Kyūbutsu 5-1856-123, Butsuryū hakubutsukan 物流博物館; “Jinrikisha Iharu 人力車行 (はる),” *Fūzoku Gahō Rinji Zōkan (Yokohama Meisho Zue)* 風俗画報臨時増刊(横浜名所図会), n.d., National Diet Library 国立国会図書館.

one of the “principal exports.” It monitored the top three to four foreign countries or regions of trading destinies.<sup>261</sup> British India, East Indies and Siam, China (including Hong Kong), and Korea appeared most frequently in this section. However, rickshaws were also exported to French/Dutch India, Singapore, Egypt, and even Great Britain, France, Russia, the United States, and Germany.

Historians such as James Warren, Chi-Ming Fung, and David Strand have produced pioneering works on how the growing population of rickshaw laborers shaped the rapid urbanization process and local politics of Asian cities, even forging a trans-Pacific network.<sup>262</sup> However, they have not treated the rickshaw as a global commodity.

This chapter traces how small-time rickshaw manufactures, mostly family-based workshops, tailored their operations to overseas markets and tried to maintain the Japanese monopoly/superiority in the global market. The early twentieth-century introduction of electric trams in Asian cities did not stop but instead stimulated technical innovation in rickshaws. It also shows how the lower echelon of society also had a transformational impact on the rickshaw industry as well as the nation-building process. There was never a master plan engineered by any social elites in the rise of rickshaws. In the country, the rickshaw industry was supported by small-time entrepreneurs and even family workshops, who embedded themselves in the national

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<sup>261</sup> Data from Ōkurashō. Kanzeikyoku 大蔵省關稅局, *Dai Nihon gaikoku bōeki nenpyō* 大日本外国貿易年表 *Annual return of the foreign trade of the Empire of Japan*. (Tokyo 東京: Ōkurashō Kanzeikyoku 大蔵省關稅局, 1882-1928).

<sup>262</sup> Warren, *Rickshaw Coolie*; Fung, *Reluctant Heroes*; David Strand, *Rickshaw Beijing*.

project of industrial promotion. The quick spread of rickshaws in Japan and Asia also relied on the enlarging urban poor who needed such employment options. The small agents' effort in the export market foreshadowed their role in Japan's imperial projects later.

### *Fabricating An Export*

The factors that contributed to the rapid spread of rickshaws in Japan also made them into global commodities. In addition to rickshaw pulling's functionality to absorb the urban poor, as discussed in Chapter 2, rickshaw manufacturing was also an easily replicable process, given the local conditions in Asia. All the materials were readily available, and to make the basic forms of the rickshaw did not require too much advanced knowledge of engineering. In 1874, only one year after the debut of Japanese rickshaws in Shanghai, Chinese manufacturers had already established workshops to fabricate Chinese-made "East Ocean carts" or "Japanese carts (*Dongyang che*, 東洋車)." <sup>263</sup> In 1882, Hong Kong also established local rickshaw workshops. <sup>264</sup> In other words, the Japanese-made rickshaws had to compete with local products in the export destination. <sup>265</sup>

To ensure the attractiveness of Japanese-made rickshaws in the global market, the manufacturers tried to diversify and adjust to the targeted markets. Akiha Daisuke, for example,

<sup>263</sup> "Huaren Shesi Fangzao Dongyangche 華人設肆做造東洋車," *Shenbao*, April 24, 1874..

<sup>264</sup> Saitō Toshihiko 齊藤俊彦, *人力車の研究 Studies of jinrikisha*, 330.

<sup>265</sup> Rimmer, *Structure, Conduct and Performance of the Rickshaw Industry in East and South East Asian Cities, 1869–1939*.

added what he perceived to be Chinese and Southeast Asian features to what was already a Japanese/Western hybrid vehicle.<sup>266</sup> As early as 1875, Akiha had already created an export-oriented model, known as the No. 4 Model of Akiha's production line. This model had a motif of a lion painted with lacquer on the back of the rickshaw—an eye-catching feature that distinguished Akiha's product and prevailed on the streets of Singapore and Vietnam. In addition, he painted the rickshaws with black lacquer from outside, with one dragon floating on the top and another on the lower side for the Shanghai market.<sup>267</sup> Such design was drastically different from Akiha's most popular design in Japan, which featured the plain-red body of the rickshaw, following 1872 Tokyo regulations that banned all rickshaws from any motifs or patterns.<sup>268</sup> In the 1890s, Singapore also issued its own rules on rickshaws with similar regulation on patterns, to which Akiha quickly adjusted with plain-black rickshaws.<sup>269</sup> Akiha's tailoring strategy made him the most prominent rickshaw exporter in Japan. In 1883, *Yomiuri Shinbun* reported that Akiha received a large order of 2,000 rickshaws from the global market, out of a total export number of 2,170 in that year.<sup>270</sup>

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<sup>266</sup> Rimmer, 599.

<sup>267</sup> “Makie no jinrikisha – Shanghai he tsumi dashi 蒔絵の人力車-上海へ積み出し,” 1885-7-4, *Tokyo nichinichi Shinbun*, in Meiji Hennenshi Hensankai 明治編年史編纂會, *Shinbun shūsei Meiji hennenshi*, vol. 6, 111.

<sup>268</sup> This was possibly due to concerns of “uncivilized” designs, since early manufactures tend to paint rickshaws with blatant and exaggerated patterns, such as bathing prostitutes, to attract customers.

“Kaigai Ni Okeru Nihon Jinrikisha Singapore de Kyūzō 海外における日本人力車 シンガポールで急増、馬車は減少.”

<sup>270</sup> “Ginza No Akiha Daisuke He Chōsenkoku Kara Jinrikisha 2000 Ryō No Chūmon 銀座の秋葉大助へ、朝鮮国から人力車 2 0 0 0 両の注文,” *Yomiuri Shinbun*, July 6, 1883..

Image 8 Export-oriented rickshaws in Akiha Shoten's catalog

Daisuke Akiha Jinrikisha Catalogue.

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No. 3 Jinrikisha for one person.



DESCRIPTION OF CONSTRUCTION.

Lacquering, NURITATE; Trimming plush; Hood, sides open, of rubber muslin; Wheels, eighteen knotted spokes; Axle, with nuts; Shafts, fitted with metal tip in the shape of elephant's trunk.

No. 4 Jinrikisha for one person.



DESCRIPTION OF CONSTRUCTION.

Lacquering, best NURITATE; Trimming, best plush; Arm-rests, fitted; Hood, open style, of rubber muslin; Mud-guards, full length, carefully lacquered; Wheels, eighteen knotted spokes, with outer hoops capped.

The efforts of rickshaw manufacturers received official recognition because they aligned with another national project: *Shokusan kōgyō* (殖産興業), the industrial promotion plan. For example, Akiha Daisuke's rickshaw models received several honorable awards in the National Industrial Exhibitions, including some First Prizes. He also became the first rickshaw manufacturer to receive medals from a foreign fair, the 1902 Hanoi Asiatic Exposition. His foreigner-oriented product catalog proudly featured these medals.

The rickshaw manufacturers—mostly small-time entrepreneurs—were themselves conscious about their role in the national project. “Selling rickshaw only in the domestic market cannot serve Japan the most,” Itō Tekezaburō(伊東竹三郎), one of the major rickshaw manufacturers, once said. “We had to export rickshaws to foreign countries in exchange for

foreign currency. Export is necessary for the finance of Japan.”<sup>271</sup> Akiha made a proactive attempt to present his rickshaws on diplomatic occasions to demonstrate Japanese crafts and industrial products’ excellence. He constructed a beautiful rickshaw to present to the President of Switzerland in 1882. Upon learning the interest of the Crown Prince of Russia in rickshaws, he built a special model as a present when the prince visited Japan in 1891.<sup>272</sup> As with the efforts to participate in the industrial expositions, manufacturers’ participation in global markets and diplomacy efforts signified how the small-time entrepreneurs incorporated themselves in the enlightenment efforts to transform Meiji Japan from the bottom up.

The export business became a huge topic of discussion in Meiji newspapers, which celebrated rickshaw exports as a Japanese success story even as they continued to describe daily accidents and troubles on the streets of Japanese cities. Almost every year from 1889 to 1899, newspaper articles reported a steady increase of export orders from overseas, as the destinations expanded beyond China and mainly to Singapore and Vietnam. They tended to use the word “great situation” or “prosperity” (好況) to describe the vigorous industry and emphasized how busy these workshops were in trying to meet deadlines. They sometimes had even to turn down requests.<sup>273</sup> Thanks to the increasing demand in the overseas market, especially in Singapore and Vietnam, Tokyo’s rickshaw manufacturing industry could recover from the setback and even

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<sup>271</sup> “Seikōshita Otto Omomuku Tomo Kasegi Bidan 成功した夫赴共稼ぎ美談,” *Shūfu No Tomo 主婦の友*, July 1925.

<sup>272</sup> “Akiha Shōten Catalog 秋葉商店カタログ.”

<sup>273</sup> “Yushutsu Jinrikisha Kōkyō Singapore Nado Kara Rikuzoku to Chūmon 輸出入力車が好況 シンガポールなどから陸続と注文,” *Yomiuri Shinbun*, March 27, 1899.



expand their business and anticipate a bright future.<sup>274</sup> As a result, by 1886, the exports had reached Malacca. The Malacca Strait settlements became the primary market from 1887 onwards and included Singapore, Penang, and Malacca, along with British and French India, French Vietnam, Siam, and the Philippines. Records also showed small amounts of export to Europe, the United States, and Australia. In South Africa, Durban in 1892 and Kuala Lumpur in 1893 received the first Japanese-made rickshaws.<sup>275</sup> In the early 1900s, a Japanese journalist reported 8,000 rickshaws and 2,000 horse-carts that served a population of 193,000 in Singapore, which contributed to the city's prosperity.<sup>276</sup> Businessmen took part in extending a vision of Meiji modernity and claiming Japan's place as one of the advanced civilized nations in the world.

Sometimes, the desire for Japan's success in export often led to greater attention to export heading to Western countries and colonies, even though the numbers were minimal. In 1881, the *Yomiuri Shinbun* celebrated the earliest rickshaw exports to the Western countries, which were only three to four rickshaws. However, the journalist emphasized that these were among the "highest class" (*jōtō* 上等) products exported from Yokohama.<sup>277</sup> In Hong Kong, there was already a local supply of rickshaws, and most merchants in the business of rickshaw imports were non-Japanese businessmen. However, *Tokyo Nichinichi Shinbun*'s reporter still

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<sup>275</sup> Ōkurashō. Kanzeikyoku 大蔵省關稅局, *Dai Nihon gaikoku bōeki nenpyō* 大日本外國貿易年表 *Annual return of the foreign trade of the Empire of Japan*.

<sup>276</sup> "Jinrikisha Yushutsu No Keiteki 人力車輸出の勁敵," *Asahi Shinbun*, September 18, 1901; "Jinrikisha No Yushutsu Juyō Chi Singapore No Densha Fusetsu Ni Yori Chūmon Ga Ochi 人力車の輸出 需要地シンガポールの電車敷設により注文ガタ落ち," *Yomiuri Shinbun*, December 10, 1904.

<sup>277</sup> "Seiyō Demo Jinrikisha Ryūkō Senbin Goto Ni Sudai Zutsu o Funazumi 西洋でも人力車が流行? 船便ごとに数台ずつを船積み," *Yomiuri Shinbun*, June 29, 1881..

enthusiastically reported that the passengers were delighted to have the Japanese-made rickshaws on the streets.<sup>278</sup> Several reports in the late 1880s celebrated the exports of rickshaws to France when the statistics showed only three or four rickshaws ended up in the French market compared to hundreds of exports to China and India. Sometimes, the journalists might also use “export to France” to label exports to the French colonies in Southeast Asia.<sup>279</sup> The pride, therefore, came from mainly the global reach of exports rather than the absolute number.

### ***Racialized Rickshaw Pullers***

The widespread rickshaw, which was considered a national pride of Japan, also racialized rickshaw pullers. It coined a profession (if not class) into a racial hierarchy that was gaining its momentum in Asia and the world.

The export of rickshaws consequently led to an enlarging population of rickshaw pullers across Asia. To some extent, as in Tokyo, absorbing the urban poor was a significant reason rickshaws became widespread in Asia. For example, the Taiwanese governor, Liu Mingchuan, imported the Japanese-made rickshaws to Taipei precisely because rickshaws offered a stabilizing effect by providing the urban poor new jobs. It also introduced this new, modern

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<sup>278</sup> “Hong Kong he jinrikisha yushutsu 香港へ人力車輸出,” 1882-1-3, *Tokyo Nichinichi Shinbun*, in Meiji Hennenshi Hensankai 明治編年史編纂會, *Shinbun shūsei Meiji hennenshi*, vol. 5.

<sup>279</sup> “Shina no jinrikisha – Meiji 8 nen goro kara okoware maitzuki Nihon kara hyakudai yunyū 支那の人力車-明治八年頃から行われ毎月日本から百台輸入,” 1886-10-24, *Tokyo Nichinichi Shinbun* Meiji Hennenshi Hensankai 明治編年史編纂會, *Shinbun shūsei Meiji hennenshi*, vol. 6, 345; “Shafu torishimari kisoku kaisei demo jinrikisha no kokunai juyūō fuezu Sei Futsu he no yushutsu ha 1300 dai 車夫取締規則改正でも人力車の国内需要ふえず、清、仏への輸出は1300台,” 1889-10-4, *Yomiuri Shinbun*. Data reference from *Dai Nihon gaikoku bōeki nenpyō*.

mode of transport, putting Taipei's streetscapes in the company of streets in Asian metropolises such as Tokyo and Shanghai.<sup>280</sup> In 1915, there were 600 more rickshaw pullers than rickshaws in Taipei, and many pullers were taking day/night shifts with co-workers to save up the rent for a rickshaw.<sup>281</sup> In Singapore, the first consignment of rickshaws was imported from Shanghai in 1880 but then from Japan in the following year. Within one year, over a thousand rickshaws were running on the streets of Singapore. By 1924, there were 28,800 active rickshaws for hire on the street. Rickshaws had become "the pride of the road at the turn of the century" in Singapore.<sup>282</sup>

The rise of rickshaws across Asian cities suggested a rather ironic transformation of the urban labor force and urban draft animals. As discussed in Chapter 2, the rational economic regime in modern time had mechanized the animals as living machines, while manual labor - represented by the rickshaw pullers-became increasingly animalized.

While western-influenced anti-cruelty campaigns raised awareness of animal conditions in public, the rise of rickshaws also contributed to the decreasing number of draft animals. Humans were far more cleaner energy in this regard. With fewer draft animals, streets became far cleaner, less littered with horse shit, animals' corpses, rats, and other animals that fed on both. As a result, the streets became far more the redoubt of humans, while animals were less present. In a way, this change revealed the civilizational significance of the rickshaws.

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<sup>280</sup> Gao Chuanqi 高傳棋, *Qing dai Taibei jiao tong : chuan shan yue yang guan dong xi* 清代臺北交通: 穿山越洋貫東西 (Taipei 臺北市: Taibei Shi wen xian wei yuan hui 臺北市文獻委員會, 2008), 140.

<sup>281</sup> "Jinrikisha no kisoku 人力車之規則," *Taiwan nichinichi shinpō* 台灣日日新報 no.5402, July 5, 1915, 4.

<sup>282</sup> James Francis Warren, "Living on the Razors Edge: The Rickshawmen of Singapore between Two Wars, 1919-1939," *Bulletin of Concerned Asian Scholars* 16, no. 4 (1984): 38-51.

While mechanized animal laborers became easily replaceable – either by human powers or by electricity – and attracted sympathy, animalized laborers were less so and mainly were seen as trouble. The ever-burgeoning rickshaw labor force challenged the city’s ability to deal with growth and change. As discussed in Chapter 2, the role of rickshaw pullers had been contradictory from different perspectives. On the one hand, they were expected to act like machines, providing just another fuel option that powered the circulation within the urban space. For example, a Japanese journalist in colonial Taiwan used the term “mechanical labor workers (機械的力役者)” to describe rickshaw pullers.<sup>283</sup> On the other hand, they were criticized for not able to act like motionless and automatic machines precisely due to their humanity and biological constraints. Human laborers could interact with clientele, strike, react violently, causing all sorts of troubles in the city.

By the 1890s, as discussed in Chapter 2, both rickshaw pulling and rickshaw riding had been increasingly problematized to the extent that rickshaw pulling was criticized for bringing national disgrace as animal-like labors. Similar controversies followed the rickshaws to its export destinations in Asia but translated into a new racialized hierarchy. For example, the import of rickshaws to Singapore, interestingly, coincided with a rapid increase of immigrating Chinese workers from the 1880s to the 1890s. Most of the rickshaw pullers in Singapore were male Chinese sojourners from the countryside of Guangdong and Fujian. They were driven out by periodic poor harvests, flood-caused famines, and the rising price of rice. They arrived in

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<sup>283</sup> “Taiwan Liyizhe Shenghuo Zhuangtai 台灣力役者生活狀態,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, September 23, 1910.

Southeast Asia – Singapore, Saigon, Rangoon -- impoverished, alone, indebted, but with able bodies, so becoming a rickshaw puller was the most common choice for them.<sup>284</sup> Their local ethnic and sub-ethnic groups also functioned as a local niche among them, reinforcing this professional choice. However, it was not much of a “choice” for these immigrants, who had few.<sup>285</sup> Their ethnicity combining with a similar socio-economic background made them a rather distinct group across Asian cities.

To some extent, the racialization of rickshaw pullers was intentional. In 1910, the colonial government of Taiwan proactively recruited laborers to support the industrial development of Taiwan. As Japan’s first colony, colonial Taiwan lacked the capital, funding, and laborers for further development (See Chapter 4). The demand for laborers led to relatively high wages for laborers. Some immigrant workers came from Japan, but more came from southern China. While Japanese immigrants became skilled workers, most Chinese sojourning laborers became manual laborers. By this time, rickshaw pulling had become a desirable job. The average daily wage for a puller in Taipei could earn 70 – 80 sen, much more than the average wage of 40-50 for day labor/coolies and palanquin carriers.<sup>286</sup> In 1908, there were 765 Taiwanese, 635 Qing/Chinese sojourners, and 11 Japanese working as rickshaw pullers in Taipei.<sup>287</sup> By 1922, 1200 out of the total 1600 pullers in Taipei came from China.<sup>288</sup> Most of the sojourning laborers

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<sup>284</sup> Haydon Cherry, *Down and out in Saigon: Stories of the Poor in a Colonial City* (New Haven: Yale University Press, 2019)..

<sup>285</sup> Warren, “Living on the Razors Edge: The Rickshawmen of Singapore between Two Wars, 1919-1939.”

<sup>286</sup> “Taiwan Liyizhe Shenghuo Zhuangtai 台灣力役者生活狀態.”

<sup>287</sup> “Ying Ye Yi Ban 營業一斑,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, August 7, 1908..

<sup>288</sup> “Huaqiao Zi Taiwan Zhi Songjin 華僑自台灣之送金,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, March 28, 1922.

came from Fujian and Guangdong, especially Quanzhou and Zhangzhou, which were the exact origins of those who went to Singapore. They worked hard and saved up harder. In 1922, the 1200 Chinese pullers managed to send back home what they saved up for a year for a total amount of 860,000 yen.<sup>289</sup>

In this sense, a class problem became a racial problem with the global marketization of rickshaws. Pullers were not just urban laborers but “coolies.” Moon-Ho Jung suggested that coolies were “a conglomeration of racial imaginings that emerged worldwide in the era of slave emancipation.”<sup>290</sup> The rickshaw pullers soon fell into this category. Originally used to describe coerced Asian laborers in the Caribbean, “coolies” as a categorical imagination enlarged as migrant Asian workers spread globally. The spread of rickshaws further reinforced the hierarchical and racial presentation of the nature of coolies. In Asian metropolises (Beijing, Shanghai, Hong Kong, Singapore), most rickshaw pullers were of Chinese origin.<sup>291</sup> The visual presentation of rickshaw pullers presented a blatant contrast: half-naked Asian males working like draft animals, sweating on the streets, serving another well-dressed human being in the carriage. The racialized category, however, spilled over to the Japanese pullers as well. John Francis Campbell, a Scottish scholar, visited Japan in 1874 and described a Japanese rickshaw

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<sup>289</sup> “Shina Honkoku He Nagareru Kane Taiwan Kara Ichinen Ni Hajyūroku Man Yo Yen Dekasegi No Shafu Ga Okuru 支那本国へ流れる金 台湾から一年に八十六万余円 出稼ぎの車夫が送る,” *Taiwan Nichinich Shinpō* 台灣日日新報, March 28, 1922.

<sup>290</sup> Moon-Ho Jung, *Coolies and Cane: Race, Labor, and Sugar in the Age of Emancipation* (Baltimore: Johns Hopkins University Press, 2006), 5.

<sup>291</sup> By 1921, all 9,244 rickshaw pullers in Singapore were Chinese-born, with no Singaporean natives, and even during the 1930s, the vast majority still came from China. A Japanese English magazine reported that in London, on Oct. 26, 1921, the Bournemouth Municipality received an application for permission to establish a jinrikisha service with Indian pullers. “Rikisha for Bournemouth,” *The Rising Generation* 英語青年, November 1921.

puller as “a coolie adorned with pictures; an illustrious illustrated edition of a civilized man, whose civilization is barely covered by European forms.”<sup>292</sup> The socio-economic choice of profession, therefore, was tainted with judgments on civilization and race.

Japanese intellectuals embraced this racialization of “coolies” to separate themselves from other East Asians and Africans. A Meiji intellectual, Shimamura Hōgetsu, wrote about elites’ attitudes towards rickshaw pullers when he traveled to Hong Kong in 1902. According to Shimamura, Chinese pullers were often beaten by their customers. Some Japanese companions also beat their pullers or used the tip of an umbrella to poke their backs, complaining about their slow speed. They did it, Shimamura explains, out of curiosity of “how it felt like to beat a Chinese guy.”<sup>293</sup> The renowned explorer, Kanno Rikio, visited South Africa and captured an image of contrast. Here, the western-style dressed Japanese explorers stood next to an African puller in their ethnic attire in front of a Japanese-made rickshaw.<sup>294</sup>

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<sup>292</sup> Campbell, *My Circular Notes. Extracts from Journals, Letters Sent Home, Geological and Other Notes, Written While Travelling Westwards Round the World, from July 6, 1874, to July 6, 1875*, 191.

<sup>293</sup> Chen Zhan-yi 陳湛頤, *日本人訪港見聞錄: 1898-1941(What Japanese Saw and Heard in the Visits to Hong Kong)* (Hong Kong: Joint Publishing, 2005), 80.

<sup>294</sup> *Jinrikisha Postcard Collection*, Unknown, Unknown, Meiji Shinbun Zasshi Bunku Collection Tokyo University.

Image 9 Kano Rikio, Japanese explorer and a rickshaw puller in South Africa



In this racialized context, the Japanese refused to be associated with the profession of rickshaw pulling. In 1893, the San Francisco World Exhibition planned to present a rickshaw model and hired a local Japanese man as a rickshaw puller for the demonstration. The local Japanese residents fiercely opposed this project. They organized demonstrations in the park in front of the city hall, petitioned the exhibition committee, and even accumulated enough donations to hire political lobbies to help terminate the program. Some Japanese sailors even used an iron stick to beat up people who supported the pulling of rickshaws in the exhibition, which, as they argued, had become a national disgrace.<sup>295</sup> In a way, the intentional separation of rickshaw making and rickshaw pulling became a means for the Japanese elites to redefine their position in the hierarchical global market.

<sup>295</sup> “Beikoku sōkō hakurankai de nihonjin jinrikisha shiyō – hōjin hantai 米国桑港博覧会で日本人人力車使用一邦人反対,” 1893.2.10, *Jiji*. in Meiji Hennenshi Hensankai 明治編年史編纂會, *Shinbun shūsei Meiji hennenshi*, vol. 9, 25.



Japanese elites found Japanese-made rickshaws a sign of civilized wonder when they traveled to presumably less civilized places. The Taiwan expert Ueno Senichi was surprised to find countless rickshaws made in Japan running on Taiwan's streets. Ueno put rickshaws as one of the "wonders" of contemporary Taiwan, along with gas lights that kept the night as daytime, trains running on railroads, developed telegraph networks, machine-driven factories, and official English schools to study the language of the world. Contrary to the common perception of Taiwan being a "primitive society," he wrote, these were magnificent signs of civilization.<sup>296</sup> However, for the Japanese elites in the 1890s, rickshaws had already ceased to be a striking icon for modernity on the Japanese streets; it only became a sign of civilization when observed in other Asian countries outside of the boundary of Japan.

### ***Repositioning Rickshaws in the Global Market and Projecting Japanese Technical Power***

By the turn of the twentieth century, the introduction of electric trams seemed to be the final nail in the coffin for rickshaws, not only in the Japanese domestic market but also in export destinations. In 1903, the horse-drawn streetcar in Tokyo was electrified. Electric trams started to operate in Singapore in 1902, in Hong Kong in 1904, in Penang in 1906, and Seoul in 1910. Table 1 showed an apparent decline in the number of rickshaws in the Japanese market.

Nevertheless, the Japanese had grown to see themselves as authentic manufacturers and global exporters of rickshaws. Statistics show that while the turn of the century marked the

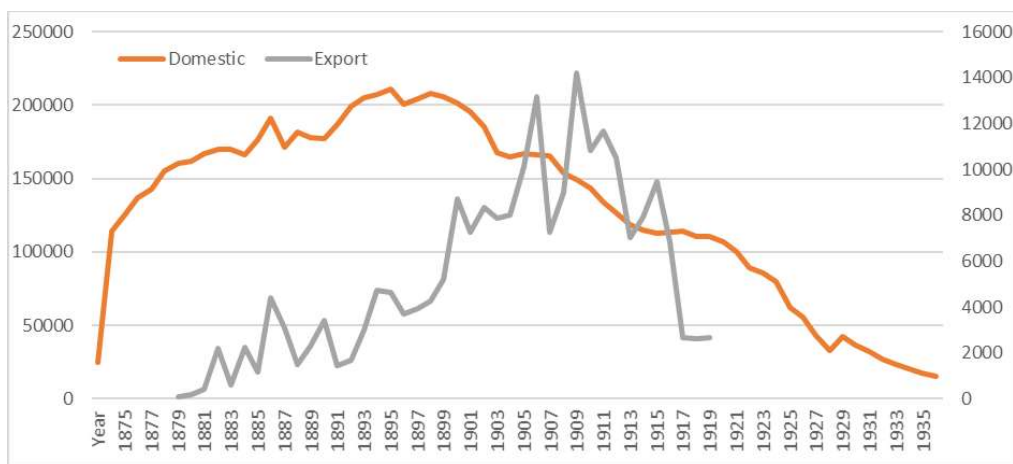
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<sup>296</sup> "Ueno Senichi Shi No Taiwan-Banashi 上野専一氏の台湾話," *Asahi Shinbun*, March 25, 1892.

decline of rickshaw inventory in Japan, it also indicated an increasing trend in rickshaw export [Table 2. The trend of numbers of rickshaws in domestic and export markets, 1871-1938]. The exports of rickshaws peaked at 14,197 rickshaws in 1910, bringing in 418,323 yen in export revenue. Although this number of rickshaws never exceeded the number of rickshaws in Tokyo in the first year of its invention, the Meiji media celebrated the export of rickshaws as a success story of projecting Japanese technical prowess.

The transition to other forms of transportation did not end rickshaws, at least not immediately. On the contrary, the Japanese entrepreneurs started to seek other ways to sell their products – the rickshaws. The perspectives in the global market spurred another round of technical innovation, one which aimed not only to cater to different tastes of the targeted market and improve the customer experience but also to improve technology to help maintain the Japanese monopoly and superiority in the rickshaw's global market.

Table 2. The trend of numbers of rickshaws in domestic and export markets, 1871-1938



Source: Export data based on multiple years of the *Annual Statistics of Japanese Foreign Trade* by the Ministry of Finance. Domestic data cited from Saito Toshihiko, *Studies of Rickshaws*, Appendix data, 324-325. Y-axis on the left refers to the domestic data, on the right refers to the export data.

The global market for rickshaws relied on foreign merchants, especially Chinese intermediaries. The first batch of rickshaws exported to Singapore made their way not from Japan but Shanghai.<sup>297</sup> Even within the Japanese export market, Chinese and English merchants in Yokohama and Kobe took the most initiative to bring rickshaws to Hong Kong and mainland China.<sup>298</sup> In 1882, for example, only 16 out of the total export of 410 rickshaws were exported directly by Japanese merchants.<sup>299</sup> With well-established networks in Asia, the Chinese businessmen were more resourceful than Japanese merchants and even the officials. For example, in 1895, Itō Tekezaburō was unable to secure an export route through the Agricultural and Commerce Ministry channels until he finally found a way to send samples to the Chinese merchant house in Yokohama.<sup>300</sup> Chinese intermediaries also had more credibility than Japanese merchants to ensure the customers received the same model promised by samples in the contracts.<sup>301</sup>

To improve their global market performance and circumvent the foreign middlemen in the business, the Japanese manufacturers tried hard to gather information about their targeted customers. When Akiha Daisuke died in 1894, his son-in-law inherited his business as well as

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<sup>297</sup> Rimmer, *Structure, Conduct and Performance of the Rickshaw Industry in East and South East Asian Cities, 1869-1939*. 605.

<sup>298</sup> “Kōbe Zairyū No Eikokuujin Ga Jinrikisha 160 Dai Wo Hong Kong He 神戸在留の英国人が人力車160台を香港へ,” *Yomiuri Shinbun*, July 8, 1882.. The operation of Chinese native-place networks may have played a significant role here in the transaction and operation of rickshaws overseas, not only in Shanghai, but in Hong Kong as well, see Fung, *Reluctant Heroes*..

<sup>299</sup> Ministry of Finance, *Dai nihon gaikoku bōeki nenhyō 大日本外国貿易年表*. Saitō Toshihio, *Jinrikisha no kenkyū*, 277.

<sup>300</sup> “Itō Takezaburō den 伊東竹三郎伝.” Requoted from Saitō Toshihiko, *Jinrikisha no kenkyū*, 228.

<sup>301</sup> Saitō Toshihiko, *Jinrikisha no kenkyū*, 228.

his name. Facing the new challenge at the turn of the century, Akiha II went on an inspection trip in 1903 to explore the potential export market. He went to Tianjin, Beijing, Shanghai, and Hong Kong, visited almost every local rickshaw workshop, and recorded every technical dimension and detail of different models. He also investigated road conditions, climate, urban demography, price of manufacturing materials (such as lacquer, different kinds of woods), tariffs, and city regulations, all of which were determinants of the scale and the potential of the overseas rickshaw market.<sup>302</sup>

Conditions in China – the presence of colonial powers, the growing urban poor, the dire need for urban infrastructure upgrades, and the political and economic constraints to do so -- epitomized the general conditions of the rickshaws' targeted market in Asia. In 1903, China had not yet recovered from the Boxer Rebellion. The northern cities, Beijing and Tianjin, were experiencing political chaos, making it harder for the city officials to improve the urban infrastructure quickly. While bad road conditions might constrain business opportunities for high-end rickshaws like the Akihas', the presence of the semi-colonial European powers, which were prominent in all four cities, provided other opportunities. Akiha made a special note about Tianjin and Shanghai's foreign settlement, which indicated a potentially high demand for urban transport options. Such presence was especially ubiquitous in port cities, such as Shanghai and Hong Kong, where trading networks between Asia and the West had been long established.<sup>303</sup>

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<sup>302</sup> Akiha Daisuke II 秋葉大助二代, "Seikoku Ni Okeru Jinrikisha Hanro Kakuchō No Tame Shisatsu No Hōkoku Yōkō 清国に於ける人力車販路拡張ノ為視察の報告要項," n.d., Saitō Toshihiko Private Collection..

<sup>303</sup> It is also interesting to note that the standard of whether a city was suitable for the operation of rickshaws or not reflected an emerging standard of civilized urban environment in Asia.

To some extent, the fact that most Asian metropolises were in a colonial or semi-colonial status also contributed to the ongoing demand for rickshaws. First, most Asian cities still lacked developed infrastructure and relied on a combination of automobiles, horsecars, bicycles, and steam railways. Therefore, rickshaws were quite suitable to run on narrow streets with less risk of collision than other modes.<sup>304</sup> Secondly, the influx of cheap labor from the countryside dragged down labor prices and ensured rickshaws as the most cost-efficient option. More importantly, the colonial context made the Europeans' hypocritical use of rickshaws more or less evident. While criticisms were mounting against the "inhuman" use of human powers, the European elites were nevertheless more than willing to employ the cheap and convenient rickshaws to get around. The tropical climate in Southeast Asia also made the urban elites more inclined to choose convenient transport over walking.<sup>305</sup>

After careful market research, Akiha reached a cautiously optimistic conclusion about the rickshaw manufacturing industry's future, which came to be shared by his peers. Akiha also urged more substantial investments in rickshaw manufacturing and technological upgrades to maintain the Japanese advantage in the rickshaw market.<sup>306</sup>

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<sup>304</sup> Akiha Daisuke II 秋葉大助二代, "Shōhin Toshite No Jinrikisha 商品としての人力車," *Diamond: Economic Journal* ダイヤモンド経済雑誌, May 1918.

<sup>305</sup> Akiha Daisuke II 秋葉大助二代, "Jinrikisha Seizō No Shōrai 人力車製造業の将来," *Jitsugyō No Sekai 実業之世界*, November 1910.

<sup>306</sup> Akiha Daisuke II 秋葉大助二代, "Seikoku Ni Okeru Jinrikisha Hanro Kakuchō No Tame Shisatsu No Hōkoku Yōkō 清国に於ける人力車販路拡張ノ為視察の報告要項"; Akiha Daisuke II 秋葉大助二代, "Jinrikisha Seizō No Shōrai 人力車製造業の将来."

With the overseas market demand, the problem now was maintaining the Japanese monopoly over rickshaw manufacturing. Interestingly, the need to upgrade rickshaws was supported by other global commodities, for example, rubber. In 1903, rickshaw manufacturers replaced the noisy iron wheels with novel material, solid rubber. At first, the upgrades primarily served the need of fashionable gentlemen, who “would be as lost without their rubber-tired rickshaws as without their trousers.”<sup>307</sup> However, by 1905, professional pullers based at railway stations had widely adopted this model. The newspaper advertising of the Dunlop Rubber Company of England also helped boost Akiha’s sales to 3,000 in 1909, out of which 60 percent were sold to the overseas market.<sup>308</sup> Rubber wheels were brought to Singapore in 1902 and Beijing in 1912. Although there was no clear evidence on whether the initial adaptations of rubber wheels in these places were indigenous or imported from Japan, the competition between manufacturers of older and newer rickshaws on the global market was conspicuous.<sup>309</sup>

Japan’s incorporation in the global capitalism system enabled the technical upgrade of this indigenous product. Akiha’s workshop was an exemplary case of how Japanese production employed globally sourced materials as well as Western and East Asian design principles. Akiha adopted a rudimentary assembly line, purchasing materials from the global market and collecting manufactured components from other subcontractors. For example, he purchased leather from

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<sup>307</sup> Rimmer, "Structure, Conduct and Performance of the Rickshaw Industry in East and South East Asian Cities, 1869–1939," 599.

<sup>308</sup> Ibid.

<sup>309</sup> Ibid, 608. In 1892, the Tih Tung Company in Shanghai introduced a new rickshaw, which was the model used in Lao She's classic proletarian novel *Rickshaws Boy*. It had moveable shafts, a big curtain made of waterproof cloth, two lamps, a brass trumpet, and steel wheels covered with rubber. It was so quiet that it was often involved in accidents, prompting a temporary ban on its use until 1914. These were in major competition with the imported models from Japan.

India, rubber for the rickshaw hood and fabric for interior cushions from Britain and Germany, lacquer from China and Japan, and iron to make shafts and springs from Britain and Spain. In Tokyo's leading workshop, Akiha manufactured metal equipment, assembled rickshaws, and finished them with various painting patterns.<sup>310</sup>

The assembly line made the workshop flexible enough to tailor to the manufacturing condition of the export destination. Akiha's investigation in Chinese workshops in Beijing and Tianjin revealed that many Chinese manufacturers chose to import just the component parts of rickshaws from Japan because it would be too expensive to import the complete model of rickshaws. Usually, the local workshop made the carriage themselves, with cheaper wood and lacquer and usually poorly designed styles. However, due to the "national character" (*kokuminsei* 国民性) of China, according to Akiha, the Chinese customers did not pay too much attention to rickshaws' quality as long as they functioned well.<sup>311</sup> Akiha thus exported well-made rickshaw components and mechanical parts instead of assembled rickshaws. This strategy proved effective not only in Akiha's export effort but also in contributing to the later pivoting of Akiha's enterprise. By 1923, the Akiha workshop had become the industrial supplier of not just rickshaws but also automobile parts, including rubber, tires, coating, and even cart

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<sup>310</sup>“Akiha Shōten-Hakurankai Shuppin Kaisetsu 秋葉商店博覧会出品解説,” n.d., Saitō Toshihiko Private Collection..

<sup>311</sup> Akiha Daisuke II 秋葉大助二代, “Shōhin Toshite No Jinrikisha 商品としての人力車.”

manufacturing tools. Their exporting experience also enabled them to diversify their business, not just as producers but also as exporters.<sup>312</sup>

Table 3. Akiha's Rickshaw Production Figures in Selected Years<sup>313</sup>

Year	Domestic			Export				Total	Japanese Export Total	Akiba/Japan Total Export %
	Domestic Total	No.2 one-seated	No.3 Eagle Brand one-seated	Export Total	No.1 one-seat horse-cart style	No.3 Eagle Brand One-seated	No.4 Lion motif two-seated			
1897	1060	950	110	3250	50	200	3000	4310	3677	88%
1898	1240	1100	140	3580	70	210	3300	4820	3917	91%
1899	1210	1050	160	3540	110	230	3200	4750	4266	83%
1900	1450	1300	150	3670	130	240	3300	5120	5188	71%
1901	1350	1150	200	3910	150	260	3500	5260	8708	45%

The competition in the global market also stimulated further upgrades. Another famous rickshaw manufacturer, Itō Takezaburō, invented what the contemporary journalists praised as the “ideal replacement of rickshaws” in 1914. Inspired by the invention of the bicycle (1888) and building on the application of air-filled rubber-tired new rickshaws, Itō replaced the two-shaft part of the rickshaw with a bicycle-like mechanism. The outcome was a three-wheeled cart: combining a bicycle at the front and a well-made western-style seat in the back. In this way, passengers would experience a more pleasant ride behind a cyclist than sweating, running puller in front of the vehicle. Itō presented this model at the Domestic Industrial Exhibitions, and he

<sup>312</sup> “Kuruma Issai No Goyō Wa Kabushiki Kaisha Tokyo Ginza Akiha Shōten 車・一切の御用は株式会社東京銀座秋葉商店,” *Norimono 乗りもの*, 1923..

<sup>313</sup> Original source of data from *Dainihon kaikoku bōeki nenhyō*, quoted from Saitō, *Jinrikisha no kenkyū*, 226.



mainly targeted the export market.<sup>314</sup> This innovation did not change the source of the driving energy at all. Still relying on human power, it kept the rickshaws' best advantage, deploying cheap, flexible human resources at its targeted markets while maximizing its efficiency through mechanical upgrades.<sup>315</sup>

Image 10. Three-wheeled Rickshaw Model by Itō.



伊東三郎氏と其發賣人の備車

In the 20<sup>th</sup> century, Japanese officials remained conscious of the growing role of their nation as a proactive producer and exporter in the global arena. In 1905, officials from Japanese overseas consulates published a business analysis report for domestic manufacturers' reference. The report made three clear points. First, the demand for Japanese rickshaw imports in Singapore was still high. This was because merchants in Singapore would re-export a considerable amount of rickshaws to other Southeast Asian countries such as Malaysia and Java. Second, the Japanese-made wooden wheels attached to rubber tires were cheap but could not effectively compete with the rubber tires that used American or British-made steel wheels. Third, electric

<sup>314</sup> “Jinrikisha Ni Kawaru Beki Risōteki Shin Norimono Arawaru 人力車に代わるべき理想的新乗物現はる。” *Jitsugyō No Nihon* 実業之日本, May 1914.

<sup>315</sup> Itō remained an important transport exporter until the Showa era.

trams indeed eventually impeded the expansion of the rickshaw market, but they still needed time to spread, and there was still a growing demand for the plain-black models of rickshaws.<sup>316</sup> The consuls' advice revealed a keen observation of the development of the rickshaw market, which indicates proactive governmental attention to support the rickshaw export business as a symbol of growing leadership in Asia. As a result, despite the diffusion of electric trams across Asia, exports still managed to climb and even reached their historically highest point in 1910.<sup>317</sup>

The rickshaw industry also became a part of Japan's imperial plan in forging a new metropolis in colonial Taiwan. Rickshaws had been running on Taiwan's streets by the time Japan occupied Taiwan but from diverse manufacturers and primarily from local workshops. From 1906 to 1907, colonial Taiwan intentionally imported hundreds of rickshaws from Japan (although it is unclear who initiated the import.) As a result, Taipei streets witnessed a significant transformation of rickshaws. Not only did the new rickshaws improve technologically compared to their Japanese counterparts, but they were also in a more uniform style, which improved the image of this new colonial urban center. *Taiwan Nichichi Shinpo* reported seven rickshaw shops in Taipei in 1907. The largest business featured Akiha's rickshaw model.<sup>318</sup> In 1915, similar to

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<sup>316</sup> “Kōshikan Oyobu Ryōjikan Hōkoku: Jinrikisha Seizōsha No Chūyi Subeki Ken 公使館及領事館報告：人力車製造者ノ注意スヘキ件,” *Kanpō 官報*, March 10, 1893; “Shikan Oyobu Ryōjikan Hōkoku: Eiryō Kaikyō Shokuminchi Jinrikisha Jyuyō No Jyōkyō 使館及領事館報告：英領海峽植民地人力車需要ノ狀況,” *Kanpō 官報*, November 26, 1895; “Kōshikan Oyobu Ryōjikan Hōkoku: Shamurokoku Jinrikisha Eigyō Kisoku Seitei 公使館及領事館報告,” *Kanpō 官報*, November 26, 1902; “Kōshikan Oyobu Ryōjikan Hōkoku: Singapore Honpō Sei Jinrikisha Jyuyō Jyōkyō 公使館及領事館報告：新嘉坡本邦製人力車需要狀況,” *Kanpō 官報*, November 6, 1905.

<sup>317</sup> Requote from Rimmer, *Structure, Conduct and Performance of the Rickshaw Industry in East and South East Asian Cities, 1869-1939*. Original statistics from *Dainihon kaikoku bōeki nenhyō*.

<sup>318</sup> “Taipei no jinrikisha 台北之人力車,” *Taiwan nichinichi shinpō 台灣日日新報*, no. 2032, February 11, 1905, 7; “Renliche shangkuang 人力車商況,” *Hanwan Taiwan riri xinbo 漢文台灣日日新報*, no. 2678, April 10, 1907, 3.

what happened to the Chinese market, Taiwan stopped importing assembled rickshaws. Instead, they imported manufactured parts of rickshaws and assembled them locally. However, in this case, Taiwan functioned more than as the ultimate export market of Japanese products. It also served as processing and assembling factory for the rickshaw industry. The final products were eventually sold to the Southeast Asian market, which continued until 1925.<sup>319</sup> The trajectory of the rickshaw industry, in this case, somewhat foreshadowed Japan's imperial project: Taiwan was the outpost in the Pacific Ocean to project Japan's influence over Southeast Asia, primarily by small-time entrepreneurs.

## **Making Asian Metropolises**

### *Reshaping Spaces*

Rickshaws also helped generate a new sense of space and time. In a sense, rickshaws thrived thanks to the more “advanced,” non-organically driven technology, at least in the first decade after their invention. The introduction of the first steam railways connecting Shinagawa and Yokohama in 1872 did not discourage human-powered transport. On the contrary, steam railways introduced an unprecedented perception of space and time that ultimately facilitated the popularity of rickshaws. When people got used to the steam railways rushing distances over a

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<sup>319</sup> “Yokohama-Marū Nyūkō Tsumini 横浜丸入港積荷,” *Taiwan Nichinich Shinpō* 台灣日日新報, February 11, 1905; “Yamashiro-Marū Tsumini 山城丸積荷,” *Taiwan Nichinich Shinpō* 台灣日日新報, January 9, 1903; “Qichuan Zhi Jihe 汽船之積荷,” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, December 27, 1904. Tsou WanLing 鄒婉玲, “Development of Pulled Rickshaw During the Japanese Colonial Period in Taipei 日治時期臺北地區人力車之發展” (Master Thesis, National Chung Hsing University, 2013)..

hundred miles and carrying people across the border of Tokyo within only half a day, they became less easily satisfied with slowly moving across two or three blocks in the city.<sup>320</sup> The ubiquitous, inexpensive, and convenient rickshaws helped bridge the perceptual gap of time and space within the cityscapes.

Such a new perception of space and time translated into a form of economic choice. How much were the urbanites willing to pay for their time? The one-way train trip from Shinbashi to Yokohama in 1874 was 1 yen for first-class, 60 sen for the middle class, and 30 sen for the third class. Considering the price for 1.5 kilograms of rice cost only four sen and the daily wage for ordinary artisans was 35 sen, it could be quite an expense for ordinary people. However, it offered the urbanites a choice to trade off money with time because the steam railways shortened what used to be an eight-hour trip on foot to thirty minutes, at the low price of 3 sen per *ri*. Comparatively, the rate for rickshaws within the urban space was 12 sen per *ri*, even higher than the fee for a third-class steam railway ticket. However, rickshaws' popularity proved an increased number of urban citizens who were willing to pay for convenience and saving time. In this context, rickshaws embodied the virtues of speed, efficiency, and rationality. One newspaper concluded, "Steam cars are economical for their speed, horse-drawn carriages are economical for their lightness, and rickshaws are economical for their price."<sup>321</sup>

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<sup>320</sup> Noguchi Katsuichi 野口勝一, "Jinrikisha No Hatsumei 人力車の発明."

<sup>321</sup> "Tosei san-pukutsui 当世三幅對," 1875-11-4, *Yomiuri Shinbun*, in Meiji Hennenshi Hensankai 明治編年史編纂會, *Shinbun shūsei Meiji hennenshi* vol. 2, 426.

The efficiency and convenience of rickshaws proved their worth in the Imperial Tour of the Meiji Emperor in 1876, which contributed to the spread of rickshaws throughout Japan and stimulated the upgrade of urban infrastructures in Japanese cities. During the Meiji emperor's tour, local officials made an emergency purchase of a batch of rickshaws. They hired 200 rickshaw pullers at a daily wage of 33 sen (a good working-class wage) to transport officials and spectators.<sup>322</sup> The officials also made an initial order of 100 rickshaws to a manufacturer in Ginza but found that they were out of stock.<sup>323</sup> The same thing happened to officials in the Hokuriku region when they prepared for the imperial tour in 1878 and Hokkaido in 1881.<sup>324</sup> The spread of rickshaws during the imperial tours also stimulated the renovation of city streets, the expansion of regional road networks connecting urban centers and the countryside. Imitating the Tokyo methods, local governments started to collect rickshaw taxes to subsidize the construction and public infrastructure upgrades, replacing muddy roads with setts.<sup>325</sup>

### ***Gendered Rickshaws***

The mixing of genders amongst passengers on rickshaws was a universally disturbing phenomenon. It could insinuate enlightenment, but it was also scandalous. Since the invention of

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<sup>322</sup> According to Howell, the average daily wage of a carpenter in 1874 was 40 sen, so these pullers were making an average working-class salary by this standard. David L Howell, *Geographies of Identity in Nineteenth-Century Japan* (Berkeley, Calif.: University of California Press, 2005), 159.

<sup>323</sup> “Gojyunkō to jinrikisha 御巡幸と人力車,” 1876-5-25, *Yūbin hōchi*, in Meiji Hennenshi Hensankai 明治編年史編纂會, *Shinbun shūsei Meiji hennenshi* vol. 2, 538.

<sup>324</sup> The Hokuriku region is current-day Niigata, Toyama, Ishikawa, and Fukui prefectures. Saitō Toshihiko, *Jinrikisha no kenkyū*, 109–110.

<sup>325</sup> “Nagasaki No Shigaichi Tōro No Ishidatami Ga Kanryō Jinrikisha Zei de Hiyō Mekanau 長崎の市街地道路の石畳が完了、人力車税で費用賄う,” *Yomiuri Shinbun*, September 1, 1876.

the rickshaws, especially the two-seat rickshaws in 1874, the image of a man and a woman sitting beside one another became a disturbing urban presence. So were women alone.

Newspapers reported that geisha used rickshaws to escape from their indenture contracts, in the process publicly displaying themselves on the streets. Brothel owners spotted escaped geisha with their lovers sitting next to them on the rickshaws. One couple quarreled with each other on the rickshaw, causing the puller to drop the shafts, and all three of them fell into a river.<sup>326</sup> There were even cases where couples reportedly had sex on rickshaws during night rides. An editorial lamented that eight or nine years earlier, the city had abolished mixed bathing as an effort of the Meiji Restoration. However, the city was still suffering from uncivilized behaviors. Therefore, it called for the consideration of restricting two-seat rickshaws.<sup>327</sup> Using the slogan of “civilization and enlightenment” as a subterfuge, the author reacted out of similar anxiety towards the disoriented gender order in public display.

Along with the exportation of rickshaws came similar controversies in other locations. In some places, anxiety about rickshaws and gender order disseminated along with the two-seater models that dominated the export market (although not the Japanese market, which still preferred one-seaters). Men and women (especially courtesans) sitting knee to knee in public was as

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<sup>326</sup> “Geisha Ga Jinrikisha Wo Norinige? Yokohama 芸者が人力車を乗り逃げ? 横浜,” *Yomiuri Shinbun*, September 9, 1875; “Shōgi Ga Daidō Ni Suwatte Tannka/Yokohama 娼妓が大道に座ってたんか / 横浜,” *Yomiuri Shinbun*, March 9, 1876; “Yūjyo Ni Nigerareta Yūkaku No Shujin Otoko to Ainori Suru Kuruma Wo Mitsuke Futari Wo Keisatsu He/Tokyo 遊女に逃げられた遊郭の主人 男と相乗りする車を見つけ2人を警察へ / 東京,” *Yomiuri Shinbun*, April 21, 1881; “Kuruma No Ue de Kenka No Danjo Shafu Ga Kajibō Hanashi, San Nin Ha Kuruma Goto Kawa He Tenraku Tasukaru/Yokohama 車の上でけんかの男女、車夫が梶棒放し、3人は車ごと川へ転落、助かる / 横浜,” *Yomiuri Shinbun*, July 14, 1882.

<sup>327</sup> “Ainori jinrikisha haiseki ron 相乗人力車排斥論,” October 23, 1877. *Osaka Nippō*, in Meiji Hennenshi Hensankai 明治編年史編纂會, *Shinbun shūsei Meiji hennenshi*, vol. 3, 321.

disturbing in China as it had been in Japan.<sup>328</sup> In Southeast Asia, people considered the two-seated model quite a novel and urban transportation method and were less concerned about gender norms.<sup>329</sup> At least to the Japanese observers, the people in Singapore enjoyed traveling by rickshaws because it was convenient to pick up a friend on the way. They reported that female passengers, especially, were fans of these models, creating a new way of dating.<sup>330</sup>

Just as the rickshaw's problems were exported along with the new technology, so were solutions. The local rickshaw companies in Southeast Asia also followed the Japanese example to provide better service to passengers. They gave passengers charcoal heaters during winter or provided newspapers for them to read during their rides. Rickshaw companies that served customers from the higher echelon of society also supplied pullers with oilskin coats and prohibited them from eating garlic to avoid an unpleasant body odor. However, the results in the Southeast Asian market were different from what they had been in Japan. In Southeast Asia, these innovations resulted in higher fares than the low fares that still prevailed in the Japanese domestic market. Therefore, the rickshaw business in Southeast Asia attracted foreigners and local elites while excluding local users.<sup>331</sup> Although the technology provoked the same concerns

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<sup>328</sup> "Gui Jian Daozhi Shuo 貴賤倒置説," *Shenbao*, October 7, 1890.. In addition, two-seated rickshaws did not fit in the narrow streets while at the same time causing injuries to the pullers because it was heavier to carry than one-seated models. Some newspaper articles also mentioned injuries of pullers.

<sup>329</sup> Rimmer, "Structure, Conduct and Performance of the Rickshaw Industry in East and South East Asian Cities, 1869–1939," 599.

<sup>330</sup> "Makie No Futari Nori Jinrikisha Noriai Yō Ni Singapore Nado He Yushutsu 蒔絵の2人乗り人力車 乗り合い用にシンガポールなどへ輸出," *Yomiuri Shinbun*, November 16, 1904.

<sup>331</sup> Rimmer, *Structure, Conduct and Performance of the Rickshaw Industry in East and South East Asian Cities, 1869–1939*, 609.

and attempted solutions as in Japan, the rickshaw ultimately had a completely different social impact.

The debates stirred by rickshaws did not solely travel unilaterally from Japan to overseas markets but went both ways. In 1886, the Tokyo government issued an edict that required pullers to wear coats (dark blue in winter and white in summer) and hats (especially wicker umbrella hats in case of rain). It also required the company's name and license number displayed on all the professional outfits and urged the pullers to use lanterns at night to reduce traffic accidents.<sup>332</sup> These domestic regulations may have found some inspiration abroad. In 1885, the Shanghai municipal office had required pullers to put their license plate numbers on the rickshaws and the back of their vests, along with the puller's name and the name of the rickshaws owners. This allowed passengers sitting on the back to take this information down, which would come in handy if accidents happened or when the police made arrests. These regulations could be a model for solving similar problems in Japan: traffic incidents and dishonest pullers tricking passengers by taking detours.<sup>333</sup> It is hard to know whether the Meiji officials got inspiration from the Chinese rickshaw regulation, which preceded the 1886 Japanese edict. Regulating the rickshaw pullers' appearance also put them under governmental surveillance and made them easily recognizable in case of trouble.

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<sup>332</sup> No.7 Edict of the Ministry of Domestic Affairs, cited in Saitō Toshihiko, *Jinrikisha no kenkyū*, 318. Rimmer, 603; “Jinrikisha torishimari kisoku 人力車取締規則,” December 9, 1881, *Yubin Hochi*, in Meiji Hennenshi Hensankai 明治編年史編纂會, *Shinbun shūsei Meiji hennenshi*, vol. 4, 498.

<sup>333</sup> “Jinrikisha kaimeishite Shina deha Tōyōsha 人力車改名して支那では東洋車,” November 27, 1885, *Tokyo Nichinichi Shinbun*, in Meiji Hennenshi Hensankai 明治編年史編纂會, *Shinbun shūsei Meiji hennenshi*, vol. 6, 193.



It was not until 1899 that the Japanese government finally decided to reaward the “inventors of the rickshaw” for their “remarkable contribution in introducing the utility of this novel transportation, which enjoys the prosperity today and contributes to the exportation to the whole world.” The award was 200 yen for each person, along with a monument funded by private donations. However, by this time, only Izumi Yosuke, who was in his seventies, was alive to receive the awards. Deprived of the monopoly, he had been living in severe poverty. His two other business partners, Takayama and Suzuki, had already passed away.<sup>334</sup>

This award, long overdue, reveals more than the fate of the inventors. Many people had tried to claim the title of the “inventor of the rickshaw.” Among them was an American missionary in Tokyo named Jonathan Goble, who claimed to have designed the first rickshaw for the convenience of his sick wife as early as 1868. He had even tried to petition for a share of tax revenue from rickshaws to finance his school for the blind.<sup>335</sup> However, the official award ignored this possible version of the story of the rickshaw’s invention, which would have credited a foreigner with the development of this new technology. Instead, the government decided to celebrate Japan’s indigenous economic triumph by awarding the three Japanese entrepreneurs,

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<sup>334</sup> “Jinrikisha no hatsumei sha reiraku wo kiwamu – onkyū kafu wo gikai ni kengi sen to su 人力車の発明者零落を極む一恩給下付を議会に建議せんとす,” January 6, 1896, *Hōchi Shinbun*; “Jinrikisha sōseisha jyushō 人力車創製者受賞,” April 1, 1899, *Tokyo Nichinichi Shinbun*, “Jinrikisha hatsumei jin kinenhi 人力車発明人記念碑,” July 29, 1899, *Nihon Shinbun*, in Meiji Hennenshi Hensankai 明治編年史編纂會, *Shinbun shūsei Meiji hennenshi*, vol. 11, 47.

<sup>335</sup> “Jinrikisha Hatsumei? No Beijin Senkyōshi Shazei No Ichibu Wo Gunmōin He Kifu Shitai to Tokyofu Ni Shutsugan 人力車発明? の米人宣教師、車税の一部を訓盲院へ寄付したいと東京府に出願,” *Yomiuri Shinbun*, November 7, 1878..

though only three decades later. This belated award was appropriate to the rickshaw's complicated history: it was never fully embraced in the period that it ruled Japanese streets but was celebrated later as a symbol of the rising Japanese economy.

## CHAPTER 4

### HUMAN-POWERED RAILWAYS IN JAPAN:

### THE MAKING OF MODERN JAPANESE “REGIONS” 1890S-1920S

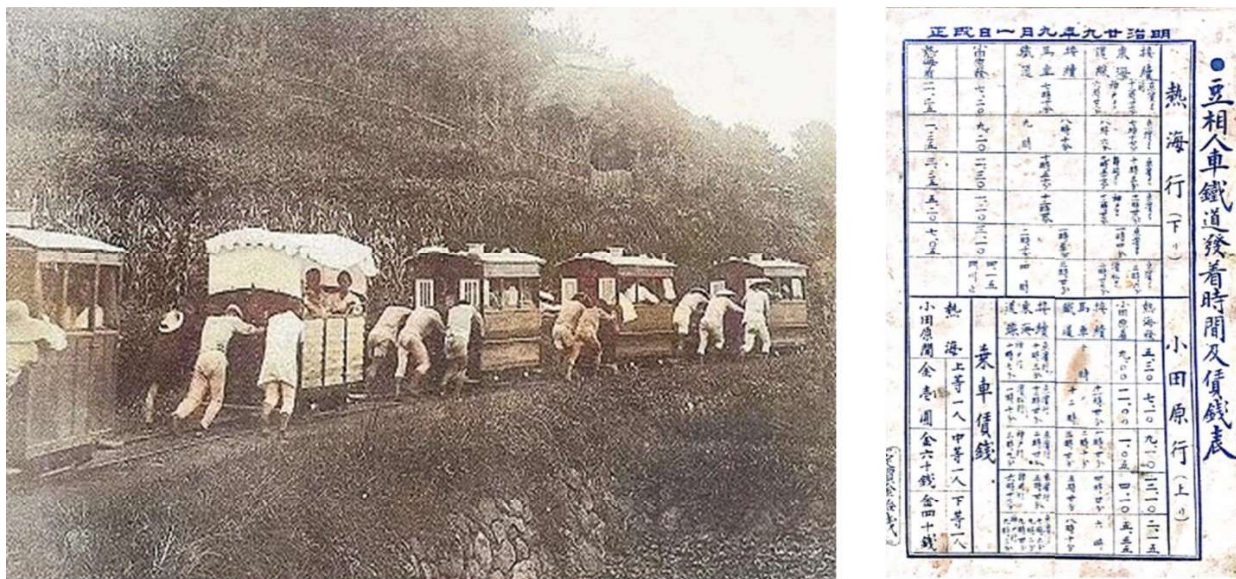
#### Introduction

In 1882, Amamiya Keijirō (雨宮敬次郎 1846-1911), an entrepreneur and investor, followed his doctor’s advice and embarked on a trip to the renowned hot spring town of Atami. He had been suffering from tuberculosis, and Atami was a popular healing spot for patients like him. However, before he could reach Atami, he had to take a rickshaw from Odawara. As the rickshaw climbed and bumped up and down along the coastal cliff, Amamiya kept coughing up blood. “I am going to build a railway in this place,” he thought to himself, “so that other patients can come to Atami more easily.”<sup>336</sup>

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<sup>336</sup> Amamiya Keijirō 雨宮敬次郎, *Kako rokujūnen jiseki 過去六十年事蹟* (Tokyo 東京: Sakurauchi Yukio 桜内幸雄, 1907), 312–13.

Image 11 Zusō Jinsha Testudo and its operation schedule



It took a long time before he could gather enough capital to finish construction. Eventually, on July 10, 1895, Japan's first human-powered railway began operating between Atami and Odawara. Officially known as “Zusō Jinsha Tetsudō 豆相人車鐵道” (hereafter referred to as Zusō), it differed little in its operations from other railways in Japan. It operated on regular steel tracks, and the well-designed carriage could hold up to 8 passengers at one time. In the back, one or two laborers would push it forward. It covered 25.3 kilometers with eight stations along the Eastern Sea Road (Tokaidō 東海道) coastline and operated on a train schedule. One journey took approximately four hours. Like steam railways, it also had three classes, 1 yen, 60 sen, and 40 sen [Image 11 Zusō Jinsha Testudo and its operation schedule].

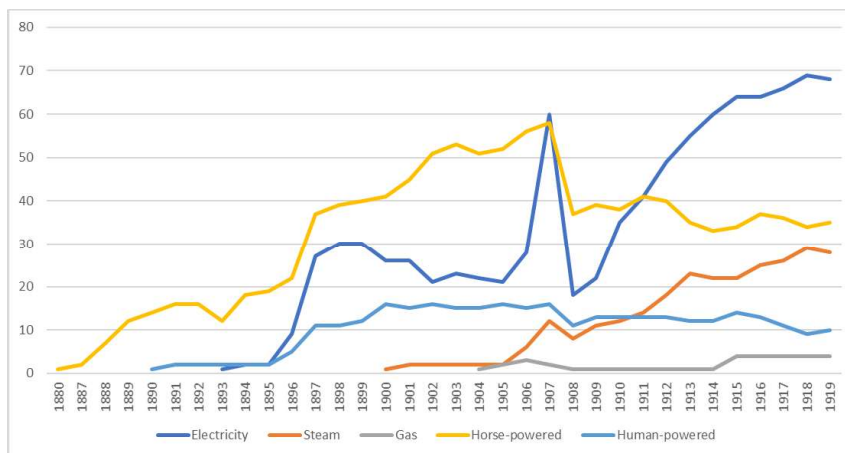
The success of Zusō Jinsha inspired at least thirty other human-powered railway companies in the Meiji and Taisho periods. Most were established between the 1890s and the

1910s. The average operation lifespan was 19 years, with a median of 17 years. The last human-powered railway, the Shimada Kido in Shizuoka Prefecture, persisted until 1959. Most of the human-powered railways served industrial purposes, transporting stone, lumber, or sand. Passenger-oriented human-powered railways usually targeted specific entertainment purposes, serving the needs of pilgrims or tourists. In fact, statistics show that between 1880-1919, many railway companies still deployed organic energy – both horse and human power. The total number of human-powered railway companies exceeded those powered by steam as late as 1910 and far exceeded gas-powered railway companies during that era as well. Yet, those companies' stories have attracted little scholarly attention [Table 4 and Figure 1].

This chapter scrutinizes this underexamined story of human-powered railways in Japanese history and its nonetheless important role in shaping social geographies in specific regions. They were indigenous modes of transportation developed out of the interstices concurrent with the development of modern Japan. The combination of human power and railways shaped the modern experiences of Japan just as did other capital-intensive and more “advanced” transportation industries. Moreover, the human-powered railways revealed the construction and redefinition of specific regions by small-time local initiatives. The human-powered railways sprang out of the geographical gaps between major steamways and trunk roads, in places left out of the grand designs of state-initiatives and capital-intensive projects.

Table 4 Human-powered Railway Companies in Japan

Year Established	Year Abolished/Energy Conversion	Company Name	Location	Passenger or Cargo	Notes
1891	1900	藤枝焼津間軌道	Shizuoka	Both	
1895	1907	豆相人車鉄道	Shizuoka	Mostly passengers	Tourists
1895	1912	岩間人車軌道	Ibaraki	Cargo	Stone
1896	1920	稲田軌道	Ibaraki	Cargo	Stone
1897	1928	宇都宮石材軌道	Ibaraki	Mostly Cargo	Stone
1897	1959	島田軌道	Shizuoka	Cargo	Lumber
1898	1909	新川軌道	Fukuyama	Mostly Cargo	Lime
1899	1913	帝釈人車軌道	Tokyo	passenger	Tourists
1899	1916	岩舟人車鉄道	Ibaraki	Cargo	Stone
1899	1906	野州人車鉄道	Ibaraki	Mostly Cargo	Stone
1899	1917	乙女人車軌道	Ibaraki	Cargo	
1900	1941	鍋山人車鉄道	Ibaraki	Mostly Cargo	Lime
1901	1926	野田人車鉄道	Chiba	Cargo	Soysause
1902	1918	喜連川人車鉄道	Tochiki	Mostly passengers	
1904	?	羽黒軌道	Ibaraki	Cargo	Stone
1907	1939	富士軌道（馬力併用）	Shizuoka	Both	Tourists, Lumber
1908	1919	東葛人車鉄道	Chiba	Mostly Cargo	
1908	1932	那須人車軌道	Ibaraki	Mostly passengers	
1910	1926	庁南茂原間人車軌道	Chiba	Both	
1911	1928	藪塚石材軌道	Gunma	Both	Tourists, Stone
1913	1922	千葉県営大原・大多喜間人車軌道	Chiba	Mostly passengers	
1913	1929	住吉村営人車軌道	Miyazaki	Mostly passengers	Tourists
1914	1915	沖繩人車軌道	Okinawa	Both	
1914	1932	里見軌道	Gunma	unknown	
1915	1930	笠間人車軌道	Ibaraki	passenger	Tourists
1919	1926	赤湯人車軌道	Yamagata	passenger	Tourists
1921	1954	樺穂興業	Ibaraki	Cargo	Stone
1922	1928	松山人車軌道	Miyagi	Mostly passengers	
1925	1949	日向軌道	Miyazaki	Mostly Cargo	Human power + Horse
1925	1949	銀鏡軌道	Miyazaki	Mostly Cargo	Human power + Horse

Figure 1 Railway Companies, by Driving Force <sup>337</sup>

The adoption of shareholding companies revealed a common conundrum concurrent to Japan's modern industrialization as a latecomer. Unlike the rickshaw manufacturing industry, which predominantly operated as workshops, most human-powered railways were shareholding companies. This was a new managerial form of enterprise in the Meiji period.<sup>338</sup> As a latecomer in the global capitalist system, Japan needed considerable funding over a short period to import necessary technologies, facilities, and machinery as well as to develop industrial infrastructure to support modern industries. Shareholding companies were the most efficient way to mobilize and absorb enough capital from diverse sources throughout society. Most large shareholding companies relied on established capitalists, such as members of the peerage (*Kazoku*), who were the bureaucrat-merchants.

<sup>337</sup> Tetsudōshō 鉄道省, *Nihon tetsudō shi: ge-kan 日本鉄道史: 下巻* (Tokyo 東京: Tetsudōshō 鉄道省, 1921), 683–84.

<sup>338</sup> The Akiha workshop became a shareholding company very late, in the 1920s.

However, many smaller enterprises depended upon coalitions based on consanguinity and geographical relationships.<sup>339</sup> Most Japanese human-powered railway companies were this latter type because transport immediately associated with regional interests on circulation, flows, and connections. This, in turn, made the development of human-power railways integral to the place-making/region-making process of smaller localities. The human-powered railway companies in Japan showcased the underlying spatial character of specific regions in three ways. First, adopting human power as the driving force for railways resulted from environmental constraints, such as topographical conditions or limited local resources. Secondly, the emergence of regional transport demand was an immediate response to an expanding national transport system and the intensified national market as a result of Japan's incorporation into the global economy. Finally, examining the relationships between the shareholders themselves revealed the efforts by small-time stakeholders to forge a new set of geographical connections. Doreen Massey once points out that the response to geographical unevenness of a region was "a product of the interaction between, on the one hand, the existing characteristics of spatial differentiation, and on the other hand, the requirements at the time of the particular process of production."<sup>340</sup> The development of the human-powered railway concretizes such a relationship. The human-powered railway was both the result of and the response to the geographical constraints of the region. It was a

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<sup>339</sup> Miyamoto Matao 宮本又郎, *Kigyōkatachi no chōsen 企業家たちの挑戦*, Nihon no kindai 日本の近代 (Tokyo 東京: Chūkō Bunko 中公文庫, 2013), 250–51.

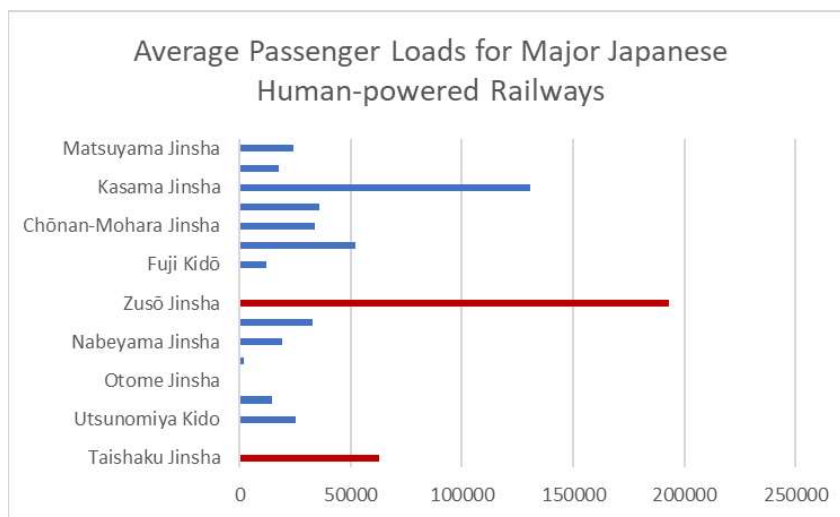
<sup>340</sup> Doreen B Massey, *Space, Place and Gender* (Hoboken: Wiley, 2013), 62, <http://liverpool.ebib.com/patron/FullRecord.aspx?p=1584059&entityid=urn:mace:eduserv.org.uk:athens:provider:liverpool.ac.uk>.



propellent that led to the construction of new regional geography, both spatial and socio-economic.

This chapter examines two human-powered railways. Zusō Jinsha was an exceptional case. It was the first human-powered railway in Japan and transported more passengers than any other (See Figure 2). It was also the only human-powered railway company ever to have a *Zaibatsu*, or conglomerate, as a major shareholder, which signified the Japanese capitalistic development in its formation stage. A second case concerns the Taishaku Jinsha Tetsudō, located in present-day Katsushika-Ku, Tokyo. It was the second passenger-oriented human-powered railway, the only company that had a double-track system. It was a typical example of how regional connection was forged across the borders of administrative divisions. Together, this chapter shows the role of human-powered railways in the region-making process in modern Japan. The planning, construction, and operation of human-power railroads not only helped develop regional economies but also made regional culture distinct. In this way, “traditional” aspects of rural village life and folk culture also interactively shaped the modern development of the locality as it was incorporated into an expanding national and global market. This process demonstrates that modernist development can involve components that might be viewed as incommensurate with modern capitalism.

Figure 2 Average Passenger Loads for Major Japanese Human-powered Railways



### The Zusō Jinsha Tetsudō: A Region for the Powerful

#### *Amamiya Keijirō and the Kōshū Zaibatsu*

In 1846, Amamiya Keijirō was born as the second son of a farming family in the village Ushioku, located in East Yamanashi County in Kōshū 甲州 (also known as Kainokuni 甲斐国, present-day Yamanashi Prefecture). Kōshū thrived as a regional transportation and trading hub during the Tokugawa period. Situated between Tōkaidō (東海道) and Nakasendō (中山道), the Kōshū Highway provided a shortcut from Edo's Nihonbashi to the heart of Tōsandō (the Eastern Mountain circuit). This land transport hub converged with the waterways of the Fuji River, making the castle town of Kōfu a regional trading center and an important node on the supply chain to Edo. At the same time, the countryside of Kōshū was also famous for sericulture, tobacco, and various other agricultural products. It was common for peasants to become

peddlers, who were then connected to the wholesaler merchants and transport networks in the castle town. Growing up in one of these silkworm-rearing families, Amamiya started trading silk and silkworm products when he was 13.<sup>341</sup>

The opening of Yokohama in 1859 brought new opportunities to the people of Kōshū. Many local merchants speculated on new trading opportunities and brought Kōshū-produced silkworms to the frontier of global trading in Yokohama. One of the powerful local merchants, Wakao Ippei (若尾 逸平 1821-1913), survived the fluctuating market and would develop a close relationship with Amamiya in later years. The 18-year-old Amamiya joined his countrymen and started an array of trading and exchanging businesses – foreign currency, silk, pottery, sea products, and even petroleum. He tried his luck and sometimes failed. A trip to Europe and the United States in 1876-1877 motivated him to explore modern enterprises with imported technologies and facilities. In 1879, he established a steam-powered flour mill in Fukagawa, Tokyo. Within ten years, this factory evolved into the Nippon Flour Mills Co., Ltd. (Nippon Seibun Kabushiki Kaisha), Japan's leading flour mill.

The success of the mill secured him a stable cash flow and enabled him to sprawl his enterprises across multiple terrains. By the late Meiji period, Amamiya had invested and founded over 20 railway companies. The light railway network associated with his name scrawled across the nation in over a hundred localities, connecting Tokyo to his hometown in various routes and other places, including Hokkaido. Oguma Shigenobu gave him a nickname that came to brand

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<sup>341</sup> Amamiya Keijirō, *Kago rokujūnen ki*, 4-6.

Amamiya's legacy: "Tenka no Amakei," literally, the Amamiya Under the Heaven. This nickname indicated how Amamiya's railway establishments – and his ambition and aspirations to build the national-scale network of light railways - encompassed everywhere across Japan.

Image 12 Amamiya Keijiro (1846-1911)<sup>342</sup>



Amamiya was not the only one to come from the Kōshū domain, kicked off his career in Yokohama, and extend his business sphere beyond his birthplace. Amamiya, along with Wako Ippei, Netsu Kaichirō (根津 嘉一郎 1860-1940), and Kono Kinroku (小野金六 1852-1923) were leading figures in a group of entrepreneurs who came to be known as the "Kōshū Zaibatsu 甲州財閥," or the Kōshū conglomerate.

Meiji economic history often featured great conglomerates such as Mitsui, Mitsubishi, Sumimoto, Kawazaki, and Yasuda. These conglomerates were usually organized around one influential leading figure or patriarch. For example, Mitsui and Mitsubishi were particularly

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<sup>342</sup> Image source: 信太郎 Shintarō Yabe 矢部, *Kindai meishi no omokage. 1 近代名士之面影. 第1集* (Tokyo 東京: Chikuhakusha 竹帛社, 1914). NDL request Nos. 419-34, Black and White, 8.1×11.1 cm

organized based on a kinship structure. However, the Kōshū Zaibatsu united based on a shared geographical identity. This identity was not purely symbolic; it was also practical.<sup>343</sup> Unlike Mitsui and Mitsubishi, both of which coordinated multangular entrepreneurial networks under an overall plan, Kōshū Zaibatsu's coalition was looser. Core members of the Zaibatsu cooperated only when their interests overlapped, especially in cases where they needed to unite and compete with other entrepreneurs or investors. In other cases, they would not hesitate to compete against each other.<sup>344</sup>

As in the case of the Takanawa oxcarts, the trajectory of the Kōshū Zaibatsu provides an example of how peripheral agents penetrated and even redefined the center. By 1895, Wakibi and his groups of investors controlled most of the shares of the Tokyo Horse-drawn Railway Company. The Zaibatsu also mobilized wealthy merchants and peasants from Kōshū and took control over half of the shares of the Tokyo Electric Light Company (*Tokyo Dentō* 東京電燈) in 1896.<sup>345</sup> Amamiya and Wakabi were also leading figures in the electrification of street tramways in Tokyo in 1899. By the end of the Meiji period, the entrepreneurs/investors from Kōshū had extended their sphere across the pan-Tokyo metropolitan area.

The members of the Kōshū Zaibatsu cultivated and mobilized local interests and resources under the shareholding structure. The Kōbu Railway was the first large railway project

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<sup>343</sup> It was similar to other geographically tied business coalitions, such as the Kōshū Zaibatsu (江州財閥) based on the Afumi domain (which had an immense effect on the economy around Osaka), the Saga Zaibatsu based on the Nabeshima-house of Saga domain, and the Chūkyō Zaibatsu based on Nagoya.

<sup>344</sup> Saitō Yasuhiko 齋藤康彦, *Chihō zaibatsu no kindai: Kōshū zaibatsu no kōbō 地方財閥の近代: 甲州財閥の興亡* (Tokyo 東京: Iwata Shoin 岩田書院, 2009).

<sup>345</sup> The first semester shareholding record in 1901 indicated that Kōsū shareholders held 40.7% of the total amount.

initiated by these Kōshū businessmen in 1888, which provided a usual practice. The Kōbu Railway connected Shinjuku to Tachikawa and extended to Hachioji. This followed the route of the premodern Kōshū Highway. The strategic meaning of the railway was self-evident to the development of Kōshū. The founding members of the company were prominent figures from industrial, its politicians, and intellectuals.<sup>346</sup> Amamiya Keijirō joined the company as managing director immediately following the company's founding. He and his partners from Kōshū started to include local landlords and wealthy peasants/merchants as shareholders.

The nature of the shareholding structure was the combination – and balance – of the Amamiya Zaibatsu group, local or pertinent businessmen, and other investors. By 1892, the Kōbu's shareholding structure had separated into three layers. Amamiya and his associates controlled 48.6% of the shares. Thirty-four shareholders – constituting 23% of the total shareholders – came from local regions along the routes. 76.5% of these local shareholders each held less than 50 shares, but together they still controlled 8.3% of the company's shares outstanding. The rest came from other great investor classes, such as Tokyo-based peerage, bureaucrats, and industrialists.<sup>347</sup> This structure became the basic high-level management structure for other companies that Amamiya developed later, including larger companies like the Japan Tramway Company (Dainihon Kidō) and small enterprises like the Zusō Human-powered Railway.

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<sup>346</sup> The initial founding members included the president of Nihon Railway, Narahara Shigeru, the president of the Tokyo Horse-drawn Railway, Tanimoto Michiyuki, the former governor of Kanagawa Prefecture, Iseki Moritome, and the chief editor of *Asano* Newspaper, Suehiro Shigeyasu.

<sup>347</sup> Saito Yasuhiko, *Chihō zaibatsu no kindai – Kōshū Zaibatsu no kōbō* 地方財閥の近代-甲州財閥の興亡.

*The Cultural Geography of Atami*

熱官朝去火輪艦 Powerful Bureaucrats left in the morning by steamships,  
豪客晚來人力車 Prominent merchants arrived in the evening by rickshaws.

– Hiratsuka Shinpo 平塚真寶<sup>348</sup>

Located along the Tanna Fault at the Cape of Izu, Atami thrived thanks to geysers. The sporadically erupting hot spring and Atami's coastal position along the Tōkaidō forged a prosperous hot-spring town. In the Edo period, daimyos on the alternate Attendance route would stop here even though it was not an official post-town (*shukuba-machi* 宿場町). The need to serve privileged guests distinguished Atami as a hot-spring town. It was among the handful of hot-spring towns that had an inside-spa (内湯), which provided private facilities for noble guests. To access the major hot spring sources, innkeepers had to obtain a special permit, called a *yuto* (湯戸). Those with the permit usually were associates of the great merchant houses in Edo. These innkeepers formed a privileged local group that monopolized access to natural resources. As a result, these innkeepers formed the most resourceful group in the region. Their interests

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<sup>348</sup> Yamada Kaneji 山田兼次, *Atami fūdoki zoku 熱海風土記 続* (Itō 伊東: Izushinbunsha 伊豆新聞社, 1979), 22.

were also closely associated with the development of local transport, which determined the flows of incoming customers.<sup>349</sup>

Atami's connection with the center was reinforced in the Meiji era. Its hot spring still attracted the rich and the powerful as a getaway spot to relax and heal. For example, in Atami's famous hotels, Meiji oligarchs such as Ōkuma Shigenobu, Ito Hirobumi, Inoue Kaoru, and Kuroda Kiyotaka to discuss strategies to oppose the people's rights movement, to explore Hokkaido, and to establish the parliament.<sup>350</sup> These prominent politicians gathered there so often that it seemed that "the government had moved to Atami."<sup>351</sup> In 1882, the cholera pandemic drove more who could afford to escape the dense metropolises – Tokyo and Yokohama – and come to Atami. In 1883, the head of Mitsubishi, Iwasaki Yatarō, donated a large plot of land to the imperial household and built a villa for the Crown Prince (later Emperor Taishō) as a healing resort. In 1874, a Western photographer captured a typical Atami scene, "In various parts along the coast, the hot sulphureous water is continually running in streams through wooden conduits, and falling, in the manner depicted, on to the stones of the beach. One sees groups of naked men and women, promiscuously huddled together under the spouts on the open beach close to the sea."<sup>352</sup>

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<sup>349</sup> Atami-shi Kyōiku Iinkai 熱海市教育委員会 and Atami Onsen-shi Sakusei Jikkō Iinkai 熱海温泉誌作成実行委員会, *Shisei shikō 80-shūnen kinen, Atami Onsen shi 市制施行八〇周年記念, 熱海温泉誌* (Atami-shi, Tōkyō: Kabushiki Kaisha Shuppan Bunkasha, 2017), 304.

<sup>350</sup> *Atami onsen-shi 熱海温泉誌*, 373.

<sup>351</sup> 齋藤和堂 Saitō Wadō, *Atami to gojyū meika 熱海と五十名家* (Tokyo 東京: Seiwadō 精和堂, 1920); Atami-shi Kyōiku Iinkai 熱海市教育委員会 and Atami Onsen-shi Sakusei Jikkō Iinkai 熱海温泉誌作成実行委員会, *Atami Onsen shi 熱海温泉誌*.

<sup>352</sup> Unknown photographer, On the Coast near Atami, The Far East, 3 December, 1874. Reprinted in *Atami onsen-shi 熱海温泉誌*, 127.



However, for a popular resort like Atami, transportation infrastructure was underdeveloped in the early Meiji period. Until 1880, palanquins through the mountain roads were the only available transportation method over land. In 1880, Matsukata Masayoshi and Sanjō Sanetomi took a military steamship to Atami to avoid the troublesome land route. The local government facilitated the upgrade of the Atami Highway connecting to Odawara in the same year, but it only enabled rickshaws and omnibuses to pass. In 1887, after a lengthy debate on route planning, the Tōkaidō Steam Railway extended its line to Kōzu (国府津) before reaching Atami. However, instead of following the old Tōkaido, the officials and engineers of the Railway Department decided to follow the Nakasendō route instead.<sup>353</sup> By that time, the historical trunk road of Tōkaidō had developed a relatively mature transport network both overland and in waterways. With limited resources at hand, the government decided to invest in the less developed Nakasendō route to stimulate circulation in the hinterland, which seemed more urgent. There were also technological limitations – the engineers at that time could not find a cost-efficient way to penetrate the Jyūkokutōge (十国峠) Mountain pass.<sup>354</sup> As a result, this trunk railway circumvented Odawara and Atami. The famous hot-spring town was left out of the national railway network and now had to be on its own. [Map 5]

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<sup>353</sup> Oikawa Yoshinobu 老川慶喜, *Nihon tetsudōshi. Bakumatsu Meiji hen : jōkisha mokei kara tetsudō kokuyūka made* 日本鉄道史. 蒸気車模型から鉄道国有化まで (Tokyo 東京: Chūō Kōron Shinsha, 2014), 86–95.

<sup>354</sup> Oikawa Yoshinobu, *Nihon tetsudōshi*.

Map 5 The Location of Atami<sup>355</sup>

Being left out of the national railway and lacking convenient and comfortable local transportation infrastructure hampered Atami's business prospects. The construction of the Tōkaidō Steam Railway shortened the travel time from Tokyo to the Izu Peninsula. However, instead of channeling visitors to Atami, the railway instead facilitated the development of other resort locations along the route. Odawara, Shōnan, and Kamakura soon thrived as new destinations in competition with Atami. Even Hakone, which was also away from the railway, started constructing a mountain trail railway in 1887 and a horse-drawn railway in 1888.

<sup>355</sup> Sagano Hikotarō 嵯峨野彦太郎, *Dainihon zenzu : shintetsudō kikō oyobi sekkei senro* 大日本全圖: 新鐵道起工及設計線路 (Tokyo 東京: Kanda hakō 神田發行, 1896).

In contrast, there were only two ways to get to Atami from Tokyo: an eight-and-a-half-hour ride on steamships on the route connecting Tokyo and Shimoda; or a bumpy rickshaw trip from Kouzu to Atami. Both options were time-consuming, unpleasant, and expensive. This was incredibly offputting for sick visitors like Amamiya Keijirō, who relied on Atami's healing hot springs on doctors' recommendations.

### *The Making of the Zusō Human-powered Railway*

Luckily for Atami, those who complained and suffered the most from its inconvenient transportation were also those who were willing and capable of making a difference. In 1882, after a bumpy, lengthy, and unpleasant rickshaw trip, Amamiya reached the Atami resort. He found several other patients suffering from tuberculosis at the resort, who also sought to recuperate in Atami, only to be annoyed by the road conditions. Among them were prominent political figures of the Meiji government, such as ambassador Hanabusa Yoshitada (花房義質) and Minister of the Right (*Udajin*) Iwakura Tomomi (岩倉具視).<sup>356</sup>

Atami's rich and powerful visitors could also become its investors. This was also how Amamiya met one of his fellow Yokohama entrepreneurs, Tanaka Heihachi (田中平八), who had thrived in the markets of Yokohama. By the time Amamiya had reached Atami, Tanaka had already spent a year there as a rehabilitating patient. Concerned for the hygienic conditions of the

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<sup>356</sup> Hanabusa had just helped Japan negotiate the Treaty of Chemulpo which permitted a permanent garrison of Japanese troops in Seoul.

hot springs and the future development of Atami, Tanaka cooperated with local innkeepers and used most of his private funds to build Atami's first modern waterway system.<sup>357</sup> Tanaka's attempt heralded the success of combining the interests of the higher echelon in the metropolitan areas and that of the local gentry. On a side note, Tanaka also cooperated with Amamiya in funding and establishing the Kōbu Railway's management structure in the late 1880s.

Other entrepreneurs came to Atami to invest directly in the hot-spring inn business, which had previously been exclusive to local privileged households. Higuchi Tadasuke 樋口忠助 was an entrepreneur from Kōshū who had come to Atami in 1872. Like many of his fellow Kōshū merchants, Higuchi kicked off his career in Yokohama, running a warehouse business. In 1882, he invested in and built the first Western-style hotel in Atami, the Higuchi Hotel, which became a major hotel in Atami.<sup>358</sup> His success indicated a reconstruction of the formerly exclusive privileged group of innkeepers based on the "yuto" permit. It also suggested the infiltration of the Kōshū sphere into this old hot-spring town.<sup>359</sup>

The urgency to refining the local transportation facilities had become a consensus view among both the traditional innkeepers and the newcomers. In the mid-1880s, the owners of three

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<sup>357</sup> 梅园郁三, *Atami no kindaika wo sokushita futari: Tanaka Heihachi to Amamiya Keijirō 熱海の近代化を促した二人* 田中平八と雨宮敬次郎, in *Atami Onsen shi 熱海温泉誌*, 140.

<sup>358</sup> Okubo Akane, *Atami ni okeru ryokangyō no seiritsu to hatten – kindai kara kōto Keizai seichōki made 熱海における旅館業の成立と発展—近代から高度経済成長期まで*, in *Atami Onsen shi 熱海温泉誌*, 144.

<sup>359</sup> For details about the transformation of the inn business structure in Atami, see Matsuda Noriko 松田法子, *Meiji Taisho ki ni okeru Yūto Yūkabu Ōyū no henyō 明治大正期における湯戸・湯株・大湯の変容*, in *Atami onsen shi 熱海温泉誌*, 138.

major hotel establishments – the Ishiwatari family of the oldest inn Fujiya, the Tsuyuki Junzō of Hotel Karukan, and the Higuchi Tadasuke of the Higuchi Hotel – came to seek Amamiya’s help in constructing a local railway system. By this time, Iwasaki Yatarō had just donated the large plot of land to the imperial household. The involvement of both the emperor and the largest Zaibatsu had boosted the local gentry’s confidence in pushing their transportation plan forward. They wanted to lobby both the imperial family and Iwasaki to invest in their project, but they had little experience in either the railway industry or fundraising. The railway expert Amamiya seemed to be the right person to turn to.<sup>360</sup>

For Amamiya, developing private/more miniature railways was a means to reconciling regional and national interests. Amamiya had advocated for nationalizing Japan’s railway system. He believed that state-ownership of the regular railways was the only way to lower overall transportation costs because it would contribute to industrial development by mobilizing resources. However, establishing a national railway network was a long-term project. With limited resources, “building regular railways for short-distance transportation would be like killing a chick with the cow-butcher knife” [or using a musket to kill a butterfly]. Low transport frequency and higher fees would neither facilitate regional development nor bring profits to the operating company. Therefore, developing regional, smaller-scale, light railways were prioritized. For Amamiya, the Atami regional railway was a case in point, and he soon took on the project himself.<sup>361</sup>

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<sup>360</sup> Amamiya Keijirō, *Kago Rokujyūnen jiseki*, 314.

<sup>361</sup> Amamiya Keijirō, *Kago Rokujyūnen jiseki*, 312-317.

The planning of the Atami's regional railway revealed a coalition of local businesses, politicians, and entrepreneurs. Table 5 showcases the background of founding shareholders of the Zusō Railway. It was evident that this group was a coalition between local interests groups, Amamiya's associates, and the investors/entrepreneurs active in the Tokyo-Yokohama area. The founding group finished the initial plan in 1886, began surveying the route in 1888, petitioned the government, and obtained a permit in 1889.<sup>362</sup>

Table 5 Founding Shareholders of Zusō Jinsha

Name	Occupation	Region
Ishiwatari Kiuemo	Owner of Fujiya Hotel	Atami
Ishiwatari Yōsuke	Owner of Sugamiya Hotel	Atami
Roki Junsan	Owner of Karokan Hotel	Atami
Sego Naomichi	Owner of Shinseisha Hotel	Atami
Higuchi Tadasuke	Owner of Higuchi Hotel	Atami
Komatsu Seiichi	Atami Resident	Atami
Osaki Sakuhei	Owner of Koiseya Hotel	Odawara
Kataoka Nagasaemo	Assistant official of Odawara Town	Odawara
Fukazawa Sensuke	local politician of Odawara	Odawara
Amamiya Seijirō	President, Kōshū Zaibatsu	Tokyo-Yokohama
Tanaka Heihachi	Investor/Entrepreneur, Amamiya's partner	Tokyo-Yokohama
Moki Sōhei	Investor/Entrepreneur	Tokyo-Yokohama
Ōgura Kihachiro	Investor/Entrepreneur, President of Ōgura Zaibatsu	Tokyo-Yokohama
Yokoyama Magoichirō	Investor/Entrepreneur, associate of Ōgura Zaibatsu	Tokyo-Yokohama
Takajimo Kauemon	Investor/Entrepreneur, Amamiya's partner	Tokyo-Yokohama
Kitani Ichirōsaemon	Investor/Entrepreneur, involved in Tokyo Horse-drawn Railway, Imperial Hotel	Tokyo-Yokohama
Mori Kiuemon	Investor/Entrepreneur	Tokyo-Yokohama
Hiranuma Senzō	Investor/Entrepreneur/Politician	Tokyo-Yokohama
Sakumoto Munezō	Investor/Entrepreneur	Tokyo-Yokohama
Nishimura Kisaburō	Investor/Entrepreneur	Tokyo-Yokohama

The construction of Zusō required quite a sizable budget for a small railway company because the engineering process was much complicated due to natural constraints. First, the

<sup>362</sup> Kanagawa-ken Kikaku Chōsabu Kenshi Hensanshitsu 神奈川県企画調査部県史編集室, ed., *Kanagawa kenshi. Shiryō hen 18 神奈川県史資料編 18* (Yokohama-shi 横浜市: Kanagawa-ken 神奈川県, 1975), 787–93.

natural environment of the routes connecting Odawara to Atami had complicated construction. The flatlands around Odawara were narrow. From there, the road twined around mountains and coastal cliffs. In addition to the ups and downs, winding and twining, the geological conditions made excavating, banking, and even getting rid of the muck harder than expected due to the hard ground of Atami [Map 6]. To ensure safety and facilitate communication, the engineer also designed telephone lines in each station and constructed two-way routes wherever the plain width allowed.<sup>363</sup> The initial budget was 260,000 yen but soon had to be cut to 120,000 yen. It was still a costly project compared to 80,000 for the connected Odawara Horse-drawn Railway and much more expensive than the later human-powered railways.

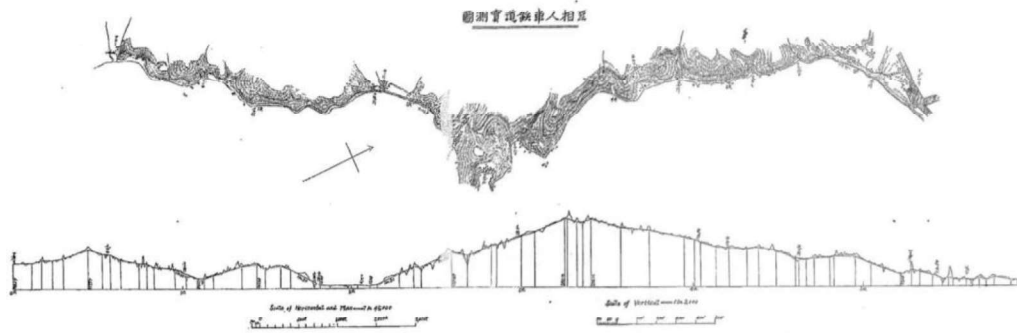
Nevertheless, fundraising proved more difficult than expected. For unknown reasons, Iwasaki Yatarō was not on board with the plan. The imperial house only donated 300 yen, which was far from enough. The 1890s international financial crisis also complicated the fundraising process. The engineers were forced to re-survey the route to find a way to lower costs.<sup>364</sup> It was not until 1894, when Amamiya finally convinced the bank to loan him the requisite funds, that construction of the railway was complete.<sup>365</sup>

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<sup>363</sup> Uno Umekichi 宇野梅吉, “Zusō Jinsha Tetsudō Sokuryō Gaikyō 豆相人車鐵道測量概況,” *Kōdan Zasshi 工談雜誌 Kōdakai 工談会*, April 1892, 146.

<sup>364</sup> Uno Umekichi 宇野梅吉, “Ronsetsu Oyobi Hōkoku Zusō Jinsha Tetsudō Sokuryō Hōkoku 論說及報告 豆相人車鐵道測量報告,” *工學會誌*, May 1892.

<sup>365</sup> At the time, Amamiya was also investing in several other enterprises, including the Tokyo waterway and the mining railway in Hokkaido. In 1894, he was sued and imprisoned because of an order of water pipes to the Tokyo municipal government that had been delayed. In prison, he continued meeting with the banks and finally raised enough funds to embark on the construction of the Zusō Human-powered Railway. See Amamiya Keijiro, *Kago rokujūnen jiseki*, 315.

Map 6 Engineering Survey Map of Zusō Jinsha<sup>366</sup>

### ***The Adoption of Human-power: Reconciling the environment and capital***

Due to limited funding, the adoption of human power became a bold but rational and expedient strategy. The adoption of human power was not due to the entrepreneurs' ignorance. Amamiya was a pioneer in the electrification of railways and tramways in Japan. He had already proposed electrifying the street tramway in Tokyo as early as 1893 and had become president of the Tokyo Streetway Company (*Tokyo Shigai Tetsudō*) in 1903. However, because of his familiarity with the electrification business, he decided to forgo the original plan of using electricity to power the Atami railway due to a lack of funding and engineering difficulty.<sup>367</sup>

If not using electricity, the next possible option would have been horsepower, common across Japan. Amamiya was familiar with the operations of horse-drawn railways. His fellow

<sup>366</sup> Uno Umekichi 宇野梅吉, "Zusō Jinsha Tetsudō Sokuryō Gaikai 豆相人車鐵道測量概景," *Kōdan Zasshi 工談雜誌*, May 1892.

<sup>367</sup> Amamiya Keijirō, *Kago rokujūnen jiseki*. Kanagawa-ken Kikaku Chōsabu Kenshi Hensanshitsu, eds., *Kanagawa Kenshi Shiryō Hen 18 (Kindai Gendai 8)*, Kanagawa, 1975, 787-793.



Kōshū entrepreneur, Wakao Ippei, had experienced the downside of horsepower first-hand as a major shareholder of the Tokyo Horse-Drawn Railway.<sup>368</sup>

However, horse-drawn railways had experienced several setbacks derived from the tension between humans and nature in a changing urban environment. The cholera pandemic of 1886 led to a drop in passengers. As a coping strategy, the company tended to over-use horses to make up for the loss. However, abuse shortened horses' lives, forcing the company to buy 1.4 times more horses than they otherwise would have. In 1899, the emerging anti-animal cruelty movement and concerns over co-residence of Japanese and foreigners outside the designated settlements pushed the police to issue new regulations to lower passenger maximums (see Chapter 2). These measures further decreased their revenue.

Using horses as the primary driving force also meant higher maintenance fees. Horse-keeping – including purchasing horses and their provisions – accounted for over 40% of the Tokyo Horse-Drawn Railway's expenditures. Another considerable expense for the company was salaries, a big chunk of which went to stable staff.<sup>369</sup> These costs could be especially formidable for companies with less start-up capital. For example, when local businessmen in Nabeyama, Tochigi Prefecture, planned their regional railway in 1897, they shared a similar logic. The cost of purchasing, feeding, and maintaining horses outweighed horses' marginal

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<sup>368</sup> The impact of the Cholera outbreak in 1886 cut the price of the company's stock and gave Wakao Ippei the chance to nearly buy out the company. In 1895, Wakao held 1,200 shares of the Tokyo Horse-drawn Railway, and had become its biggest shareholder, (out of 23 shareholders holding at least 100 shares, 12 were associates of Wakao). See Saito Yasuhiko, *Chihō zaibatsu no kindai*, 24-25.

<sup>369</sup> Saito Yasuhiko, *Chihō zaibatsu no kindai*, 22-23.

transportation efficiency on the railways. Therefore, they followed Atami's model of adopting human power.<sup>370</sup>

Finally, Atami's topographical conditions accentuated safety concerns over horses. The narrow terrain along the cliff-lined coastline was more suitable for human beings than for irrational and bulky horses.<sup>371</sup> In addition, by the time construction began, many horses had been recruited to serve the Sino-Japanese War effort. Thus, the lack of horses and the subsequent inflated prices rendered human power a more economical and expedient choice.

### ***The Zusō Human-powered Railway and the Making of Modern Atami Memories***

The operation of the Zusō Human-Railway marked a new stage for the Atami-Odawara region. On July 10, 1895, Zusō officially started operation. It cut the travel time by an hour and provided a more stable trip than the rickshaws [Table 6]. It was designed as a means of public transportation rather than an individual mode of transport like the rickshaw. The passenger carriage followed that of the design of the horse-drawn tramway in Tokyo, but the class-division and the ticketing system followed a typical steam railway. The first-class carriage held up to 4 passengers, second-class 4-5, and 3rd 6-8 passengers. First-class was twice the price of the second. Tickets for children under 3 were free and half-price for those under 10. If visitors from

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<sup>370</sup> “Nabeyama jinsha tetsudō fusetu Tokyo gan 鍋山人車鉄道布設特許願”, in Tochiki shishi hensan iinkai 栃木市史編さん委員会, ed., *Tochigi shishi. Shiryō hen, kin-gendai 2 栃木市史 史料編 近現代 2* (栃木: 栃木市, 1983), 726.

<sup>371</sup> Uno Umekichi 宇野梅吉, “Zusō Jinsha Tetsudo No Kigen 豆相人車鐵道ノ起原,” *Kōdan Zasshi 工談雜誌*, March 1892.

Tokyo caught the morning train from Shinbashi at 5:20 am, they could reach Atami by 13:05, at least in days without heavy rain. In the same year, Tanaka Heihachi, Atami's partner in founding Zusō, also funded and established the first batch of electric lamps on the streets of Atami. The hot-spring resort had now become a modern town.

Table 6 Differences in Travel Before & After the Launch of Zusō <sup>372</sup>

		Tokyo-Kouzu	Kouzu-Odawara	Odawara-Atami	Total
<b>1893</b>	Transportation	Railway	Horse-drawn Railway	Rickshaw	
	Travel Duration	2.5 hours	35 min	5 hours	<b>8 hours</b>
	2nd class fee	98 sen	15 sen	65 sen	<b>1 en 78 sen</b>
	3rd class fee	49 sen	7 sen		<b>1 en 21 sen</b>
<b>1896</b>	Transportation	Railway	Horse-drawn Railway	Human-powered Railway	
	Travel Duration	2.5 hours	35 min	4 hours	<b>7 hours</b>
	2nd class fee	98 sen	15 sen	60	<b>173 sen</b>
	3rd class fee	49 sen	7 sen	40	<b>96 sen</b>

Built upon the narrow plank road along the cliff-lined coast, the railway brought passengers a fresh perspective on the surrounding environment. A report describing this experience following the launch of Zusō reported: “The railway stretches along the cliffs on the coastline. It allows people to have an exquisite taste of overlook. The design of the carriage is beautiful. It does not oscillate but coordinates smoothly with varying speeds, slow and fast on the rail. The drivers must have been practicing how to ride it over a year, for their skills were

<sup>372</sup> Translated from Table 3, Takayanagi Tomihiko, “Kindai Atami ni okeru kōtsū infura no shinten,” in *Atami Onsenshi*, 214.

astonishingly deft.”<sup>373</sup> The Zusō human-powered railway created a unique modern travel experience, a hybrid of one that was intimate with nature and one that was modern and artificial.

The ups and downs of the rails and the design of the carts brought the riders closer to the landscape. To some extent, it even incorporated the visitors into the surrounding environment. However, unlike typical railway carriages constructed into thick and hard metal boxes, the carriage of the *jinsha* was made out of wood. In this smaller and simplified form of a cart, riders became more sensitive to and intimate with the surrounding environment. Makino Nobuichi (牧野信一), a novelist who was born in Odawara in 1896, wrote about his childhood memories on Zusō in *Private Stories of the Atami-line (Atami-sen Shigo 熱海線私語)*. “The slope was at the right angle of inclination...the cart dashing through the slop so vigorously that it swept the dirt along the way and rolled along with it.”<sup>374</sup> A contemporary novelist, Kojima Masajirō (小島政二郎), shared a similar experience:

“When climbing up the hill, the pullers pushed so laboriously and sweated so hard that their pace was literally like the cows. However, when going down the hill, the cart rushed down a thousand miles (*issha senri* 一瀉千里), which really made for a refreshing and agreeable experience. But because it was on the cliff by the sea, passengers were [so nervous that they] all sweated hard in their hands. The cart picked up momentum and began to fly as the cool breeze brushed over the face.”<sup>375</sup>

<sup>373</sup> “Zapō Jinshatetsudō,” Kandōkai Hokokushi No.44, 1896-4. In Kanagawa-ken Kikaku Chōsabu Kenshi Hensanshitsu, eds., *Kanagawa Kenshi Shiryō Hen 18 (Kindai Gendai 8)*, Kanagawa, 1975, 792.

<sup>374</sup> Quoted from 瀬崎圭二 Sesaki Keiji, “Bungaku ga utsusu Atami no Kindai 文学が映す熱海之近代,” in *Atami Onsen-shi*, 197.

<sup>375</sup> Yamada Kaneji, *Atami fūdoki zoku*, 24.

However, the *jinsha* ride also shared traits with other modern modes of transportation that were new to the Meiji travel experience. The renowned novelist, Kunikida Doppo (国木田独歩) visited Atami on June 20, 1907, and later wrote a novel based on a healing trip from Shinjuku to Odawara, entitled “On the way to Yugawara (Yugawara Yuki 湯河原ゆき).” He captured the typical scenes on the *Jinsha* trips. As drivers inched the cart up the hill, passengers would put on glasses, reading newspapers in the slowly moving cart. As on a typical railway, the small carriage also created a temporary space for strangers to share. After running out of ways to pass the time, the boredom and silence would stimulate conversation among the riders. Thus, the human-powered railway forged new connections among strangers in this moving space, just like regular steam railways. Kunikida also wrote about the *jinsha*’s siren, a safety measure to warn any passersby when the carts were dashing downhill. The siren was the same as that used by the omnibuses. “The siren,” Kunikida wrote, “boosted people’s mood. Even for unpleasant trips, this siren would lighten things up.”<sup>376</sup> The silence, the space, and the sound were all essential parts of a modern railway trip.

Nevertheless, from the operational perspective, the Zusō remained unprofitable for years because of the cost of labor. Tickets sold could not offset operational costs. After operating for 7-

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<sup>376</sup> Kuikida Doppo 国木田独歩, “Yugawara Yuki 湯河原行き,” in Deguchi Tomoyuki 出口智之, *Kisha ni notta meiji no bunjintachi* \: *Meiji no tetsudo kikoshu 汽車に乗った明治の文人たち: 明治の鉄道紀行集* (Tokyo 東京: Kyoiku Hyōron Sha 教育評論社, 2014), 78–100.

8 years, daily revenue was less than 100 yen, out of which 85 yen had to be paid to the laborers; the shareholders could only get 1-2 shū of profit out of it. Amamiya tried to import suitable locomotives from the U.S. to replace human power. He needed something that could climb the steep slope of Atami but within a tight budget. After several failed attempts, he managed to install a gasoline-powered locomotive in Zusō in 1907, ending the decade-long history of human-powered railways.<sup>377</sup>

However, the adoption of gasoline-powered locomotives did not erase the human-powered railway from the memories of Atami but instead reinforced *jinsha* as a nostalgic cultural symbol. This symbol was ingrained with the sense of space, time, and contested interpretation of “progress.” In 1920, on the eve of the opening of the Atami Railway (as a branch of the national Tokaidō Railway), Tokutomi Sohō (徳富蘇峰) and several local elites gathered 50 prominent figures to reflect upon their experience with and memories of Atami. Many of the figures mentioned their experience with the Zusō human railway. This was 13 years after the termination of human-powered railways. These intellectuals, politicians, and businessmen all acknowledged the “backwardness” of human power. They used “poor and weak” (*hinjaku* 貧弱) or “reckless” (*muteppō* 無鉄砲)” to describe the human-powered railway, something “unimaginable” at the time of their writing. However, in the same context, they expressed their appreciation for the *jinsha* and its times. “Our most nostalgic memories about Atami were the age of the human-

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<sup>377</sup> Amamiya Keijirō, *Kago rokujyūnen jiseki*, 316.

powered railway,” said the famous playwright Tsubouchi Shōyō (坪内逍遙), who was also a frequent guest in Atami. He continued to reminisce about a shabby theatre not far from the *jinsha* station. There were few residences around and only a few cottages blending into the wilderness.

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In this sense, the human-powered railway straddled the middle of the spectrum between the artificial and the natural. It was essential in making the experience of the hot-spring town in the modern era. The limitations of the organic driving force and transportation efficiency – although not at all intended – in turn reinforced the resort’s character as a getaway from the metropolitan area, a leisure spot for the privileged. This hybrid and ambivalent character blended the *jinsha* into the environment of the Atami-Odawara coast. At least in people’s memories, it even created harmony about this “famous place,” which was also undergoing slow but significant change during the Meiji era.

In this context, the introduction of gasoline power came in sharp contrast, appearing as an intruder on nature. Iwaya Sazanami (巖谷小波) wrote that the human-powered railway “was pleasant to ride, and even not bad compared to today’s light railway. For sure, the human-powered railway did not have the unpleasant soot.”<sup>379</sup> The black smoke produced by the gasoline engine and the noise that accompanied it was a conspicuous change to the landscape of Atami. Makino Nobuichi wrote about a grandma when reminiscing over this change. “Grandma said,

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<sup>378</sup> Tsubouchi Shōyō 坪内逍遙, “熱海是非 Atami Zehi,” in *Atami to gojū meika 熱海と五十名家*, 95.

<sup>379</sup> Iwaya Sazanami 巖谷小波, *Nijyūgo nen buri no Atami 二十五年ぶりの熱海*, in *Atami to gojū meika 熱海と五十名家*, 1.

when [they changed to gasoline locomotives], we thought it would be great to go to Atami whenever we wanted. However, once I thought about the smoke and the siren [of the gasoline train], I was paralyzed.”<sup>380</sup> In the early years, residents along the line even protested the change by throwing rocks at passing trains. The human-powered railway then became a symbol of nostalgic sentiment. It signified a time with exciting but less radical change.

As a result, the *Zusō Jinsha* was never merely a transportation method but an inherent element that made the region what it was. Atami attracted the higher echelon of the Tokyo-Yokohama metropolitan area, making *Zusō* the most ridden and the most written about the human-powered railway in Japan. The *Zusō Jinsha* also became the model for human-powered railways, not only as a business model but also as a regional development strategy to re-create a “famous place” in the modernization era. In smaller localities with fewer resources, these practices produced variegated outcomes, which is the subject of the next section.

### **The Taishaku Jinsha: Fabricating Urban Attractions in the Suburb**

On January 19, 1899, three businessmen from a Kanamachi – a small town on the northeastern outskirts of Tokyo – came to Atami. They started from the new Kanamachi Railway Station and transferred to the horse-drawn railway at Ueno to reach Shinbashi.<sup>381</sup> Then the

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<sup>380</sup> Quoted from 瀬崎圭二 Sesaki Keiji, “Bungaku ga utsusu Atami no kindai 文学が映す熱海之近代,” in *Atami Onsen shi 熱海温泉誌*, 197.

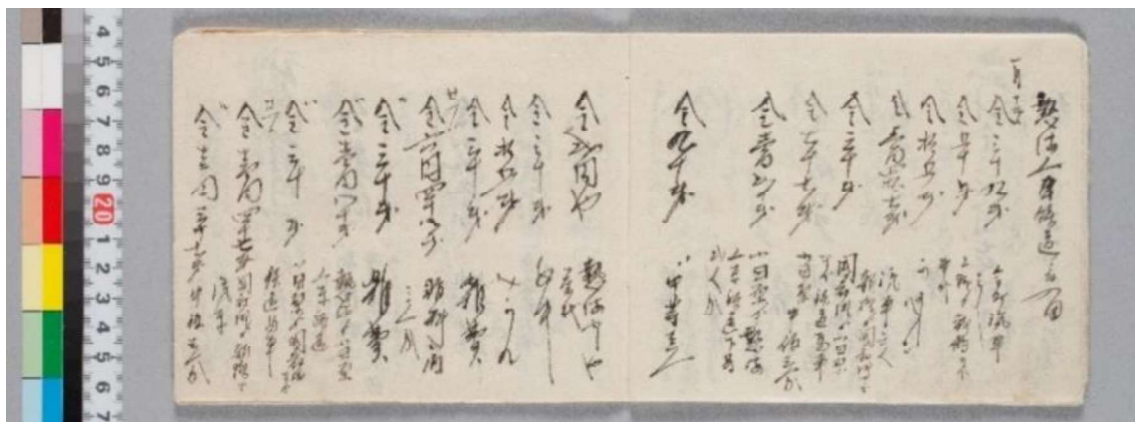
<sup>381</sup> The horse-drawn railway charged 3 sen per zone for first class passengers, and 2 sen for second class passengers. It covered three zones from Ueno to Shinbashi, for a total fee of 9 sen each way. However, the reimbursement form indicates that these three businessmen spent 50 sen, which suggested that they may have taken rickshaws instead. According to the “Rickshaw rate table (Shinai jinrikicha chinking hyo)” in *Tokyo-Yokohama issshūkan annai*, it cost



Tokaidō railway took them to Kōzu, where they transferred to the Odawara Horse-drawn Railway en route to Odawara, the starting point of the *Zusō Jinsha*. One of them purchased a second-class ticket, while the other two chose the third-class carriage, which cost them altogether three yen and ten sen. To save costs, all three businessmen took the third-class carriage on their way back home. They tracked every expense on the way for their records (and probably also for reimbursement) [Image 13]. They stayed in Atami for just one night and returned right away.

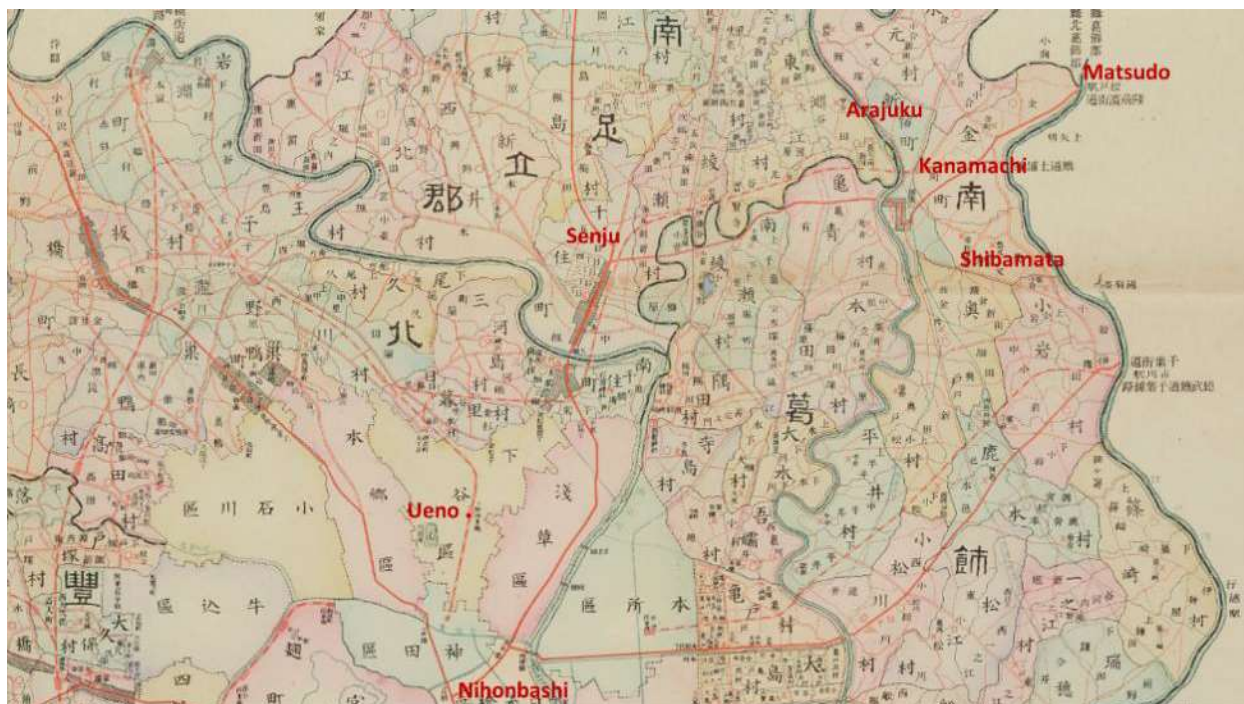
Unlike most other visitors to Atami who sought a relaxing trip to the resort, the three men were on business. Their real purpose was along the way, instead of at the destination: they were considering building their own human-powered railway in their hometown.

Image 13 Expense Report from the Inspection Trip to Atami<sup>382</sup>



20 sen between Shinbashi and Ueno by rickshaws. It did not explain how they had planned their routes. The horse-drawn-railway would continue to operate on animal power until 1903 when it was finally electrified. Shiden Hensanjo 史伝編纂所, *Tōkyō Yokohama issshūkan annai 東京横浜一週間案内* (Tokyo 東京: Shiden Hensanjo 史伝編纂所, 1901).

<sup>382</sup> Taishaku jinshatetsudō fusetsu zappi shi 帝釈人車鉄道敷設雑費誌, 1898-11. “Taishaku Jinshatetsudō Kaisha Archive (TJK) 帝釈人車鉄道会社関係資料,” n.d., 葛飾区郷土と天文の博物館 Katsushika City Museum.

Map 7 A Map of the Kanamachi-Shibamata Region<sup>383</sup>

They came from the Kanamachi-Shibamata region, located on the outskirts of Tokyo, on the west bank of the Edo River [Map 7]. The late Tokugawa guidebook, *Ehon Edo Miyage* 絵本江戸土産, depicted the landscape. A narrow road wound towards a torii gate to the Taishakuten Temple (帝釈天) [right picture in Image 14] through the vast farmland. The attached poem read:

Taishakuten, located in Shibamata Village, on the Day of Kōshin, people from the city, the noble and the lowly, all crowded here. Across the Tonegawa River, to anticipate an overlook on the bean geese, this view would be the best.

<sup>383</sup> Tōkyōfu 東京府, *Tōkyōfu gunku zenzu* 東京府郡区全図 (Tokyo 東京: Seikadō 清華堂, 1896).

Image 14 Taishakuten: The Landscape and Pilgrimages<sup>384</sup>

As the poem portrayed, the Taishakuten Temple and the Tonegawa River Waterway were two signatures of this region. The Temple of Taishakuten was not only a cultural symbol but also a social and economic center of the region. According to Buddhist cosmology, the Taishakuten, also known as “Sakra, Lord of the Devas,” was a prominent ruler of the Trayastrimsa Heaven. The Taishakuten Temple in Shibamata Village was famous for a salvation story circulated since the late Tokugawa period. During the Teimei era (1781-89), a ninth-generation descendent of the temple abbot had carried the wooden joss of the Taishakuten on his back and wandered the city of Edo, praying for the people suffering from great famines, epidemics, and volcanic

<sup>384</sup> Andō Hiroshige 安藤廣重 and Shōtei Kinsui 松亭金水, *Ehon Edo miyage 10 繪本江戸土産 10* (Tokyo 東京: Kuya Kōzaburō 菊屋孝三郎, 1867); Takahashi Shōtei 高橋松亭, “Higashi Katsushika-gun Shibamata-mura Taishakuten maite no zu 東葛飾郡柴又村帝釈天詣の図,” *Fūzoku Gahō 風俗画報*, no. 73 (June 10, 1894): 26.

eruptions.<sup>385</sup> Since then, thousands of pilgrims had gathered at the temple to celebrate the birthday of Taishakuten on the ninth day of the first lunar month. This festival was also known as the day of Kōshin (庚申の日).

Like many temple compounds in Asia, the religious establishment and festival here in Katsushika created a special place that combined religion, the volatile economy, and an array of entertainment. Pilgrimages brought business opportunities for the local community. Farmers became seasonal merchants on the day of the festival.<sup>386</sup> What happened in Shibamata on the day of Kōshin resonated with that of Takanawa on the day of the *Nijyūroku Yamachi* (see Chapter 1) and what Nam-lin Hur had demonstrated about the Asakusa Sensōji. Prayer and play entangled and even came to redefine the social and spatial structure of the place as people from both the urban center and the periphery converged.<sup>387</sup>

The development of modern transportation infrastructure in the Meiji period reinforced the capitalized religious/cultural character of Taishakuten Temple. In 1897, the Japan Railway Company set up a new station in Kanamachi along its trunk railway connecting Tabata 田端 to Tsushiura 土浦 (the present-day Jōpan line 常磐線). This change meant that people from Tokyo could hop on the train from Ueno, and it would take only fifty minutes, instead of hours by

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<sup>385</sup> Katsushika Kyōiku Iinkai 葛飾教育委員会 and Shibamata chiiki bunkateki keikan chōsa iinkai 柴又地域文化的景観調査委員会, *Katsushika-Shibamata Chiiki Bunkateki Keikan Chōsa Hōkokusho* 葛飾・柴又地域文化的景観調査報告書 (Katsushika Kyōiku Iinkai 葛飾教育委員会, 2015), 194.

<sup>386</sup> Katsushika Kyōiku Iinkai and Shibamata chiiki bunkateki keikan chōsa iinkai, 2 and 81.

<sup>387</sup> Nam-lin Hur, *Prayer and Play in Late Tokugawa Japan: Asakusa Sensōji and Edo Society* (Cambridge, Mass.: Harvard University Asia Center : Distributed by Harvard University Press, 2000).

rickshaws or on foot, to get to the temple of Taishakuten. The steam railway had helped draw the peripheral Kanamachi-Shibamata into Tokyo's radiating sphere.

While the railway made Kanamachi-Shibamata more accessible, the local transport infrastructure became increasingly insufficient for visitors. The straight-line distance between Kanamachi Station and Taishakuten was 0.608 miles, approximately a thousand meters. Thought of as a short distance, it was hard to walk across the vast farmland, and the muddy field roads made rickshaws a less desirable option. It was evident to the local people that they needed some form of local transportation. It was plausible that their purpose may not only have been to provide a more pleasant experience for the visitors but also, like what had happened in Zusō, to create a new icon as a part of the cultural experience of Taishakuten ritual. However, unlike Zusō and Atami, whose reputations had been boosted thanks to their rich and influential guests, Kanamachi-Shibamata was a destination for the masses. Hence, it was at a smaller scale; the locals had to be self-reliant.

Luckily, the Kanamachi-Shibamata region had been emerging as a transportation nexus since the Tokugawa period. This region was located at the intersection of the Tone River network (利根川水系) and the Mito Road (Mitokaidō 水戸街道). The Edo River was a significant branch of the Tonegawa River. It connected the region to northern Kanto domains such as Kōzuke 上野, Shimotsuke 下野, and Hitachi 常陸. During the Edo period, provision boats converged at this point along the Edo River before being transported to supply the

shogun's capital. At the same time, the Edo populace's "night soil" was transported outside of the city as fertilizer via the same route to the countryside.<sup>388</sup>

Map 8 The Tonegawa River Network



The waterway network created a region that transcended the rigid administrative divides drawn by governments. Throughout the Edo period to the Meiji era, and even until today, the Kanamachi-Shibamata area and the Matsudo area were never under the same jurisdiction.<sup>389</sup> However, the two regions were connected by the Edo River. The Tokugawa shogunate set up a

<sup>388</sup> Katsushika Kyōiku Inkai and Shibamata chiiki bunkateki keikan chōsa iinkai, 139.

<sup>389</sup> According to the Kyūdaka Kyūryō torishirabechō 旧高旧領取調帳, Kanamachi-mura was under the reign of the Shogunate (Bakufu-ryō) during the Tokugawa era, under Kosuge-ken Minimi Katsushika gun from 1869-1871, under Tokyofu- No. 11 Division 4<sup>th</sup> District from 1871-1889, and since 1889 under the Chōson System (Chōson sei), Kanamachi-mura and Shibamata-mura were incorporated as Kanamachi-mura under South Katsushika County (Minami-Katsushika gun), Tokyo-fu. Matsudo, on the other hand, was under the domain of Shimousanokuni (下総国) during the Tokugawa period, and had operated as Matsudo-eki as an independent post station since 1878 after the abolition of the han system (Haihan chiken), and under East Katsushika County (Tō-katsuchika gun), Chiba Prefecture since 1889 under the Chōson System. Motoi Kimura 木村礎, ed., *Kyūdaka kyūryō torishirabechō 旧高旧領取調帳* (Tokyo 東京: Tōkyōdō Shuppan 東京堂出版, 1995).

major checkpoint station (*sekisho* 関所) along the Mito Road, one at Kanamachi on the western bank, and another across the Edo River at Matsudo 松戸 on the eastern bank. Known as the Kanamachi-Matsudo Barrier, the checkpoint station put both sides of the Edo River under official surveillance. It functioned as part of the Tokugawa apparatus to stabilize its hegemonic power in the Baku-han system. However, while ordinary passengers had to cross the checkpoint station, residents of Kanamachi-Shibamata and Matsudo were allowed to cross the river in both directions with cargo freely. However, they would use a different ferry station. This wharf was named “Yagiri no Watashi 矢切の渡し” on the Shibamata side. This literally means “ferry wharf bound for Yagiri,” which was in Matsudo territory. While the Meiji government closed the Tokugawa checkpoint station in 1869, “Yagiri no Watashi” continued to function as an active wharf. The wharf was only a few steps from the Temple of Taishakuten.<sup>390</sup>

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<sup>390</sup> Katsushika Kyōiku Iinkai and Shibamata chiiki bunkateki keikan chōsa iinkai, 144.

Image 15 The Taishaku Jinsha Railway



The regional connection in Kanamachi-Shibamata and Matsudo across the Edo River was reinforced by the local initiatives in founding the human-driven railway. In December 1898, 24 residents co-signed a construction petition to the Tokyo government and the Home Ministry. The inspection trip to Atami happened on May 12, 1899. After the trip, the founders decided to appeal to the government with an extension project to serve the community better. The final plan featured a line of 1.4 km with an increased budget of 30,000 yen. This was much less than that of Zusō but was feasible given the locality's financial capabilities. Five months later, they received official permission. Thus, the Taishaku Human-drawn Railway Joint-stock Company (*Taishaku*



*Jinshatetsudo Kabushikikaisha* 帝釈人車鉄道株式会社, referred to as “Taishaku Jinsha”

below) became the fifth human-drawn railway company in Japan.<sup>391</sup>

Table 7 Founders/Shareholders of the Taishaku Jinsha Company

Name	Position in Taishaku Jinsha Company	Matsudo A&C Bank Relations	Business/Occupation	Registered Address
<b>Hototani Isuke</b>	<b>consulting director</b>	<b>Founder, Director</b>		<b>Kanamachi</b>
<b>Udakawa Yasuemon</b>	<b>Director</b>	<b>Founder</b>	<b>Agriculture</b>	<b>Kanamachi</b>
<b>Yajima Uzaburō</b>		<b>Founder, shareholder</b>	<b>Kanamachi Tile Manufature Company</b>	<b>Kanamachi</b>
Nagatani Miyazō			Agriculture	Kanamachi
<b>Futaba Kitarō</b>	<b>president, director</b>	<b>Founder, shareholder</b>	<b>Agriculture (Tea)</b>	<b>Kanamachi</b>
Futaba Seizaemon			Agriculture	Kanamachi
Hiruma Heizaemon				Kanamachi
Wakabayashi Benjirō			Agriculture	Kanamachi
Sekiguchi Katsuzō				Kanamachi
Nagatani Kinhei			Agriculture	Kanamachi
Hirooka Shakuzaborō				Kanamachi
<b>Ishiwatari Kinuemon</b>	<b>Director</b>	<b>Founder, Director</b>		<b>Shibamata</b>
<b>Suzuki Hyakuzō</b>		<b>Founder</b>	<b>Commerce</b>	<b>Shibamata</b>
Suzuki Jinzaemon				Shibamata
Amamiya Jinzaemon			Commerce	Shibamata
Takagi Buzaemon			Agriculture	Shibamata
Sugiura Shōhei				Shibamata
Saitō Masao	Director, Executive Director			Shibamata
Saitō Gorōemon			Agriculture	Shibamata
Sugiura Yashichi			Agriculture	Koiwada-mura
<b>Fukuoka Tōhachi</b>	<b>Director</b>	<b>Founder, Director, President</b>	<b>Commerce(Firewood)</b>	<b>Matsudo</b>
<b>Shibutani Heizō</b>		<b>Founder</b>	<b>commerce (Firewood, lumber)</b>	<b>Matsudo</b>
Watanabe Kitarō		Shareholder	commerce	Matsudo
Hayashi Okajirō			commerce (lumber)	Matsudo

<sup>391</sup> “Kabushikikaisha Taishaku Jinsha Tetsudō fusetu gan 株式会社帝釈人車鉄道布設願”, “Taishaku jinsha tetsudo enchō kidō fusetu gan 帝釈人車鉄道延長軌道布設願”, “Taishaku Jinshatetsudō Kaisha Archive (TJK) 帝釈人車鉄道会社関係資料,” 05, 06. They changed the company name to “Taishaku Jinsha Kido” in April, 1907.

Without the support of conglomerates or prominent visitors from the metropolitan area, the founding of the *Taishaku Jinsha* relied on the local community. Table 7 lists the background of the 24 founders, revealing a local economic network with the following features. First and foremost, all founders were local elites from the region: Kanamachi, Shibamata, and across the river, Matsudo. The only exception, “Koiwada-mura,” was an adjacent village south in Shibamata, still within the region. Secondly, 9 out of the 24 founders were either founders, shareholders, or directors of the Matsudo Agriculture and Commerce Bank (Matsudo Nōshō Ginkō 松戸農商銀行, hereafter referred to as the MACB). Established in 1895, the MACB was a small local bank registered and located in Matsumoto. The bank’s founding also relied on local businessmen and wealthy peasants from the Kanamachi-Shibamata region. In turn, the bank came to finance the industrial development of small-scale local establishments. The president, Fukuoka Tōhachi, was involved in founding the *Taishaku Jinsha* and served as a board member in later years.

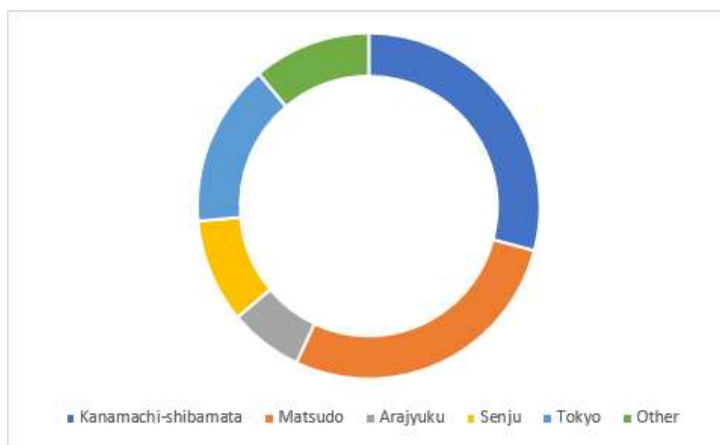
Most *Taishaku Jinsha* founders had roots in the community and were old money families who thrived in agriculture and the river transportation business. For example, Fukuoka Tōhachi and Shibutani Heizō, who had founded both the MACB and *Taishaku Jinsha*, generated a substantial fortune via the firewood and lumber transportation business. The region’s prosperity had been relying on its position as a transport nexus since the Tokugawa period.

In the Meiji era, many members of the local gentry attempted to develop new ways to participate in modern industries. One of the founders, Yajima Uzaburō, was from the Yajima

household that had served as the chief of the Kanamachi-Matsudo checkpoint station in the Edo period for generations. In the 1880s, Yajima started building a tile factory near the location of the previous Tokugawa checkpoint station. This establishment became one of the first modern factories in the region.<sup>392</sup>

Others came from outside of the region but developed local interests as well. The president of Taishaku Jinsha and also one of the founders of the MACB, Futaba Kitarō, was born in Nihonbashi in 1859. He had been running a tea planting business since 1872. He won several medals for his tea production in domestic industrial promotion exhibitions and had thrived as a tea supplier to major department stores in Tokyo, including Mitsukoshi. He founded a tea garden in Katsushika, moved there, and became involved in local affairs.<sup>393</sup>

Figure 3 Location of Taishaku Jinsha Suppliers (%)



<sup>392</sup> Annexed into Nihon renga seizō kabushikikasha in 1919 by Shibuzawa Eiichi. Nihon Renga Seizō Kabushiki Gaisha 日本煉瓦製造株式会社, *Nihon renga hyakunenshi 日本煉瓦100年史* (Tokyo 東京: Nihon Renga Seizō 日本煉瓦製造, 1990).

<sup>393</sup> “二葉学園の先達 Futaba Gakuin no Sendatsu,” Taishaku Jinshatetsudō Kaisha Archive (TJK).

The construction of Taishaku also relied on the supply of local resources. The Taishaku Jinsha company purchased most supplies, construction materials, and maintenance services locally, often from shops owned by the Taishaku founders themselves. For example, they purchased most of the carts from the Higuchi Shop in the Kyobashi District. They also had to rely on engineers from the Hattori Shop in Tsukuji for repairs and parts. However, they relied on outside sources only in a limited capacity. Figure 3 was generated based on receipts from the company archives. It shows where the company purchased its supplies. The most frequent place of purchase was still Kanamachi-Shibamata and Matsudo. Arajuku and Senju were also neighboring districts.

Additionally, there were many self-help efforts. For example, the Kanamachi Tile Manufacturing Company, owned by the Yajima family, mediated the ordering of a few carriage carts manufactured from a third party. The company itself also manufactured 20 out of a total of 64 carriages. Their design was based on the model they had bought from Higuchi Shop and what they had learned from Zusō. They probably contracted local carpenters to finalize the product.<sup>394</sup>

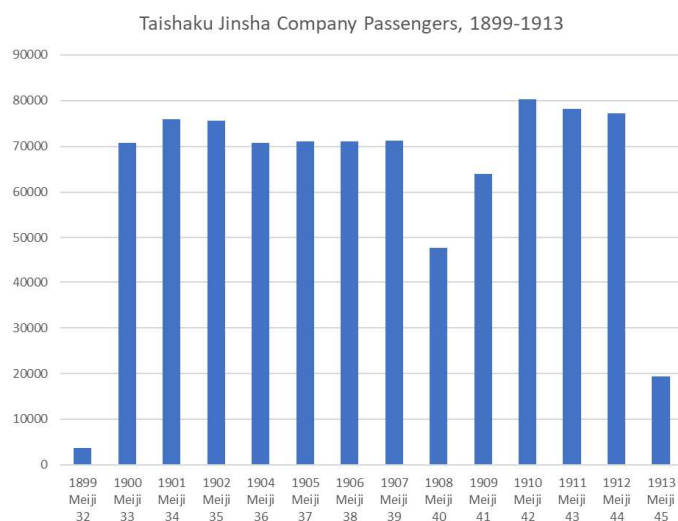
It took only a few months to construct the railway after the Home Minister granted permission. The line was short, the terrain was flat, and the construction engineering was simple. On December 7, one day before the Kōshin festival in 1899, Taishaku Jinsha officially commenced operations. It served 3,710 passengers in the first year. Then, word got out. During the following year, 70,712 visitors came to this suburb of Tokyo to experience this new mode of

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<sup>394</sup> Taishaku Jinshatetsudō Kaisha Archive (TJK).

transportation. As shown in Figure 4, passenger counts remained around 70,000-80,000 per year for the next thirteen years. This number vaulted Taishaku Jinsha into the three most ridden human-drawn railways in Japan.<sup>395</sup> This was an extraordinary number given that Taishaku Jinsha was the shortest human-drawn railway in the Japanese Empire. Taishaku Jinsha operated on a seasonal basis. The revenue generated on the day of the Kōshin festival constituted over sixty percent of its annual income. Not surprisingly, it was designed to serve several thousand pilgrims in one day.

Figure 4 Taishaku Jinsha Company Passengers, 1899-1913



The Taishaku Jinsha was designed to serve the region’s specific needs, rather than being a simple replica of the model Zusō. Most of its carriages were manufactured to hold a maximum

<sup>395</sup> In terms of average passenger counts. Based on the numbers gathered from the Ministry of Railway yearbooks (Tetsudōshō nenpō). The first was Kusama Jinsha in Ibaraki Prefecture, and the second was Zusō Jinsha. Tetsudōshō 鉄道省, “Tetsudōshō nenpō 鉄道省年報,” 鉄道省年報, n.d.; Tetsudōshō 鉄道省, 日本鉄道史.

of ten people, exceeding the capacity of the 8-passenger carriages used by Zusō Jinsha.<sup>396</sup> It was also the only human-drawn railway that had a double track, charging five sen for a one-way trip and nine sen for roundtrips. This design aimed at serving flows in both directions in order to reduce the wait time at the festival. The design of the Taishaku Jinsha was straightforward and unique. This was because most contemporaneous major steam railways were constructed as single lines first and had only slowly begun converting to double lines in recent years.

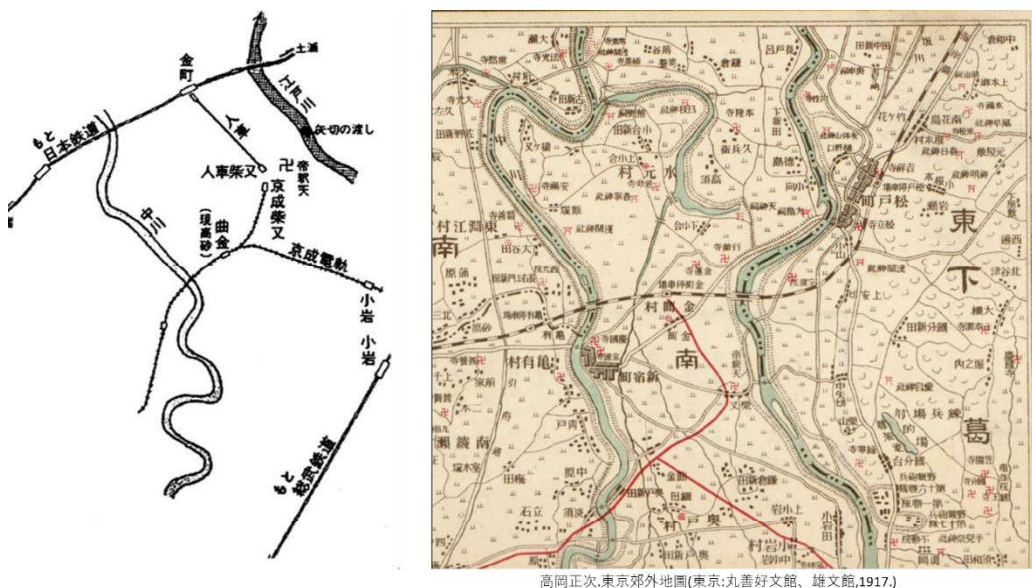
Operating the line depended more on temporary laborers than professional drivers. The company would usually hire labor contractors (*kumikashira* 組頭) instead of individual laborers. Salary statistics show that there were only three regular pullers and 901 temporary pullers, usually hired on the day of Kōshin. These contractors went to neighboring villages and recruited groups of farmers in off-seasons to serve as push-car laborers.<sup>397</sup> Therefore, the operation of the human-drawn railway was dependent on the local agricultural community. The new employment opportunity as pullers brought new elements to the prayer-play economy of the Taishakuten Temple.

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<sup>396</sup> 59 out of the 64 carriages could hold 10 passengers at once (length 6 shaku \* width 4 shaku); 5 carriages had a maximum of 6 people (4 shaku 5 sun \* 3 shaku 8 sun).

<sup>397</sup> Taishaku Jinshatetsudō Kaisha Archive (TJK).

Map 9 The incorporation of Taishaku Jinsha into the Keisei Electric Railway

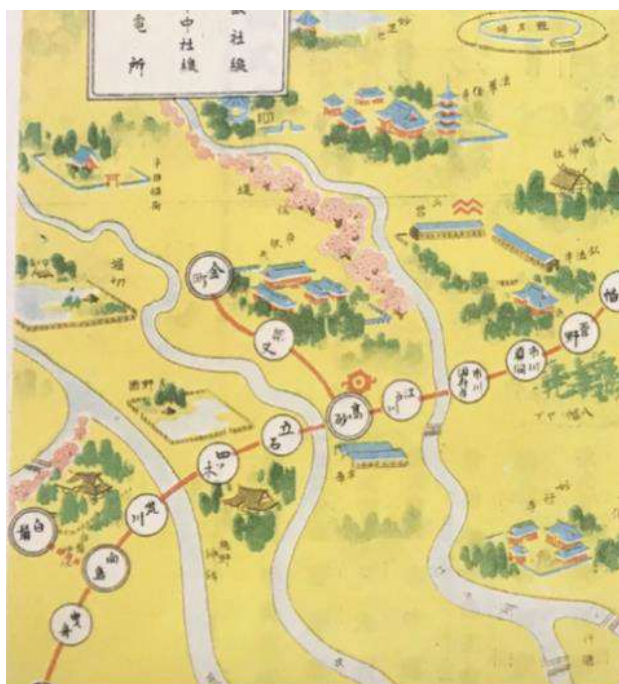


高岡正次.東京郊外地圖(東京:丸善好文館、雄文館,1917.)

The large crowds of incoming visitors to Taishaku added to the fame of the Kanamachi-Shibamata region. Unfortunately, unlike Atami, visitors left few literary records celebrating the experiences of the new Taishaku culture. However, a corporate buyout demonstrates how the human-powered railway had become an integral part of the Taishaku-ten experience. The line helped boost the number of visitors to the traditional temple, which made itself too valuable to let go for a large railway company like Keisei. In 1912, the Keisei Electric Railway Company bought out the Taishaku Jinsha Company, electrified its line, and incorporated it into its network. Map 9 shows the geographical positions of the Keisei Line and the Taishaku Line. As shown, the Taishaku Line was a spur from Keisei's existing trunk road. However, its strategic location connecting the Japan Railway line and the tourism resources of the Taishakuten Temple must have made the Taishaku Jinsha a desirable target. As Map 10 shows, the Keisei Railway Company

continued to feature Taishaku Temple in its route map to attract potential investors.<sup>398</sup> This line had proven to be an integral part of the tourism economy, valuable for both the local community and the larger railway capitals.

Map 10 Map of the Keisei Line and Attractions for Potential Shareholders



Keisei Denki Kidō Kabushiki Kaisha Shin Kabushiki Boshū 1926  
京成電気軌道株式会社新株募集 1926

The buyout of the Taishaku Jinsha was no end to the story. Three years later, in 1915, another group of entrepreneurs from Kasama-chō, Ibaraki Prefecture, established a local human-drawn railway company. Kasama and Taishaku could be indirectly linked through either the Mito Line or the nationalized Jyōban Line. The railway station in Kasama was still located far

<sup>398</sup> Matsuoka Hiroyuki 松岡広之, *Nihon tetsudō an naiki 日本鉄道案内記* (Tokyo 東京: Matsuoka Hiroyuki 松岡広之, 1899); Suisui Shiina 椎名翠水, *Keisei densha ensen annai 京成電車沿線案内* (Chiba 千葉: Kokumin Shinbun Shikyoku 国民新聞支局, 1921). Keisei denki kidō kabushiki kaisha shin kabuken boshū 京成電気軌道株式会社つき新株券募集, 1926 in Taishaku Jinshatetsudō Kaisha Archive (TJK), S17.4.



from the center of town (1.4 km), which featured the Kusama Inari Shrine. Like Taishaku, this project also aimed to connect a local religious/cultural attraction to the national railway. To save on construction costs, the Kasama entrepreneurs purchased 30 retired carriages from Taishaku Jinsha. In this way, three years after the demise of the human-drawn railways in Taishaku, these carriages were revived and went back into active service. The Kasama Jinsha Company operated for another ten years before shifting to gasoline cars. In 1925, Kasama Jinsha sold four human-driven carriages to a nascent human-drawn railway company, the Matsuyama Jinsha Company in Miyagi Prefecture. There, these carriages served for another four years before their eventual retirement as modes of transportation. Human-powered railways had continued to follow regional needs and had surprising longevity.<sup>399</sup>

In sum, unlike Zusō, the Taishaku Human-powered Railway was a product of ordinary people and small-time agents, not the urban elite. Without the support of the rich and powerful, as was the case of Atami, Taishaku Jinsha thrived as a peripheral destination for the urban masses away from the metropole. Moreover, the modern shareholding structure reinforced regional coalitions and forged a new famous place – culturally and economically, by ordinary

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<sup>399</sup> “Kasama Jinsha Kidō Keiei Ni Kansuru Ken Gushin 笠間人車軌道経営に関する件具申,” December 27, 1924, 3C-48-61, National Archives of Japan 国立公文書館; “Fukumeisho Mei Ni Yori Kasama Jinsha Kidō o Shisatsu Ni Tsuki 復命書・命により笠間人車軌道を視察に付,” April 11, 1926, 3C-48-61, National Archives of Japan 国立公文書館. “Matsuyama Jinsha Kidō Tokojō Meireisho 松山人車軌道,” 1922-5-16, “Kidō ni kansuru ukagai 軌道に関する伺い,” 1922-3, “Matsuyama Kidō ni kansuru ken 松山軌道に関する件,” 1924-12-12 in “Miyagi Dentetsu Hoka 8 Sha, Miyagi-Ken, Matsuyama Jinsha Kidō 軌道・宮城電鉄他 8 社宮城県・松山人車軌道,” n.d., 3C-27-76300-050, National Archives of Japan 国立公文書館.

agents. Thus, the development of the Taishaku Jinsha and the Kanamachi-Shibamata regions depended on the small-time local elites' efforts.

## **Conclusion**

The scale of human-drawn railways was dwarfed by the steam railways, yet they were just as crucial in shaping the local community in the modern era. It was first and foremost a local attempt to incorporate small regions into the national modernization project. While large-scale national railways penetrated local communities with new stations, they also stimulated local incentives to fill the interstices left by national plans. However, the establishment of a railway, even a primitive one, still required considerable investment. Cooperation among local elites was essential and also provided an opportunity to develop local economic networks, as shown in the cases of both Zusō and Taishaku Jinsha. The struggle to upgrade human-driven to more advanced forms of energy proved difficult. Even for the affluent entrepreneurs, such as Amamiya Keijirō, converting human power into gasoline cars still took ten years. Local capital in the Kanamachi-Shibamata region, generated mainly by traditional enterprises in agriculture and river transportation, was less capable of making this energy transition.

The unexpected resilience of the human-powered railway proved to be an exceptional chapter in developing the Japanese railway system in the modern era. In many ways, the existence of human-powered railways exceeded the expectation and plans of the state. Japanese railway discourse in the 1890s and early 1900s usually featured heated debates between nationalization and privatization among bureaucrats, politicians, bankers, and businessmen.

While private entrepreneurs enjoyed a second Railway Mania from 1895 to 1905, the bureaucrats aligned their trajectory towards a more efficient national railway network.<sup>400</sup> The founding architects of Japanese national railways, such as Inoue Masaru and Minami Kiyoshi, were aware of how small-medium private railways would fragment the national railway networks. They were also critical of adopting narrow gauge light railways, which would also hamper state mobilization.<sup>401</sup> However, the development of the human-drawn railways could not be folded into this storyline. It was an indigenous form of transportation, which had been designed to serve the “fragmented” regional interests; both the local elites and the state officials recognized its necessity to modern regional development. The regional interests were small enough not to threaten the national project. Yet, they were also critical enough for the local elites to pool resources to fill the geographical and technological interstices.

Finally, the human-drawn railway also helped transform – sometimes altering if not heightening -- regional characters of small localities in Japan. The Zusō Jinsha became a nostalgic symbol of the Atami of the late Meiji period, and the Taishaku Jinsha created a new pilgrimage experience for thousands of ordinary visitors. As modern public transportation, the design of human-power railways did not focus on transport efficiency alone; both cases helped to re-brand the already famous places. The quiet, shaky, and more humane human-driven railways

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<sup>400</sup> Ericson, *The Sound of the Whistle*..

<sup>401</sup> Oikawa Yoshinobu 老川慶喜, *Nihon tetsudōshi. Bakumatsu Meiji hen : jōkisha mokei kara tetsudō kokuyūka made* 日本鉄道史. 蒸気車模型から鉄道国有化まで; 192–97.

branded the region's nostalgic memories. More importantly, they were the making of the small-time, the less funded, and the less privileged.

## CHAPTER 5

### THE UNEXPECTED NETWORK:

### PUSH-CAR RAILWAYS AND THE MAKING OF THE FIRST COLONY OF THE LAST EMPIRE

#### Introduction

Four *daisha* [or tai-che 台車] waited for us at the station. Each *daisha* was pushed by two laborers. We set out with three passengers onboard each cart. These were the regular third-class *daisha*, but the seat was covered with red fabric covers. We learned later that this was an amicable arrangement by the local government of the Daxi Township (大溪郡). The *daisha* climbed slowly, southward through the hills. On the right, we overlooked the lowlands of the Dakekan River. Moving along, we could easily see the riverbank, the forest, the paddy field, the village. Everything looked as small as if it had been a miniature garden, yet the expanse was infinitely vast. After a while, we got out of the flatland. I was utterly wrong to think that it would be all hillsides after we got out of the town of Daxi. What I thought was purely hillside had been countless paddy fields. The *daisha*, which had been slowly sliding, now gained speed as it dashed towards the foot of the hill, cutting right across the paddy fields.<sup>402</sup>

In 1925, Higashi Ikuzō, a secretary from the general affairs bureau of the Taiwan Department of Railways, embarked on an inspection trip to Mount Jiaoban (角板山) deep in the Dakekan Mountains (大科崁山) in Northern Taiwan.<sup>403</sup> It was thirty years into Japan's colonial rule over Taiwan. The colonial state had violently subdued Mount Jiaoban -- the ancestral

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<sup>402</sup> Higashi Ikuzō 東幾藏, "Chaopanshan Yuki No Ishō 角板山行の印象," *Taiwan Tetsudō 台灣鐵道*, September 1029..

<sup>403</sup> Present day Daxi District in Taoyuan.

territory of the indigenous Atayal people and a natural beltway of camphor forests -- into the empire's most important site of the camphor industry. Camphor – a white crystalline substance distilled from camphor trees – had become a highly coveted global commodity. First used as an aromatic insect repellent, camphor had attracted Western traders' attention to Taiwan since 1861. The discovery of celluloid by Alexander Parkes and the rising celluloid industry in the mid-1800s created a more robust demand for camphor as a plasticizer in the production of photographic film and early plastics. After Japan's conquest over Taiwan, the monopoly over camphor production and distribution channels had brought tremendous wealth to the young Japanese empire, as millions of pounds of camphor crystals had been exported to mainland Japan and western metropolises annually since the dawn of the twentieth century.

The territory Higashi surveyed was located literally at the edge of the empire. Starting from Taipei Station, Higashi and his colleagues arrived in Taoyuan via the North-South Steam Railway, which had served as the island of Taiwan's trunk line since 1899.<sup>404</sup> Then from Taoyuan to the town of Daxi, they rode an automobile, a new transportation option in the 1920s.<sup>405</sup> However, to reach the subdued “barbarian land” (*banchi* 蠻地), they had to rely on the human-powered push-car railway, “*daisha*,” or literally, a “platform cart,” which in its most

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<sup>404</sup> The Japanese colonial government started rebuilding the trunk-line in 1899 and finished the main railway in 1908.

<sup>405</sup> Higashi Ikuzō, a typical colonial official, came from Nara, and served as a rank-and-file employee in the Transportation Section of the Department of Railways from 1913-1920, and then the secretary of the general affairs section of the same department from 1920-1926 (Tetsudōbu shomuka 鐵道部庶務課). This bureau was the direct supervising unit for push-car railways. It was a separate unit from that in charge of regular private railways. “Futsū Shiken Gōkaku Sha 普通試驗合格者,” *Taiwan Sōtoku-Fu Kanpō* 台灣總督府官報, May 17, 1919, Taiwan Governor-General Employee Records Database, Institute of Taiwan History, Academic Sinica.

basic form could be as simple as a wooden platform on four wheels, operating on regular narrow-gauge rails. At this moment, hundreds of similar push-car lines were scrawling through both Taiwan's hidden hinterlands as well as some early developed urban areas, such as Tainan and Hsinchu. [Image 16]

Image 16 Typical Push-cars in Colonial Taiwan



Upper left: push-car in 1921, in Department of Railways Taiwan Governor-General Office eds., *Taiwan Railway Bulletin*, Taipei:1921, p.116. Requoted from Photo Library Database, National Taiwan University. URL:

[http://photo.lib.ntu.edu.tw/pic/db/detail.jsp?dtd\\_id=32&id=11426&19&pk=seq&showlevel=2](http://photo.lib.ntu.edu.tw/pic/db/detail.jsp?dtd_id=32&id=11426&19&pk=seq&showlevel=2)

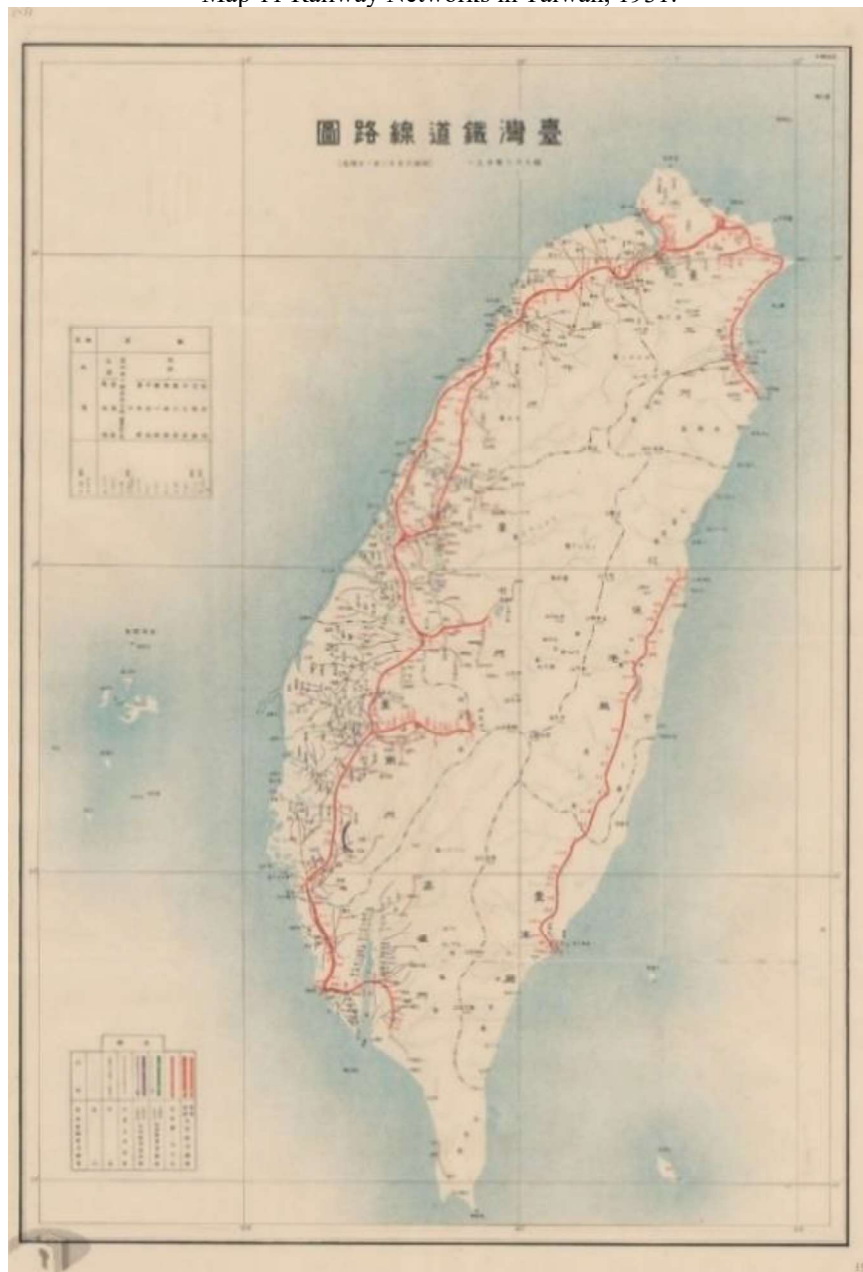
Upper right: Push-car in Mount Jiaoban, Postcard, date unknown. In *Digital Collection of Postcards in the Colonial Period*, National Taiwan University. URL:

<http://cdm.lib.ntu.edu.tw/cdm/compoundobject/collection/card/id/4031/rec/1>

Down left, Push-car in Wushe, original sources unknown.

Down right: push-car in Anping, Tainan, showing push-car in an urban setting, sources unknown.

Map 11 Railway Networks in Taiwan, 1931.



Department of Railways Taiwan Colonial Governor-General Office. National Taiwan Library Collection.

The small dark red lines refer to the push-car network, and some of the private railway networks (indicated by the green lines) were upgraded from push-lines as well. Even by the 1930s, the push-car system was still prominent in colonial Taiwan.



This chapter argues that the human-powered push-car railway was essential to the colonizing and modernizing experience in colonial Taiwan. The push-car railway was both the propellant and the product of the Japanese colonial expansion. It helped subdue and commercialize peripheral regions – mostly hinterlands that were previously stateless and outside of dynastic sovereignty -- into the rule of the empire and the increasingly globalized economy. When Higashi wrote his report, he described the push-car lines as they were cutting through vast farmland across the island, reaching into paddy fields, forests, and mines, where Taiwan’s most lucrative resources could be tapped. As a privileged guest, Higashi got to enjoy a *daisha* seat covered by a soft red cloth. The red fabric was initially an imported commodity manufactured with Western dyeing techniques. In early missions to Dakekan in 1895, the Japanese presented the scarlet cotton fabric as a token of friendship to the Atayal and inducements to commence trade relationships centered on the camphor trees.<sup>406</sup> It symbolized the colonial effort to incorporate aboriginal tribes into its imperial enterprises. Later, the gifts were followed by a combination of violent pacification, punitive embargoes, and commercial exploitation.

The mountain town at Jiaoban exemplified these dynamics. A typical hinterland of colonial Taiwan, it was equipped with a police station, a post office, a school for aboriginal children, a marketplace, and a branch office of the Mitsui General Partnership Company. These establishments formed the benchmarks of Japan’s “civilizing project” in its first formal colony.<sup>407</sup> They would not have adequately functioned without the push-car lines –

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<sup>406</sup> Paul D Barclay, *Outcasts of Empire: Japan’s Rule on Taiwan’s “Savage Border,” 1874-1945*, 2018, 172–74.

<sup>407</sup> The nature of Japanese formal empire and its different forms of colonies (such as Hokkaido and Okinawa) were subject to controversies. There was a parallel between Taiwan and Okinawa, for example, in the ways in which local

predominantly financed by local Han-Chinese gentry and staffed mostly by Han-Chinese coolies -- that made these establishments reachable.<sup>408</sup> As Paul Barclay argues, the dawn of the twentieth century witnessed the rise of high-velocity capitalism, “wherein national populations became dependent upon long-distance trade for daily existence.”<sup>409</sup> Modern local transportation networks comprised of human-powered railways completed the global circulation essential to this global economic structure. Simple and crude as it seemed, the push-car railway helped the young empire’s colonial projects penetrate deep into Taiwan’s hinterland and defined the formative years of modern transport development in colonial Taiwan.

Table 8 Comparison between Japanese and Taiwanese Human-powered Railways

	Japan	Taiwan
Terminology	Jinsha Tetsudō 人車鉄道 Jinsha Kidō 人車軌道 (different from Keibin Tetsudō 輕便鉄道)	Keibin Tetsudō/Qingbian Tiedao 輕便鐵道 Keibin Kidō/Qingbian Guidao 輕便軌道 Daisha/Taiche 台車
Total Mileage	123 kilometers (peak in 1912)	740 kilometers in 1910
Major Purposes (passenger oriented)	Tourism, leisure (shrine or hot spring visits) Industrial transport Serves as a form of public transportation only in rare cases and short span of time (Chiba prefecture)	General public transportation Industrial transport
Gauge	780mm, 530mm	530 mm or less
Common ground	Small-medium private capital investment; Strong regional characteristics	

initiatives and struggles of peasants and smaller producers to maintain if not restore and expand the boundaries of their own subjectivities, labor conditions. See Wendy Matsumura, *Limits of Okinawa: Japanese Capitalism, Living Labor, and Theorizations of Okinawan Community*. (Place of publication not identified: Duke University Press, 2015), <http://site.ebrary.com/id/11024963>.

<sup>408</sup> Most of the coolies mentioned in newspapers had Chinese family names. However, because push-car laborers were usually temporarily recruited, it was hard to conclude that there were no Taiwanese indigenous people who served as push-car laborers.

<sup>409</sup> Paul D. Barclay, *Outcasts of Empire*, 18.

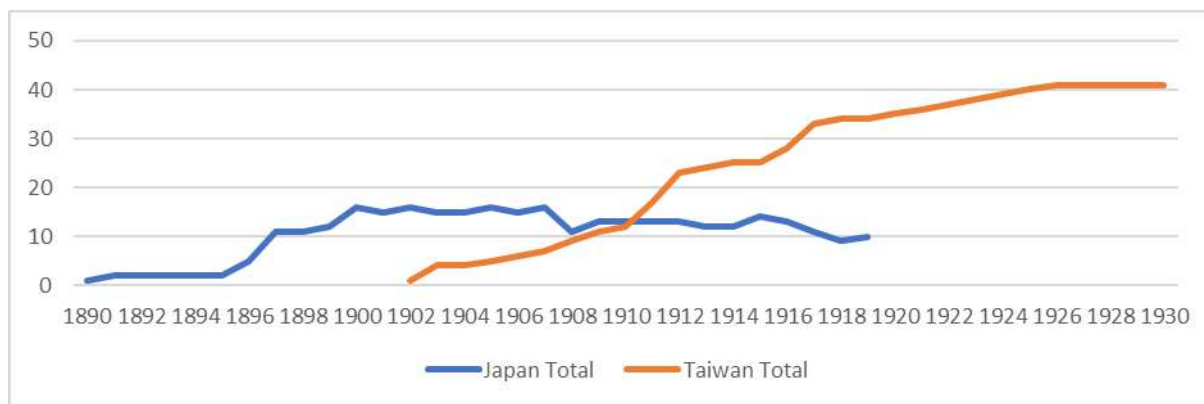
The push-car railways in Taiwan were never a simple replica of their counterpart in Japan. The proliferation, large-scale application, and longevity of the Taiwanese push car railways made them indispensable not just within the Japanese empire but also in the world. The total trackage of the human-powered railway in Taiwan reached 740 kilometers by 1910, almost three times the length of the standard steam railways on the island, and dwarfing its Japanese counterpart, which peaked in 1912 with only 123 kilometers before an irreversible decline.<sup>410</sup> The push-car railway system's traffic peaked in 1927 with more than 5.3 million passengers and 840,000 tons of freight, and its trackage reached a maximum extent of 1,367 km in 1931. It had become the essential transport network that supported the circulation of people and cargo, especially for basic construction and livelihood materials such as stone/gravel, rice, and timber. By 1934, 62 push-car railway companies were on the island, while most of their counterparts in Japan had gone out of business. The smallest company controlled a line just 1.2 km long, whereas the largest owned a network of 104 km with 550 push-cars. In the 1930s, many push-car companies endured the competitive pressure of the burgeoning automobile industry. Some push-car railways were still operating until the mid-1960s. Several lines in old mining areas continued operating as tourist attractions up through the 1980s. English historian and travel writer Owen Rutter marveled at the Taiwanese push-car railways when he and his wife visited Mount Jiaoban in April 1921. "Whoever first thought of opening up the country in this manner was a genius,"

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<sup>410</sup> "Taiwan Sishe Tiedao Xianzhuang 台灣私設鐵道現狀," *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, September 10, 1910; "Quandao Qingbian Tiedao 全島輕便鐵道," *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, September 6, 1910; Zenkoku unyu rengōkai 全國運輸連合会, *Zenkoku Tetsudō Saikin Rihyō 全國鐵道最近哩表* (Tokyo 東京: Zenkoku unyu rengōkai 全國運輸連合会, 1912).

Rutter writes, “for in a land where there are few horses, the push-car line is far more useful than a bridle path would be.”<sup>411</sup> [Table 8 and Figure 5]

Figure 5 Numbers of Human-Powered Railway Companies in Japan and Taiwan



Source: Taiwan sōtoku-fu tetsudōbu 台灣總督府鐵道部( Department of Railways Taiwan Governor-General Office) eds. Tetsudōbu nenpō 鐵道部年報 Department of Railways Yearbook, 1910-1937. 鐵道大臣官房文書課 (Secretariat of Minister of Department of Railways) eds. 日本鐵道史・下編 (History of Japanese Railways Vol. 3 ), Tokyo: Department of Railways, 1921, p. 683-684.<sup>412</sup>

The incorporation of the local economy into global high-velocity capitalism was never a simple top-down process imposed by a strong colonial government. This story of local development diverges from the traditional narrative of Japanese modernization, which concentrates on capital-intensive, state-led initiatives, such as railroads, textiles, and iron, to portray Japan’s efforts to “catch up” to an industrially dominant West.<sup>413</sup> It is essential to

<sup>411</sup> Rutter, *Through Formosa: an Account of Japan’s Island Colony* (London: T. Fisher Unwin Ltd, 1923), 214.

<sup>412</sup> Tetsudōshō 鐵道省, 日本鐵道史, 683–84; Taiwan sōtoku-fu tetsudōbu 台灣總督府鐵道部, *Tetsudōbu Nenpō 鐵道部年報* (Taiwan sōtoku-fu tetsudōbu 台灣總督府鐵道部, n.d.)1910-1937.

<sup>413</sup> Ericson, *The Sound of the Whistle*; Wittner, *Technology and the Culture of Progress in Meiji Japan*.

recognize that both Japan and colonial Taiwan were facing similar development problems in the railway infrastructure sector at the same time. Despite differences in scale and development patterns, the human-powered railways in Japan and colonial Taiwan shared two characteristics: a strong local signature (intimacy with local environment, reconstruction of local cultural geography) and the proactive roles of small-time agents. The coeval-ness of the railway problems— limitation of resources, funding, debates on privatization versus nationalization – profoundly impacted the colonial government’s ability to strategize and implement its colonial plans.

Along the same line, this chapter also analyzes the colonizer- colonized relationship. The human-powered railway industry in Taiwan an ideal case to display the everyday negotiations and compromises inherent in Japan’s first colonial project. The colonial government did not always have clear and robust strategies for its colonies. The colonial railway officials were well aware that human power was considered backward and would not serve the colonial purpose in the long run. However, without enough resources to renovate the transportation infrastructure down to every pathway in the vast hinterlands, they had no choice but to tolerate and adapt to the unexpected development of push-car railway networks. The limitations of the colonial power left local initiatives much room to develop on their own terms. Many local elites, primarily large Han-Chinese gentry families owning agricultural enterprises, found push-car railways an efficient and economical way to articulate evolving local interests. The unexpected rapid development of the push-car industries, in turn, forced the colonial government to enact regulations down to the most trivial details to avoid social disorder. Ironically, these temporary

methods went against Japan's colonial intentions as they consolidated and prolonged the development of push-car railways.

The development of the push-car railway sheds light on the core argument of the “colonial modernity” debate – colonialism and modernization were interrelated, but there was no direct causal relationship between the two. Modernization did not always follow colonialism, nor was the colonized always associated with something meant to be replaced due to incompatibility with imperial strategy. Ka Chih-Ming in *Japanese Colonialism in Taiwan* has demonstrated that colonial domination should not be reduced to the mere juxtaposition of a modern sector – governed by a capitalist mode of production – and an indigenous sector – governed by a pre-capitalist means of production.<sup>414</sup> While Ka concentrated on agriculture (namely sugar and rice production), the example of the push car shows that a similar argument can be proposed for the industrial sector.

The trajectory of the human-powered railway industry in Taiwan further complicates another aspect of the “colonial modernity” theory, which suggests that colonial exploration and modern transport technology that came along with it facilitated the modernization of the colonies at a later stage.<sup>415</sup> The human-powered railway networks that sprawled across Taiwan were never the product of careful engineering by the colonial state. Instead, the prosperity of the push-car lines relied on both small-time Japanese entrepreneurs and colonial subjects -- indigenous people and Han Chinese settlers. The Han Chinese gentry and elites, especially, had interests in

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<sup>414</sup> Chih-ming Ka, *Japanese Colonialism in Taiwan: Land Tenure, Development, and Dependency, 1895-1945* (Boulder, Colo.: Westview Press, 1998).

<sup>415</sup> Kikuchi, *Refracted Modernity*, 1–20.

traditional agrarian industries largely impacted by colonial encroachment. In turn, the human-powered railway system also helped adjoin the fragmented markets of Taiwan, forging new connections across previously scattered communities and reshaping urban spaces. This modernization experience did not “travel” or “transplant” from Japan to Taiwan but was very much home-grown on the colonized island. The use of human bodies as driving forces for human-powered public transportation was a deliberate choice by entrepreneurs, a survival strategy for laborers to earn cash wages, and an administrative challenge that forced governments to react and adapt. Instead of completely replacing these technologies, officials, businessmen, and technicians often adopted partial enhancements to solve the technical problems that caused accidents and inefficiencies.

### **The First Colony of the Last Empire**

Before the Japanese colonial acquisition of Taiwan, this island had long been an active node of global maritime commerce. Located at the junction of several tectonic plates in the tropics, Taiwan features a topographical line of mountains that traverse nearly the entire length of the island. As a result, Taiwan contains several distinct vertical climatic zones; the island is fertile and suitable for growing an estimated 80% of the world’s crop varieties. In 1624, the Dutch East India Company colonized the southwestern part of the island and turned the city of Anping into their trading nexus of deerskins, sugar, and rice with China and Japan. In 1642, the Dutch defeated the Spanish in Keelung, drove them back to Manila, and ended the twelve-year of Spanish rule of the northern tip of Formosa. In 1661, Zheng Chenggong, also known as

Koxinga, led an army of Fukienese soldier-pirates and expelled the Dutch from the island. Escaping the conquest of southern China by the Qing Empire, they established a small kingdom and initiated large-scale military colonization on aboriginal land. In 1683, Zheng's grandson surrendered to Qing, officially placing Taiwan under Qing control, opening the island to massive Chinese (illegal) immigration. Most of the Chinese or Han immigrants scattered on the coastal plains. They initiated settler colonialism which, as in other parts of the world, established a booming agrarian economy based on rice and sugarcane cultivation and encroached on the traditional hunting grounds of aboriginal groups. The camphor trade, used primarily as an aromatic until the 1880s, brought in foreign merchants since the mid-1800s.<sup>416</sup> Taiwan's geographical location in the global maritime trade and its rich natural resources made it a desirable colony for an ambitious empire desperate for resources.

However, from its acquisition of Taiwan, the burgeoning Japanese empire stumbled its way to establishing itself as a colonial power. Taiwan turned out to be more trouble than triumph. The first few years of colonial rule in Taiwan were characterized by aimless drifting in colonial policies, strong martial laws against civil disturbance and guerrilla warfare, and ineffective communication with the local populace due to cultural barriers. Most importantly, establishing and maintaining order was expensive. Between 1895 and 1898, the tenure of three governors-general passed, and Japan had spent ¥16 million to support the administration. Many

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<sup>416</sup> Antonio C Tavares, "The Japanese Colonial State and the Dissolution of the Late Imperial Frontier Economy in Taiwan, 1886-1909," *The Journal of Asian Studies* 64, no. 2 (2005): 361.



officials in the Japanese government even suggested selling the island to France for ¥100 million.<sup>417</sup>

It was not until the tenure of the fourth Governor-General, Kodama Gentarō, and his Civil Administrator, Gotō Shimpei (1898 to 1906), that Japan finalized its imperial plan for Taiwan. Kodama and Gotō's colonial goals were three-fold: to generate enough revenue to ensure the colony's financial independence, to develop Taiwan into a supplier of food and raw materials for the home country, and to turn the Taiwanese into both producers and consumers of commodities as part of Japan's "civilizing mission" (*bunmei kaika* 文明開化). The core of this colonial plan entailed exploiting the island's natural resources to support the rising empire. Therefore, a viable transportation network – especially railways that could transport large cargo volumes -- proved indispensable.

However, the colonial government had little capacity to establish a functioning railway industry. In the British Raj, generations of Britons had earned their fortunes from the East India Company. The EIC stock enriched British parliamentarians and other private capitalists. In a way, Indian revenue had paid for its railway construction. Almost all tracks by 1900 were financed entirely by British private investment capital. The colonial government's "guarantee system" further reinforced the fiscal dependence of India. This system promised its shareholders that the taxpayers of India would offset any loss in railway companies and, in turn, supported

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<sup>417</sup> Chang Han-Yu and Ramon H Myers, "Japanese Colonial Development Policy in Taiwan, 1895-1906: A Case of Bureaucratic Entrepreneurship," *The Journal of Asian Studies* 22, no. 4 (1963): 435.

further development of the private sectors.<sup>418</sup> In other words, the functional British colony – which Kodama and Kotō emulated in Taiwan -- achieved financial independence thanks to the combination of the proactive participation of private capital and a strong state-sponsored credit system. Unfortunately, Japan had neither. Japan’s colonial officials and its capitalists were new to both this land and the railway industry. The Sino-Japanese War and the preparation for the Russo-Japanese War had drained state capital. The state was still stumbling to establish a mature construction, operation, and investment structure for the industry. The difficulty of establishing a viable state-sponsored transportation system in Taiwan reflected the financial conundrum of Japan at that time.

Japanese private or *minkan* capital, too, was grasping for ways to develop capital-intensive infrastructure like railways. The wars did stir up a private railway mania at home, with more than 1,000 railway companies submitting construction petitions within one year after the end of the first Sino-Japanese war.<sup>419</sup> However, Japanese entrepreneurs were even more inexperienced in capital-intensive infrastructure projects like railways, and many ended up in bankruptcy.

The heated debate over the nationalization of railways versus free competition continued for years and was embodied and amplified in colonial Taiwan. The construction of the first North-South trunk steam railway was a case in point. Desperate for a major trunk railway but

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<sup>418</sup> Laxman D Satya, “British Imperial Railways in Nineteenth Century South Asia,” *Economic and Political Weekly* 43, no. 47 (2008): 69–77.

<sup>419</sup> “Dai Shihon Tetsudō No Shutsugan Ga Tsuzuku 大資本鉄道の大資本鉄道の出願が続く,” *Yomiuri Shinbun*, July 7, 1896.

struggling with a lack of capital, the colonial government of Taiwan introduced domestic private equity into its construction plan with little hesitation. The renowned entrepreneur Shibusawa Eiichi took the lead, assembling a group of entrepreneur/investors from Japan and establishing the Association of Industrial Promotion of Taiwan (Taiwan Kōgyōkai 台湾興業会) to finance the new colony. Among the members were Kono Kinroku, Tanaka Heihachi, Ōgura Kihachirō, Yokoyama Magoichirō, who were also the founding shareholders of the Zusō Human-powered Railway Company. These were active entrepreneurs/investors active in the Tokyo-Yokohama area. Kono Kinroku, for example, was the leading figure of the Kōshū Zaibatsu discussed in Chapter 4. Meanwhile, in Japan, these were the same people who strategized to invest in various private railway companies and new energy enterprises such as electricity and gas companies in Japan. However, chapter 4 had shown that even in Japan, these private capitalists still face significant challenges in running their desired enterprises. Their problems at home further impeded their abilities to pull things together in the brand-new industry in the colony. Therefore, even with extensive official support, the association failed miserably in two consecutive fundraising attempts to establish the Taiwan Railway Company. Disappointed by weak and unreliable private capital, Gotō Shimpei eventually decided to buy out whatever was left of the unfinished enterprise and officially take over the construction as a government project. Construction did not start until 1899, five years after the initial plan. In a retrospective report, the

colonial government willingly admitted its mistake in trusting the capability of private enterprise.<sup>420</sup>

The colonial experience in Taiwan cast a shadow over the nationalization of railways throughout the empire, setting the ongoing debate between state monopoly versus laissez-faire competition in the railway industry. In 1899, Gotō Shimpei took a further step and convinced the Japanese cabinet to pass the Taiwan Enterprise Governmental Bond Law (*Taiwan Jigyō Kōsai ho* 台湾事業公債法). This law ensured that the construction of railways, ports, governmental buildings, and the expenditures on land surveys in Taiwan would all be financed by bonds and predominantly led by the state.<sup>421</sup> This law had a more substantial impact that went beyond the colony's boundary. It also marked the beginning of state procurement/buyout of private railway companies, in other words, the nationalization of railway networks across the empire. Even Shibusawa Eiichi himself shifted his attitudes to support state monopoly, which many Meiji officials shared.<sup>422</sup> This position was more evident in colonial contexts, as proved by the state-controlled colonial transportation system in Korea and Manchuria to better serve imperial strategies.<sup>423</sup> On May 11, 1906, less than two months after the Diet approval of the Railway Nationalization Law, Japan celebrated 5,000 miles of railways across the empire. This number

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<sup>420</sup> Taiwan sōtoku-fu tetsudōbu 台灣總督府鐵道部, *Taiwan tetsudō shi* 臺灣鐵道史 (Place of publication not identified: publisher not identified, 1910).

<sup>421</sup> “Taiwan Jigyō Kōsai Ho Go Shomei Genhon Meiji 32 Horitsu No.75 台湾事業公債法・御署名原本・明治三十二年・法律第七十五号,” n.d., National Archives of Japan.

<sup>422</sup> Ericson, *The Sound of the Whistle*.

<sup>423</sup> Oikawa Yoshinobu 老川慶喜, *Nihon tetsudōshi. Bakumatsu Meiji hen : jōkisha mokei kara tetsudō kokuyūka made* 日本鐵道史. 蒸氣車模型から鐵道国有化まで, 194.

included the total mileage of the unfinished South-North Trunk Railway in this state-led achievement.<sup>424</sup>

However, the nationalization of railways meant that the colonial government had to prioritize their infrastructure projects and allocate their limited resources carefully. However, it was hard to attract private capital strong enough to shoulder another construction project like the trunk railways. Moreover, the Governor-General had to bear a heavy financial burden in providing subsidies intended to lure Japanese investors.<sup>425</sup> Therefore, in the short term, neither the colonial government nor major private railway companies in the nation could invest in a viable transportation system that penetrated deep into the mountainous hinterland of Taiwan.

### **The Unexpected Development of Taiwanese Push-car Lines**

The first push-car line, connecting Kaohsiung and Tainan and then extended to Hsinchu, was constructed by the Japanese Army Supply Factory in December 1895, immediately following the annexation of Taiwan. This was only five months after the world's first full-scale human-driven railway, or "*Jinshatetsudō* (人車鉄道)," started operating in Atami-Odawara in the Kanto area of Japan (See Chapter 4). It was chronologically possible that this domestically operated line inspired the colonial army. However, the nature of these two human-powered railways fundamentally differed. The Atami-Odawara line was designed to help tourists get to

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<sup>424</sup> Oikawa, *Nihon tetsudōshi*, 205-215.

<sup>425</sup> Ka, *Japanese Colonialism*.

the famous hot-spring post town of Atami. In contrast, the line in Taiwan was for the purpose of colonial conquest.

Though similar in concepts, the Taiwan push-car industry was never a simple replication of similar endeavors in the Japanese “metropole.” The first push-car line in Taiwan was a military method to expedite military supplies and personnel on an island with only a skeletal transport system. The conquering of Taiwan might lay the ground for establishing the Railway Regiment (*Tetsudō Rentai* 鐵道連隊) in 1896, which was based across the Tokyo bay. The Railway Regiment soon proved its worth in Korea and Manchuria as it expediently built, oversaw, and sped up several railway lines to support military advancement.<sup>426</sup>

It was never the intention of the colonial government to sustain or develop a push-car network in the long term. For the governor-general’s office, push-car railways were nothing more than a temporary solution. Gotō Shimpei, the prominent architect of colonial Taiwan and later the president of the Manchuria Railway, never really mentioned the push-car lines in any of his plans. In 1922, Japan passed the Taiwan Private Railway Subsidy Law (*Taiwan shisetsu tetsudō hojo ho* 台灣私設鐵道補助法). This law stipulated that only railways with a gauge of over 787 mm were entitled to national subsidies, consistent with railways in the Japanese islands.<sup>427</sup> However, almost all push-car light railways had gauges around 515 mm or even less,

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<sup>426</sup> The Railway Regiment adopted the use of 600 mm German Feldbahn (“field [of battle] railway) for logistical support. The Feldbahn system contributed to the rapid victory of German army in the Franco-Prussian War. Free, *Early Japanese Railways, 1853-1914*.

<sup>427</sup> “Shisetsu Tetsudō Hojo Hō Hikaku Chō 私設鐵道補助法比較調” (Zaiseibu 財政部, January 12, 1935), National Archives of Japan 国立公文書館.

so they were excluded from the empire's long-term plan. In the same year, the Department of Railways in Taiwan transferred the direct supervising jurisdiction of push-car railways to prefectural administrations.<sup>428</sup> This arrangement meant that the push-car industry was no longer subject to the empire's colonial planning. Instead, it became a local problem.

While the change of jurisdiction reflected the colonial government's uncertainty over the push-car industry's future, its prosperity exceeded the expectations of contemporary Japanese officials in many ways. In fact, there were many signs that the push-car industry would be doomed to oblivion. The human-powered railways in the Japanese homeland had been either electrified or bankrupted by the end of the 1920s. However, the next decade only saw the rise of the Taiwanese push-car railways. Push-car railways both reflected and interactively defined local interests in ways that went beyond colonial planning.

### **The Push-car Railways as a Technology**

Instead of focusing on capital-intensive steam railway construction, many small-medium entrepreneurs chose to develop push-car railways because the technical specifications made it the most efficient given the limited capital available. One fundamental feature of the push-car railway was the deployment of portable narrow-gauge rails. It appears that Taiwanese planners may independently develop a similar idea to a European model. In the 1870s, M. Decauville Aîné, a French farmer and distiller, invented a portable narrow-gauge railway system to facilitate

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<sup>428</sup> Push-car railways were briefly under the supervision of the army and the Department of Civil Affairs, before the Department of Railways became the direct supervising institute in 1899.

transport across vast agricultural lands. It featured portable railways with ready-made sections of light narrow-gauge tracks, which allowed even the most untrained laborers to carry around and assemble the tracks wherever needed, readily and quickly. The Decauville rails proved especially useful to European powers in their colonial expeditions, sugar plantations, and military campaigns.<sup>429</sup>

The Taiwanese push-car also shared a similar developmental trajectory to the Decauville lines, from its original use on farmland to its extended military application. However, no historical records suggest the direct import of technology or parts from the Decauville company. Instead, push-car companies in Taiwan adopted various gauges based on Taiwan's local environmental and social conditions. Most of these gauges were narrower than Decauville's standard sizes. The core value of the narrow-gauge design, however, was comparable. Its success lay in the fantastic portability of the light rails, which could only nine lb./yard and thus could be easily carried by both men and women and deployed wherever needed.

At an operational level, the portability of push-car lines enabled a fast and flexible construction process that could use every inch between paddy fields or existing agricultural footpaths in the hinterlands. It ensured minimal earthwork with construction materials that were mainly locally available. It saved the trouble of reconstructing a modern road network, which

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<sup>429</sup> The Decauville system was successfully deployed in the French military expeditions to Madagascar and Morocco, the Russian campaign against the Turcomans, and the Tunisian war. Aîné Decauville, "Portable Railways," *Scientific American Supplement*, no. 446 (July 19, 1884).



would have taken years to plan and build.<sup>430</sup> Moreover, there were no gauge limits for push-car lines. This meant that anyone who applied to construct a new push-car line could simply lay tracks on regional roads without submitting a separate petition to construct specialized roads per its gauge size—which was mandatory for regular railways.<sup>431</sup> Such flexibility also enabled push-car railways to integrate existing premodern footpaths into the modern transportation system.

With minimal technical and financial requirements to function, push-car lines were up to the transportation demands of the new colony. The average push-car railway could reach 9km/h, faster on slopes, with a maximum capacity for four passengers or 350 kg of cargo. This transportation capacity, though limited, still outperformed the existing transport option, oxcarts, which could only carry small quantities of resources through the rough and narrow local footpaths.<sup>432</sup> It was cheaper, too. Oxcarts charged 83 sen to carry 500 kilos of cargo over one mile, whereas five coolies cost only 50 sen for the same amount and distance.<sup>433</sup> Moreover, on the light narrow-gauge lines, human labor was more viable than other options – animal labor or combustible energy. The former was hard to control on environmentally complicated terrain, while the latter required more considerable capital, skilled personnel, and complicated engineering. It was also easier and cheaper to recruit local laborers than well-trained railway

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<sup>430</sup> Tsai Lung-pao 蔡龍保, “Rizhi Chuqi Taiwan de Daolu Shiye 日治初期臺灣的道路事業,” *Guoshiguan Xueshu Jikan* 國史館學術集刊, no. 7 (March 2006): 85–129.

<sup>431</sup> Kagayama Ikumitsu 加賀山生光, “Shisetsu Tetsudō Mandan 私設鐵道漫談,” *Taiwan Tetsudō* 台灣鐵道, no. 236 (February 1, 1932): 14–16. Kagayama was secretary of the General Affairs Office of the Department of Transportation in Taiwan in 1931.

<sup>432</sup> Push-car entrepreneurs petitioned several times to local prefectural governments to restrict the activities of oxcarts.

<sup>433</sup> “Zuixin Diaocha Zhi Yunfei Biao 最新調查之運費表,” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, July 13, 1906.

technicians. In 1915, the average fee for a one-person push-car per mileage was around 5 sen, while the price for state-railway and private locomotive-driven railways were around 2 sen and 3 sen, respectively.<sup>434</sup> Despite the slightly higher rate, though, push-car lines were indispensable in places unreachable by other modern alternatives.

Table 9 Gauge sizes for different railways

Regular steam Railways	1435mm (3 shaku/chi 6 sun/cun )
Light Railways (steam power)	780mm (2 shaku/chi 6 sun/cun)
Human-powered light railways in Japan	Mostly 780mm (2 shaku/chi 6 sun/cun)
Human-powered light railways in Taiwan	530mm (1 shaku/chi 7.5 sun/cun) or narrower. (A variety of gauge sizes: 2 shaku, 1 shaku/chi 5 sun/cun, 1 shaku/chi 4 sun/cun, 1 shaku 42 sun, 1 shaku 43 sun)

### Redefining Regions in Colonial Taiwan

The end of push-car's military function only marked the beginning of the golden age of privately-run push-car lines throughout colonial Taiwan. By 1908, the gradual replacement of the military push-car line by the South-North Steam Railway was complete, running along the same route, but the push-car system took off and grew from 267 km in 1909 to 1,087 km in 1916. In the 1920s – when electrified trains had been prevailing for more than two decades in Japan and

<sup>434</sup> Taiwan sōtoku-fu tetsudōbu 台灣總督府鐵道部, “Taiwan Tetsudō Oyobu Kidō Jikan Chingin Oyobu Ritei Hyō 1915 臺灣鐵道及軌道時間、賃金及哩程表 1915,” 1915.

worldwide -- the development of the push-car system in Taiwan quickly recovered and grew even more vigorously. At this point, both the colonial government and local elites promoted railway regional transportation interests to fill the gaps in the colonial state-sponsored transportation system.

The exploitation of natural resources in the hinterland depended heavily on complex relationships not only between the colonial government and the private sectors but also between various groups on the island. On the eve of Japanese colonial rule in 1895, the island was fragmented by multiple ethnic groups with distinct but sometimes permeable geographical and cultural boundaries. Different communities dotted the island's coastal plains and mountains as interiors, and they had few.<sup>435</sup> The Han communities consisted of two major "subethnic" groups: the Hoklo (*Minnanren* 閩南人) from Fujian Province and the Hakka (*Kejiaren* 客家人) from part of Fujian and Guangdong provinces. There was never a single and integral community for the Han settlers. Instead, they usually organized themselves based on familial or trans-local organizations and sometimes were in conflict and competition with one another. In some cases, Han settlers also adopted indigenous dress and customs through intermarriages. Others "went native" entirely. The aboriginal groups had a similar level of complexity. The late imperial Qing categorized three groups based on the aboriginal tribes' relationship to the Qing state and the level of acculturation to the Han settlers' culture – the "cooked savages" (*shoufan/jukuban* 熟番)

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<sup>435</sup> During the Qing dynasty, there were official categories based on the occupation of immigrant groups, such as peasants (*nongfu* 農夫), land reclaimers or "patent holders" (*kenhu* 墾夫), camphor workers (*naoding* 腦丁), and merchants (*shang* 商).

or plains aborigines (*pingpuzu/heihozoku* 平埔族), the “raw savages: (*shengfan/seiban* 生番) or mountain aborigines (*gaoshanzu/kōzanzoku* 高山族), and the “transformed savages” (*huafan/kaban* 化番) somewhere in-between on the spectrum.<sup>436</sup> The arrival of the Japanese imperial and their colonial expansion both depended on and destabilized the existing geographical, cultural, and social fragmentation of the island.

The popularity of push-car railways in Taiwan demonstrates the unexpected ways in which regional interests pushed forward the imperial project. Financed predominantly by small-time entrepreneurs and local capital, primarily by Chinese settlers, the development of the push-car industry relied on local entrepreneurs carefully interweaving colonial goals and local interests. In some cases, the new technology even prioritized local interests over that of the colonial agro-industrial plans. In the end, however, push-car railways did facilitate the commercialization of the natural resources of Taiwan by solving the imperial project’s most challenging circulation issue. Coal mined in the North had to be relocated to support the rising Japanese sugar economy in the South; export-oriented rice from the Taichung area had to find its way to trading ports to transfer it to Japan. The North-South steamway alone could not meet the needs of industrial transportation, especially from the Central and Southern regions where

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<sup>436</sup> The indigenes consisted of three groups, based roughly on their acculturation to the settlers’ culture and their relationship to the state. The “cooked savages” (*shoufan/jukuban*) or plains aborigines (*pingpuzu/heihozoku*), practiced settled agriculture, paid taxes in kind, and performed military duties for the state. The “transformed savages” (*huafan/kaban*) were an ephemeral, transitional category applied to indigenes who were in the process of being “cooked.” The “raw savages” (*shengfan/seiban*), or mountain aborigines (*gaoshanzu/kōzanzoku*), lived on or beyond the savage border and had minimal contact with the settler society or the imperial state. Ka, *Japanese Colonialism in Taiwan*, 1.

manufactured goods were stockpiled in warehouses. Push-cars did help the Japanese imperial power in the creation of a self-sustaining colony.

The geographical distribution of push-car railways concentrated on places that attracted little notice from either the colonial state and the domestic agro-industrial companies, which significantly departed from the grand colonial plans. The push-car industry predominantly thrived in areas north of Taichung. This was in the opposite direction from the sugarcane-rich South, which was prioritized by the colonial state. The governor-general office allocated most of its resources to southern Taiwan, where Japanese sugar companies cooperated closely with the colonial state to penetrate the indigenous socioeconomic structure and expel foreign capitalists. Railway statistics show that Taipei, Hsinchu, and Taichung, three major prefectures in Northern Taiwan, had the highest percentages of freight transportation by push-cars; each was higher than cities in the South and the East.<sup>437</sup> Although equipped with slightly less trackage than Tainan, Taipei Prefecture had the highest percentage of cargo transportation. The top three products transported by push-car railways, as Table 10 shows, were camphor, tea, and coal, all of which were concentrated in the mountainous areas and lowland forests of Northern and Central Taiwan.

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<sup>437</sup> Statistics based on data collected from multiple years of Taiwan sōtoku-fu tetsudōbu nenpō 台灣總督府鐵道部年報 (Department of Railways Yearbooks).

Table 10 Percentage of Different Products Transported by Push-Car Railways over the Annual Production

	Rice	Sugar	Firewood	Coal	Camphor	Salt	Tea	Limber
1912	3.57	4.82		0.29	35.66	10.35	18.36	
1913	5.37	1.92		1.63	39.12	5.96	19.19	
1914	5.34	2.37		2.71	46.67	4.35	23.83	
1915	7.82	1.94		10.83	70.5	9.42	23.27	
1916	7.52	1.6	3.04	14.53	75.12	4.72	28.4	
1917	7.11	4.44	1.44	17.02	78.49	9.9	27.36	
1918	8.24	4.16	2.59	17.56	58.59	6.64	31	
1919	6.95	5.7	1.2	17.31	48.2	9.04	38.67	
1920	6.73	2.3	0.84	18.22	42.02	13.54	49.22	
1921	5.51	1.72	1.05	11.45	70.62	6.86	56.25	31.77

Table 11 Provincial Distribution of Total Mileage, Cargo, and Passengers of Push-Car Lines

Province	1922			1923			1924			1925			1927		
	Mileage	Cargo	Passengers	Mileage	Cargo	Passengers	Mileage	Cargo	Passengers	Mileage	Cargo	Passengers	Mileage	Cargo	Passengers
Taipei-shū	15.4%	47.0%	19.9%	16.4%	47.0%	17.4%	15.3%	43.8%	16.5%	14.6%	43.2%	16.0%	13.0%	36.5%	5.8%
Hsinchu-shū	32.7%	23.9%	25.7%	26.9%	25.7%	25.7%	33.4%	22.4%	24.3%	32.1%	23.5%	22.8%	31.4%	29.5%	21.5%
Taichung-sh	25.0%	22.0%	30.3%	27.8%	19.1%	26.3%	24.7%	25.1%	25.1%	24.7%	23.8%	22.7%	30.2%	22.5%	31.5%
Tainan-shū	17.5%	5.2%	18.7%	18.1%	6.3%	24.1%	19.2%	6.7%	26.3%	21.4%	8.0%	30.6%	19.4%	10.2%	31.4%
Kaohsiung-s	4.1%	1.6%	5.2%	6.3%	1.7%	6.1%	5.9%	2.0%	7.6%	5.7%	1.4%	7.5%	6.0%	1.3%	9.7%
The East	5.2%	0.2%	0.2%	4.6%	0.3%	0.5%	1.5%	0.1%	0.2%	1.4%	0.1%	0.4%	0.0%	0.0%	0.0%

Source: Taiwan sōtoku-fu tetsudōbu nenpō 台灣總督府鐵道部年報, 1922-1927.

The relative absence of push-car railway in the South was not attributable to the negligence of the colonial state. On the contrary, the colonial state prioritized push-car lines in the South very early to support the cornerstone of their rule: the sugar industry. Local Han-Chinese oligarchic sugar merchants had controlled the sugar industry in Taiwan before the arrival of Japanese colonists. Most of these sugar merchants, such as the Chen family in Taikaw, were Chinese settlers from the southwestern coast of China. They had accumulated substantial

capital with a mature network of guilds through years of long-distance trading. However, their stronghold enterprise was late to introduce modern technology such as refining machines because it relied heavily on native sugar merchants, processors, and guilds who would rather boycott than accept such innovation. The Japanese tried to convert local compradors into their own agents. They contacted sugar producers without mediators, but the most straightforward way to penetrate the sugar industry was to participate directly in sugar milling and refining. With substantial governmental subsidies and administrative support from the colonial state, the Japanese sugar oligarchs founded sugar cartels quickly.<sup>438</sup> The modern Japanese sugar mills, however, faced the challenge of transportation efficiency. Tons of sugarcane procured from the logging fields were stockpiled and then decayed on the slow-moving ox carts before reaching the remote state-built railway stations. By the time these sugarcanes were transferred from the station and reached sugar mills, they had already lost their valuable juiciness and freshness, which directly impacted refining efficiency. In response, the fifth governor-general, Sakuma Samata, urged the army to transfer leftover military rails in their inventory to the governor-general's office to strategize the distribution of resources.<sup>439</sup> Most of the tracks went to the

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<sup>438</sup> Through moneylending to the sugarcane producers and processors and direct control of sugar and cane production, independent (non-comprador) native merchants in Taikaw and Taiwan-fu were able to procure sugar at very low prices compared to those that foreigners obtained from compradors. The same native merchants were also familiar with the Japanese market and thus undersold foreign competitors who carried Taiwanese sugar to Japan and the mainland market, which eventually outcompeted Western merchants. On the other hand, these native oligarchic sugar merchants, such as the Chen family in Taikaw, had a formal business relationship with the Westerners, which helped perpetuated their comprador status and protected them from the harassment of bureaucrats. The Japanese founded modern, large-scale sugar mills particularly after 1906, during the Japanese economic boom. The native sugar merchants were forced to shift to small- and medium-scale sugar milling. Ka, *Japanese Colonialism in Taiwan*, 63-65.

<sup>439</sup> “Keibin Re-Ru Oyobu Fuzokuhin o Taiwan Sōtokufu He Hōkan Tankan No Ken 軽便レール及付属品を台湾総督府へ保管轉換の件,” October 1909, 陸軍省壹大日記, National Archives of Japan 国立公文書館.

Japanese-founded sugar mills in the South. By February 1902, even before the completion of the trunk railway, the Japanese financed Taiwan Seitō Company completed two push-car lines of a total of 6.4 km using these military rails. These lines were driven mainly by local laborers as well as cows, mobilizing all available “lively capital.”<sup>440</sup> It was the beginning of a viable transport network sprawling across the sugarcane fields that came to be known as “sugar railways” (*Tōtetsu* 糖鐵), all constructed by different sugar companies as an essential part of the industry.

However, these sugar railways in the South did not develop into a push-car network as extensive as that in middle and northern Taiwan. The most straightforward reason was that Japanese-funded sugar mills had enough capital and motivation to upgrade these push-car lines. The nature of the sugar industry was sensitive to transport efficiency because sugar refinement depended heavily on the freshness of sugarcane. The sugar industry also enjoyed higher priority in colonial planning. With substantial governmental subsidies and policy support, Japanese sugar companies were slowly able to upgrade push-car lines to locomotive-driven light railways.<sup>441</sup>

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<sup>440</sup> Watanabe Keiichi渡邊恵一, “Shokumin Jiki Taiwan Seitōgyō Niokeru Kansho Unyu植民時期臺灣製糖業における甘蔗運輸,” *Keiei Shigaku 経営史学* 52, no. 1 (2017): 27. Concept of “lively capital” see Haraway D (2012) Value-added dogs and lively capital. In Kaushik Sunder Rajan, *Lively Capital: Biotechnologies, Ethics, and Governance in Global Markets* (Durham: Duke University Press, 2012), 93–120.

<sup>441</sup> In addition to direct governmental subsidies to sugar capital, the colonial government also invested heavily in the construction of the irrigation system and land reclamation project to encourage sugar production, guaranteed a favorable profit rate of private investors to attract Japanese investment and encouraged renovation of native mills. In 1905, the colonial state enacted a new regulation that designated exclusive territories for cane procurement to Japanese sugar cartels. By dividing cane-growing land into areas for cane procurement assigned to individual modern sugar factories, this regulation created monopoly power for the factories, undermined the bargaining power for farmers, and eliminated the native sugar merchants as competitors. Japanese companies began to merge with and restructure the indigenous modern mills in 1909 and by 1911, only one of the Taiwanese out of six survived but with submissive managerial rights to the Japanese interests. Ka, p. 75-80.



Things were different in the camphor-rich North. The emergence of celluloid industries in the 1880s significantly raised the price of camphor on the global market. Unlike the sugar trade, which had been predominantly focusing on the China market due to competition from Euro-American plantations, the camphor trade had attracted global capital since the 1880s. By the time Japan took over Taiwan, Taiwan had produced 77% of the world's camphor, and over half of the industry was financed by a handful of foreign firms that advanced capital to inland producers.<sup>442</sup> However, the Western capitalists had to rely on Chinese settlers, mostly Hoklo (*Minnanren*) from Fujian Province and the Hakka (*Kejiaren*) from part of Fujian and Guangdong provinces, for their comprador services as well as the production of camphor.

Additionally, the procurement and distilling of camphor required regular incursions into Aboriginal territories. The Chinese settlers had secured their access to camphor forests through active negotiation with different aboriginal groups, aggressive campaigns, and a system of frontier guards.<sup>443</sup> Most of the frontier guards were Han Chinese and “cooked savages” who had somewhat acculturated to the settlers’ culture. Influential local settlers’ families, such as the Lins of Wufeng, had developed local troops and controlled the network of frontier guards to secure their profits from the camphor trade, and at the same time, also acted as mediators with Western

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<sup>442</sup> He Feng-jiao 何鳳嬌, “Akashi Shotarō Zai Taiwan de Zhangnao Jingying 赤司初太郎在台灣的樟腦經營,” *Taiwan Xue Yanjiu* 台灣學研究, no. 16 (December 2013): 1–40. Push-car statistics based on data from Table 3. Tavares, “The Japanese Colonial State and the Dissolution of the Late Imperial Frontier Economy in Taiwan, 1886-1909,” 363.

<sup>443</sup> In addition to frontier violence and territorial incursion, Chinese communities often traded guns, beads, salt, and other luxury items with Aborigines in exchange for various mountain and forest product as well as safe passage into Taiwan’s Indigenous heartland, which came to be known as “mountain fee.” Toulouse Antonin Roy, “‘The camphor question is in reality the savage question’: indigenous pacification and the transition to capitalism in the taiwan borderlands (1895-1915),” *Critical Historical Studies* 6, no. 1 (2019): 132; Tavares, “The Japanese Colonial State and the Dissolution of the Late Imperial Frontier Economy in Taiwan, 1886-1909.”

capitalists. The growing demand for camphor and the arrival of the Japanese colonizers, however, stimulated a larger scale of state expansion beyond the frontier borders that were previously outside of the formal reach of the Qing civil administration.

Therefore, when Japan took over Taiwan and tried to penetrate the camphor trade, colonial administrators faced a more complicated and challenging situation than in the sugar-rich South. The young colonial state needed to conquer the vast expanse of unincorporated forestland, modernizing the preexisting architecture of camphor production and expelling Western merchants from the camphor trade. They allocated substantial expenditures to isolate, disarm, and acculturate aborigines. However, their conquest of the highlands was still a slow-moving enterprise due to a significant degree of indigenous resistance. In 1899, after three years of pacification campaigns, the governor-general's office forcibly monopolized the camphor trade. The colonial monopoly system allowed only government-sanctioned enterprises to produce camphor, which then had to be sold to the government Camphor Bureau (*shōnō kyoku* 樟腦局) at a price set by the colonial government.<sup>444</sup> This monopoly system produced enough revenue to sustain the colonial government of Taiwan and secured its fiscal independence from Japan.<sup>445</sup> In 1900, camphor accounted for 66.9% of total revenues from combined monopoly industries and stayed consistently at 30% to 50% until 1907.<sup>446</sup> To ensure long-term access to the steadily

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<sup>444</sup> By 1899, there were six major Camphor Bureau offices, locating in core production areas like Taipei, Hsinchu, Miaoli, Taichung, Zhushan(Nantou County), and Luodong (Yilan County.) The extensive web of governmental supervision also included the police to inspect licenses, monitor the quality of camphor produced or equipment used.

<sup>445</sup> Kotama and Gotō set up monopoly bureaus for salt, opium, tobacco, and camphor, which helped make Taiwan fiscally independent of Japan by 1905. Han-Yu and Myers, "Japanese Colonial Development Policy in Taiwan, 1895-1906," 446.

<sup>446</sup> Roy, "The camphor question is in reality the savage question," 151.

diminishing resource of camphor forests, however, the colonial state still needed to push further into aboriginal territories, which stimulated constant resistance. The total number of confrontations between 1896 and 1909 was as many as 2767. The Aboriginal death toll reached more than 10,000 during 1909-1914.<sup>447</sup>

The state monopoly on camphor complicated the relationship between the colonial government and local Chinese settlers, especially powerful elites. In 1899, the Japanese capital represented 51.84% of camphor production. By 1912, the number grew to 90%. It stayed within the 80% range in the ensuing years until 1919, when the quasi-state-run “Taiwan Camphor Corporation” amalgamated almost all producers.<sup>448</sup> The encroachment of the colonial state certainly put tremendous pressure on the local Chinese elites, who had relied on the camphor trade. Under the monopoly structure, they needed to obtain special permits from the colonial government to continue the procurement and production of camphor. As the camphor forests were depleted and the logging border pushed further to the interior, these Chinese enterprises also had to depend on the colonial government to offer military protection in case of sabotage due to aboriginal uprisings.<sup>449</sup> The colonial government found these Chinese settlers indispensable to their colonial plan, especially in the early years. They needed to rely on the Chinese’s expertise and experience from years of interaction with the indigenous people and land. Most importantly, the colonial state had already spent most of its funds on pacification

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<sup>447</sup> Barclay, *Outcasts of Empire*, 100.

<sup>448</sup> Roy, “The camphor question is in reality the savage question’,” 144.

<sup>449</sup> Teraya Hiroshi 照屋宏, “Kidō Gyōsha Ni Nozomu 軌道業者に望む,” *Taiwan Tetsudō 台灣鐵道*, May 1, 1920; “Kidō Gyōsha Konwa Kai 軌道業者懇話會,” *Taiwan Tetsudō 台灣鐵道*, May 1, 1920.

campaigns and subsidies to modernize camphor production. Although they restricted the camphor business to the monopoly structure, Japanese colonial officials permitted Taiwanese elites to facilitate camphor circulation. The construction of camphor transport networks, therefore, mostly fell on local Chinese settlers in Taiwan.

Unlike in the sugar-south, where Han settlers were in direct competition with the intruding Japanese sugar companies (and were later forcibly subdued to the colonial enterprises), the camphor-north witnessed a more collaborative relationship between the Han elites there and the colonial state. The push-car railway was a crucial yet hidden factor in the success of the colonial monopoly over the camphor trade. Roughly seventy percent of camphor was transported by push-car railways within the island.<sup>450</sup> Most of the push-car railways, running through camphor production forests in Central-Northern Taiwan, were operated by the same group of influential local families that had obtained colonial permission for camphor production. The Taoyuan Light Railway Company was one such case. Established in 1903, it was not only the earliest push-car railway company but also had the highest percentage of Taiwanese shareholders.<sup>451</sup> Founders Jian Lang-shan, Lin Guo-bin, and Lin Chia-Chung were each local gentry from Daxi and Taoyuan with a shared native place of Zhangzhou, Fujian Province. Since the late Qing Dynasty, these families had been in the camphor business and had been skillful in dealing with Taiwan's wilderness. Mount Jiaoban, mentioned in the introduction, was among the

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<sup>450</sup> He Feng-jiao 何鳳嬌, "Akashi Shotarō Zai Taiwan de Zhangnao Jingying 赤司初太郎在台灣的樟腦經營." Push-car statistics based on data from Table 3.

<sup>451</sup> Wang Xue-xin 王學新, "Rizhi Qianqi Taoyuan Diqu Zhi Zhinao Ye Yu Fandi Tuozi 1895-1920 日治前期桃園地區之製腦業與蕃地拓殖 1895-1920," *Taiwan Wenxian* 台灣文獻 63, no. 1 (March 2012): 58–100.

major camphor production areas and was subsidized through a combination of violent conquest and forced settlement of indigenous peoples.<sup>452</sup>

These Han elites also proactively sought to enhance their relations with the colonizers. In 1920, Jian Langshan restructured the company and expanded it under the name Taoyuan Track Shareholding Company. He also recruited two Japanese nationals as significant shareholders, Iwase Keizō and Yoshiichi Yonetarō. Both were close with Sakamoto Soroya, a prominent figure in colonial Taiwan, who, among other significant involvements in Taiwanese enterprises, was also the executive manager of Zhanghua Bank.<sup>453</sup> The recruitment of these two Japanese nationals happened in the same year that Sakamoto had promoted them to directors of Zhanghua Bank. Therefore, Jian Langshan's recruitment of Iwase and Ishiichi proved a prescient move, as the Zhanghua Bank later became the second-largest shareholder of the Taoyuan Track Shareholding Company.<sup>454</sup> The company also expanded its business several times while collaborating with Japanese colonizers.<sup>455</sup>

The capitalization of push-car companies highlights the industry's local nature. By 1920, the percentage of Taiwanese capital investment in the push-car railway companies was

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<sup>452</sup> Ibid.

<sup>453</sup> Sakamoto and Iwase both came from Toza (Kōchi), and Yoshiichi was Sakamoto's junior fellow Kansai Law School (*Kansan Horitsu Gakko* 関西法律学校), which showed another layer of regional character/coalition.

<sup>454</sup> "Taoyuan Guidao Chengli 桃園軌道成立," *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, January 8, 1920. Chen Chia-hao 陳家豪, "近代台灣人資本與企業經營: 以交通業為探討中心 (1895-1954) (The Taiwanese Capital and Business Performance in the Modern Period: Focusing on the Private Transportation Industry 1895-1954)." (PhD diss., National Chengchi University, 2013), 76-77.

<sup>455</sup> "Dabei Qingtie Kaiyeshi 打北輕鐵開業式," *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, October 25, 1907; "Taoyuan Zazu: Qingbian Tiedao 桃園雜俎: 輕便鐵道," *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, July 10, 1910; "Taoyuan Jinshi: Qingtie Kuozhang 桃園近事: 輕鐵擴張," *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, August 30, 1911.

considerably high, which was exceptional in the Japanese empire [Table 12]. In Korea, for example, Japanese private capital was more experienced and predominantly controlled the railway industry, leaving no space for the local Korean capital to participate.<sup>456</sup> The opportunity to invest local capital in the railway industry was indeed a rare “privilege” at a time when the colonial apparatus was eroding not only the economic structure but the local cultural nexus of power of Taiwan. By this time, Japanese agro-industrial companies had successfully infiltrated and redefined the economic structure of Taiwan through a combination of generous government subsidies, tariff production, central bank loans, and active private investment. However, such penetration mainly focused on critical resources (such as sugar and camphor) and the upper level of the modernized production industry and trading. The direct production of agriculture still lay on indigenous peasant producers.<sup>457</sup> The strong Han families in each region rooted their local influence in the development of agricultural industries. Thus, they were able to articulate their interests where the control of Japanese capital was relatively attenuated. The governor-general office issued a regulation in 1912 forbidding the adoption of the term “*Kaisha*” (company) for any companies based solely on Taiwanese capital. However, the Taiwanese elites were strong enough to find a way to circumvent the restriction. They did so by absorbing small portions of Japanese capital to legitimize their enterprises.

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<sup>456</sup> Chen Chia-hao 陳家豪, “近代台灣人資本與企業經營：以交通業為探討中心（1895-1954）”, 71.

<sup>457</sup> Ka, *Japanese Colonialism in Taiwan*.

Table 12 Sources of Capital for Major Push-car Railway Companies in 1920

Company	Region	Established Date	Taiwanese Capital	Japanese Capital in Taiwan	Japanese Capital in Japan	Total number of stocks	Registered Capital (Yuan)
Jilong Qingtie Zhushihuishe	Jilong	1912-02	45%	55%	0%	4000	200000
Taiwan Guidao Zhushihuishe	Taoyuan,Xinzhu	1919-10	34%	59%	6%	60000	3000000
Dazheng Tankuang Guidao Zhushihuishe	Taoyuan	1919-12	0%	100%	0%	14000	700000
Taoyuan Guidao Zhushihuishe	Taoyuan	1903-11	100%	0%	0%	30000	1500000
Taoyuan kuangye Zhushihuishe	Xinzhu	1917-12	99%	1%	0%	6000	300000
Da'an Guidao Zhushihuishe	Miaoli	1917-05	34%	45%	22%	3200	160000
Taizhong Qingtie Zhushihuishe	Taizhong	1918-06	61%	23%	16%	10000	500000
Taiwan Yunshu Chanye Zhushihuishe	Taizhong	1918-03	100%	1%	0%	4000	200000
Nantou Qingtie Zhushihuishe	Nantou	1914-11	32%	69%	0%	2400	120000
Taiwan Qingtie Zhushihuishe	Tainan	1913-10	95%	5%	0%	4000	200000
Tainan Diantie Zhushihuishe	Tainan	1916-07	48%	52%	0%	2500	125000

Source: 台灣總督府官房調查課(Investigation Bureau of Taiwan Governor-General Office) eds. 台灣總督府第 23 統計書(Statistics of Taiwan Governor-General Office), (Taipei, 1921): 544-553

The middle regions of Taiwan demonstrated how local elites explored new opportunities for themselves despite strict colonial restrictions. Unlike the trade in sugar and camphor, where Japanese capitalists had established firm control with governmental support, the rice sector and other subsistence goods for domestic consumption were left relatively untouched by the penetration of Japanese entrepreneurs and companies. Meanwhile, the field of subsistence agricultural industries happened to be the traditional stronghold of the powerful Han settler families, where they had the willingness and the ability to sustain and even expand their local interests. As it turned out, these areas were also where the push-car railways flourished. As a young urban center, the hinterland near Taichung (Nantou, Douliu) was an important site of rice production. Most rice transported by push-car railways in the 1910s and early 1920s was

subsistence rice controlled by small-scale merchant-millers in the localities.<sup>458</sup> However, the traditional northbound route to Taipei and Keelung involved too many transfers. This not only drove up transportation costs but also led to staggering storage bills.<sup>459</sup> For the colonial officials, the Anping port, which was closer, was the optimal site to ferry rice to Japan. For local elites, building a south-bound light railway would help them keep the rice flow within their sphere of influence without relying on outside resources. Thus, the establishment of the Taichung Railway Company was the result of a tacit consensus. Local elites submitted a petition to this end in 1906. The provisional governor of Taichung Prefecture, Okamoto Taketeru, co-opted the proposal into his construction agenda and solicited a larger group of local gentry to facilitate creating a 13-member committee involving both Japanese entrepreneurs and Taiwanese elites. Among the committee members were the famous Lin Hsian-Tang and Lin Ji-Shang, essential members of the most significant local gentry lineage, the Lin Family from Wufeng, Taichung.<sup>460</sup>

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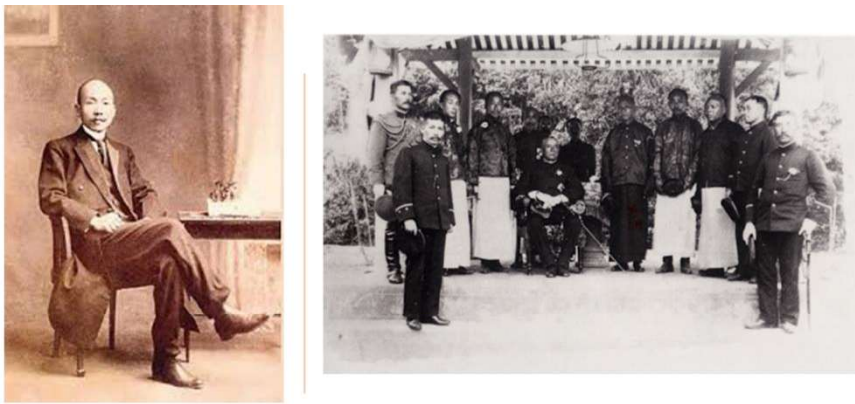
<sup>458</sup> The boom of Polai rice export started after 1925, which stimulated competition between small-scale indigenous merchant-millers and the Japanese monopolistic capital. Unfortunately, this part of data on push-car railways falls short after 1925. Ka, *Japanese Colonialism in Taiwan*.

<sup>459</sup> “Taichung Jiancha Migu 台中檢查米穀,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, July 25, 1905; “Taichung Tingxia Zhi Jianmisuo 台中廳下之檢米所,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, August 26, 1905.

<sup>460</sup> “Taichung Nantou Qingtie Wenti 台中南投輕鐵問題,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, January 24, 1906; “Taichung Nantou Jian Daolu Jihua 台中南投間道路計劃,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, February 17, 1906; “Taichung Nantou Zhi Qingtie 台中南投之輕鐵,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, March 9, 1906; “Taichung Qingtie Huishe Zhi Chuangli Zonghui 台中輕鐵會社之創立總會,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, August 12, 1906; “Taichung Qingbian Tiedao 台中輕便鐵道,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, November 9, 1906; “Taichung Qingbian Tiedao 台中輕便鐵道,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, November 10, 1906; “Taichung Qingtie Yibu Kaitongshi 台中輕鐵一部開通式,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, November 14, 1906; “Taichung Qingtie Huishe Zonghui 台中輕鐵會社總會,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, March 27, 1907; “Taichung Qingbian Tiedao Huishe 台中輕便鐵道會社,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, December 28, 1907; “Taichung Qingtie Jihua 台中輕鐵計劃,” *Taiwan*

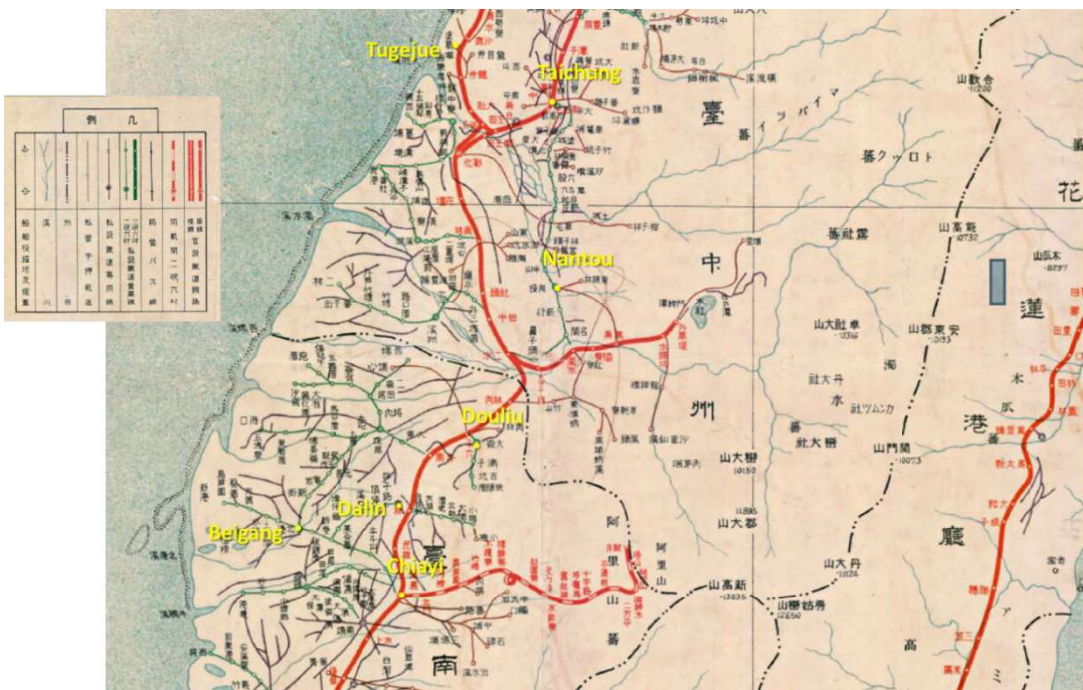


Image 17 The Lins of Wufeng



Left: Lin Xiantang (1881 – 1956)  
 Right: Picture of Colonial Governor-General Sakuma Samata and the Taichung Lin Family. The fourth person from the left is Lin Jishang

Map 12 Railway networks in the Taichung Area



Riri Xinbao Hanwen Ban 台灣日日新報漢文版, February 14, 1908; “Taichung Qingtie Huishe 台中輕鐵會社,” Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版, May 12, 1909.

Many other local elites who had invested in light railway companies shared similar traits. The five most significant gentry families, the Yens from Keelung, the Lins from Banqiao, the Gus from Lugang, the Lins from Wufeng, and the Chens from Kaohsiung, each invested heavily in push-car industries within their geographical spheres of influence. The participation of local Taiwanese investors thus stimulated regional reconfiguration. Those families usually founded or invested in push-car railway companies that functioned as part of their larger enterprises. For example, Yen Yun-nian, the family head of the Yen family in Keelung, founded the Keelung Light Railway Company. The company's main lines traversed the mining mountains in Northern Taiwan near Keelung and Taipei, for which Yen managed to secure mining rights from the Japanese colonial government.<sup>461</sup> Other investors were either the descendants of families who had been members of the gentry for generations or were learned gentlemen with scholarly titles from the Qing national exam system or those who had already been working in local administration when the Japanese arrived. This background guaranteed access to local resources, both economic and social, when strings needed to be pulled to establish this new, modern mode of transportation.

Under strict official supervision, however, the push-car industry facilitated the development of Taiwanese capitalism and redefined the Taiwanese concept of "region." Unlike traditional small- and medium-sized factories in Taiwan (primarily agricultural enterprises), railway companies were, by nature, a capital-intensive industry. Even for the most affluent

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<sup>461</sup> Yen I-fang 顏義芳, "Keelung Yanjia Yu Taiwan Kuangye Kaifa 基隆顏家與台灣礦業開發," *Taiwan Wenxian* 台灣文獻 62, no. 4 (April 2011): 105–30.

gentry families, cooperation with other shareholders was critical. As a result, the transportation industry was among the first private enterprises to adopt the modern structure of shareholding companies.<sup>462</sup> Such practices in establishing shareholding push-car companies and their adoption of modern corporate accounting systems, as Chen Chia-hao's recent study demonstrates, laid a foundation for indigenous Taiwanese capital to develop even after World War II.<sup>463</sup>

The push-car railway industry not only strengthened connections between regional elites but also forged new connections across the island, transcending traditional ties based on kinship or geographical units. For example, in 1907, Jiang Wenwei, a leading member of the gentry from Dalin, a town north of Chiayi in the Tainan Prefecture, cooperated with another member of the Lin Family in Taichung, Lin Qingsheng. Together they founded a light railway company connecting Chiayi to Beigang, a town at the middle point between Chiayi and the nearest port on the west coast, connected to Dalin through another push-car line. This cooperation thus completed a triangle push-car network with the apparent intention of boosting the circulation of agricultural products in the region. This collaboration across the two areas was also supported by local Japanese colonial officials who sought to facilitate the exchange of local resources with as little official investment as possible.<sup>464</sup>

The increasing cross-regional competition and collaboration, in turn, enhanced interconnectivity within an otherwise fragmented region. It also nurtured a growing awareness of

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<sup>462</sup> The governor-general office issued a regulation in 1912, forbidding the adoption of the term "*Kaisha*" (company) for any companies based solely on Taiwanese capital. The Taiwanese elites in the push-car industry circumvented the restriction by absorbing small portions of Japanese capital.

<sup>463</sup> Chen Chia-Hao 陳家豪, *Jin Dai Taiwan Ren Zi Ben Yu Qi Ye Jing Ying*.

<sup>464</sup> "Dabei Qingtie Kaiyeshi 打北輕鐵開業式."

the island as a unitary geopolitical region. In the Qing period, with a skeletal transportation system across the island, many of Taiwan's regional connections and city systems had developed horizontally across the strait, with a premodern city system dotting the west coast. Most were settlements and marketplaces supported by commerce with the Southeast coast of China.<sup>465</sup> However, push-car railways stimulated a vertical connection across the island as new city systems emerged. The push-car railways branched off the main stops on the colonial trunk-line railways, which had redefined the city system as Taipei strengthened its position as the capital. Meanwhile, Tainan, Taichung, and Chiayi emerged as new urban centers, and previous ports like Danshui and Anping declined as they failed to strengthen economic links with Japan.<sup>466</sup> At the same time, push-car lines connected the major cities along the way to the various ports along the coast, which then connected to Japan and its target markets in East and Southeast Asia.

In the reverse direction, push-car lines penetrated the hinterlands, mountains, and forests. By providing access to the main railway line and the ports, the push-car railways also increased the area under agricultural development as they opened new mines and camphor forests. These were the frontlines where local interests intermixed with colonial strategies. While the North-South steam railway served as the island's main artery, private light railways functioned as

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<sup>465</sup> Lin Yuru 林玉茹, *Qingdai Taiwan gangkou de kongjian jiegou* 清代台灣港口的空間結構 (Taipei 臺北市: Zhi Shu Fang 知书房出版社, 1996); Dai Pao-cun 戴寶村, "Jindai Taiwan Gangkou Shizhen Zhi Fazhen Yu Bianqian 近代台灣港口市鎮之發展與變遷," in *Taiwan Shi Lunwen Jingxuan* 台灣史論文精選, ed. Zhang Yan-xian 張炎憲, Li Xiao-feng 李筱峰, and Dai Pao-cun 戴寶村 (Taipei 臺北市: Yushanshe 玉山社, 1999), 427.

<sup>466</sup> Kitada Koji 北田晃司, "Shokuminchi jidai no Taiwan ni okeru toshi shisutemu no henyō: Chōsen to no hikaku o tsushite 植民地時代の台湾における都市システムの変容--朝鮮との比較を通して," *Jinbun chiri* 人文地理/人文地理学会編. 56, no. 3 (2004): 223–42.

capillaries connecting the pan-Taipei, pan-Taichung, and Pan-Tainan city-systems, nurturing a growing inter-regional awareness throughout the island.

### **The Push-car Railways and Their People**

When railways were characterized as a novel way of moving that annihilated time and space, the push-car railways highlighted a different kind of intimacy with space: a connection to the landscape and a private experience shared only with one's travel companions. Wolfgang Schivelbusch famously pointed out the revolution brought about by railway journeys. The essence of the railway, according to Schivelbusch, was the "mechanical uniformity" achieved by the replacement of organic animal power. The development of machines channeled the railroad journey into a continuous evolution towards ever higher speeds, regularity, and uniformity. One result of this evolution was the annihilation of time and space, which transformed the landscape seen from the train window into "another world."<sup>467</sup> Local identities, which had previously been defined by the spaces between them, were lost alongside the speeding trains.

In contrast, push-car railways were all about the intimacy of the locality. This was especially true for contemporary travelers from countries that had been building their railroad networks for nearly a century. Owen Rutter seemed to enjoy the push-car trip to Mount Jiaoban in April 1921. He wrote, "It is when you are going downhill that the fun begins and you have all the thrills of a prolonged journey on a kind of private (and rather flimsy) scenic railway."<sup>468</sup> For

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<sup>467</sup> Schivelbusch, *The Railway Journey*, 24.

<sup>468</sup> Rutters, *Through Formosa*, 214.

him, the push-car railway was like an entertainment facility. With their meticulously engineered rails, push-car lines maintained the use of an organic source of energy: human power. The use of rail further ensured some level of “smoothness, hardness, levelness, and straightness.”<sup>469</sup> At the same time, the organic limitations of speed and the crude form of the carriages incorporated the push-car into the regions it traversed. Therefore, the push-car journey was not “another world.” It was “the world” itself.

Push-cars also changed the social distance between people and shaped their behavior. Rudimentary as they may seem, push-car railways still contributed to the “modern training” of everyday life. Like regular railways, they had train schedules, although there is little evidence of how strictly these schedules were enforced. Multiple travel reports and sources indicate that push-car railways did contribute to the emergence of modern social etiquette. For example, Rutter writes, “[M]ore than once we met a trolley crawling up, but the brakes were good and we always had time to stop and leap off. Once we overtook a string of cars heavily loaded with sugarcane; here, too, we had to get out to let the coolie trundle the trolley along the road and put it on the line again beyond the obstruction.”<sup>470</sup> Indeed, two persons could lift an empty push-car off the rails. When there was only a single track, which was common, pullers, usually assisted by altruistic passengers, would lift the cart off the rail to allow loaded carts in the opposite direction to pass first. This practice was common throughout the island and became an unwritten code of

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<sup>469</sup> Shiverlbusch, *The Railway Journey*, 21.

<sup>470</sup> Rutter, *Through Formosa*, 214.

etiquette.<sup>471</sup> Furthermore, push-cars traveling in the sequence were ordered to maintain a safe distance between one another.<sup>472</sup> Fleets with heavy cargo, such as rice, sugar, coal, or timber, would fly a red flag on the first push-car and a green flag on the last one so that passengers on the same single track headed the opposite direction could take advance precautions.<sup>473</sup> These behaviors functioned as a rudimentary signaling system.<sup>474</sup>

Unlike mechanized railways, push-car trips maintained an intimate relationship between passenger and driver. Many intellectuals and visitors complained about their unpleasant experiences taking push-cars. They were unable to escape frequent tropical rain and were forced to endure the smell of sweaty coolies.<sup>475</sup> Sweating coolies pulling and shoving push-cars were a vivid remainder of the limitations and human costs of organic energy. It was evident that coolies were labeled in a way that reminded people of animals. Rutter puts it bluntly that when they switched coolies after reaching the top of a hill, it was “much as trams in the old days used to take on a second horse.”<sup>476</sup> However, human coolies were different from animals. Passengers

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<sup>471</sup> Michael Reilly, *Narrow Gauge Railways of Taiwan: Sugar, Shays and Toil* (Chippenham: Mainline & Maritime, 2017), 10.

<sup>472</sup> “Tainan-shū shisetsu kidō eigyōsha oyobi daisha ato-oshi ninpo torishimari kisoku 臺南州私設軌道營業者及台車後押人夫取締規則 臺南府令 36 號,” in Takezawa Yoshitarō 武澤贊太郎, *Taiwan Shisetsu Tetsudō Kidō Hōki Ruishū* 台灣私設鐵道軌道法規類集 (Taipei 臺北: Taiwan Ryokō Annaisha Shuppan Bu 臺灣旅行案內社出版部, 1932), 218–27.

<sup>473</sup> Kanno Chūgorō 菅野忠五郎, “Kidō Oyobi Kyōkai Ni Taisuru Chūyi Oyobi Kibō 軌道及び協会に対する注意及び希望,” *Taiwan Tetsudō* 台灣鐵道, June 1, 1919.

<sup>474</sup> They also saved the company, as well as the colonial government, the considerable amount of money it would have cost to build a separate and sophisticated signaling system, which was otherwise essential to conventional railway systems. Reilly, *Narrow Gauge Railways of Taiwan*, 14.

<sup>475</sup> “Fengshan Tiedao 鳳山鐵道,” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, October 23, 1907.

<sup>476</sup> Rutter, *Through Formosa*, 214.

sometimes were willing to get off the carts and walk up a steep hill to give the coolies a rest.<sup>477</sup>

In addition to invoking sympathy, coolies also could make a trip unpredictable. For example, Higashi was convinced by his coolie drivers to get off the push-car for good and follow them up the hills so that they could avoid a detour out the winding track of push-car lines.<sup>478</sup>

Most extant company archives have no records of direct hiring of coolie laborers, while some suggested hiring a “*kumikashira* 組頭” or contractor.<sup>479</sup> Oral interviews confirm the existence of the contractor system. A coolie contractor was responsible for recruiting and managing laborers, who were usually from neighboring communities. They were also intermediary agents to negotiate wages with the push-car company on behalf of his fellow coolies. In return, they collected a portion from coolies’ wages as commission.<sup>480</sup> This pattern was comparable with that of the Japanese push-car railways, especially in smaller localities, such as the Taishakuten Jinsha Railway, except the larger scale given the Taiwanese context (See Chapter 4). Many pullers were non-professionals, mostly agricultural workers who had been dependent upon the subsistence economy, resulting from colonial Taiwan’s economic structure.

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<sup>477</sup> Rutter, *Ibid.* Indeed, people might do that for animals as well. There may be a potential perspective to investigate the humanity-animality division in this context, as similarly discussed in Chapter 2. Unfortunately, the dissertation is limited by the available sources to conduct an in-depth discussion in this context. It is worth exploring in future research.

<sup>478</sup> Higashi Ikuzō 東幾藏, “Chaopanshan Yuki No Ishō 角板山行の印象.”

<sup>479</sup> Based on operation reports of the following shareholding companies: Taiwan Kidō 台灣軌道, Teinan Takushoku 展南拓殖, Da’an Kidō 大安軌道, Taipei Kidō 台北軌道, and Taiwan Sangō 台灣產業. Annual reports in “Business Archives Online 企業史料統合データベース,” n.d., Japan Digital Archives Center J-DAC..

<sup>480</sup> Chen Yan 陳顏 Li Jieying 李杰穎, “Taipei xian qinggui yunshu ye zhiye gonghui de dansheng 台北縣輕軌運輸業職業工會的誕生,” in Chen Yan 陳顏 and Li Jieying 李杰穎, *Yan zhu qing gui si yuan zu : wu lai tai che yu tai che bo wu guan de gu shi 沿著輕軌私遠足: 烏來台車與台車博物館的故事* (Taipei 臺北市: Xing zheng yuan nong ye wei yuan hui lin wu ju 行政院農業委員會林務局, 2007), 102.



In this structure, cash crops were either dominated by Japanese monopolistic capital interests (e.g., sugar) or were monopolized by the colonial government under strict controls (e.g., camphor, opium). The Taiwanese farmers were all but excluded from the benefits of cash crop production, at least until 1925, when the export of higher-yield Ponlai rice took off.<sup>481</sup> Therefore, for the local farmers whose livelihood had depended on the annual harvest, pushing carts offered an early opportunity to earn a cash income. The high turnover rate for push-car coolies suggested that the hiring was based on temporary or seasonal laborers. For example, from July 1921 to June 1922, Teinan Takushoku Company (展南拓殖株式會社 a major Taiwanese push-car company) started with 205 returning push-car employees. It made 276 new hires but then fired 240 during the year.<sup>482</sup> In contrast, the Taishaku Jinsha in Japan had three regular pullers and 65 temporary pullers on the Day of Kōshin (See Chapter 4).

There was no clear historical evidence about the ethnic matrix of the puller group in Taiwan, but it is possible to speculate. First, almost all existing records that contained names of pullers—such as newspaper reports and a few company receipts – contained Chinese family names. However, it could also be that indigenous people attracted less attention from contemporary journalists because they caused less trouble or were less accessible. Moreover, like the push-car operator who had taken Higashi for a shortcut, many pullers were quite familiar with the region. In that regard, some might probably have come from indigenous tribes

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<sup>481</sup> Ka Chin-ming, *Japanese Colonialism in Taiwan*.

<sup>482</sup> Board reports of Teinan Takushoku Company, July 1921-June 1922. “Business Archives Online 企業史料統合データベース.”.

assimilated into the Japanese via their colonial projects, especially along the lines that penetrated indigenous territories. However, there is no sufficient evidence to conclude either way.

The nature of push-car pulling required intensive labor but also organized workers with attention to punctuality. The contractor-centered employment structure of puller coolies also suggested that recruitment depended on strong local networks. Of course, it is possible to suspect that indigenous workers also participated in pulling, given their physical condition and that push-car lines mostly run across the hinterland across the native territories. Unfortunately, to date, there is little that proves their existence during the colonial period. Nevertheless, a recent oral interview of former pullers in Wulai (An inner mountainous area between Taipei and Hualian in Northern Taiwan) by sociologists provides potential clues from the period immediately after WWII. According to the interviewer, almost none of the local Atayal people worked as push-car coolies. The only Taiwanese indigenous people who worked as pullers were six Amis people, also immigrants from the Huadong Valley in Eastern Taiwan between Hualian and Taidong. However, “most of them quit after they tried the job. Only one of these Amis people left and continued the work for another 5 to 6 years. As for local indigenous [Atayal] people, sometimes they just got drunk, and after that, they cared for nothing. So they did not endure the work.”<sup>483</sup> The sociologist suspected that the Atayal people might not be accustomed to the labor-intensive and time-sensitive work of push-car pulling compared to the Amis. The Amis had been more involved with the Han groups, or “cooked,” and thus more likely to accept the job, although with

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<sup>483</sup> Chen Yan 陳顏, “‘Zuo taiche qu qumou 坐台車去娶某’,” in Chen Yan eds. 陳顏, *Yan zhe qingtie si yuanzu*, 100.

great reluctance.<sup>484</sup> Therefore, most pullers might have been Han-Chinese from local settler communities, especially Minnan or Hakka.

Interestingly, these workers were not exclusively men. According to James W. Davidson, an American explorer who visited Taiwan at the turn of the century, young Hakka girls were frequently employed as push-car drivers.<sup>485</sup> A recent memoir also mentions that sometimes a whole family, regardless of gender and age, would help with the pulling to alleviate the pressure on the male head of the household.<sup>486</sup> Thus, the involvement of women might be more common than conspicuous historical evidence suggested. In addition, the sugar companies always hired coolies for temporary work and had different wages for male and female coolies.<sup>487</sup>

Some push-car operators found it a better job than day-laboring in the farmlands, with steadier cash flow for the family and better working conditions.<sup>488</sup> Although slightly better off than agricultural day laborers, push-car laborers were still underpaid. In 1909, the Taiwan Seito Kaisha, for example, paid 15 sen for male coolies, and 10 sen for females.<sup>489</sup> Although the record did not specify the use of these coolies, it possible that there were cases when coolies were hired for the push-car railways. In 1910, the average wage for a day labor coolie was around 40-50

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<sup>484</sup> Chen Yan eds, *Yan zhe qingtie si yuanzu*, 99-101.

<sup>485</sup> James Wood Davidson, *The Island of Formosa, Past and Present: History, People, Resources and Commercial Prospects ...* (Taipei: Ch'eng Wen, 1972), 620.

<sup>486</sup> Chen Yan 陳顏 and Shi Songhan 石松函, *Wu lai tai che shi jian lu xing 烏來台車時間旅行* (Taipei 臺北市: Nong wei hui lin wu ju 農委會林務局, 2009).

<sup>487</sup> “Tōsha Jigyō 糖社事業,” *Taiwan Nichinichi Shipō 台灣日日新報*, October 22, 1909.

<sup>488</sup> Reiley, *Narrow Gauge Railways of Taiwan*, 14. Reiley conducted a conversation with Luo Shui-lian, Houli, 24 April 2016. His grandfather had worked as a push-car operator. He recalled his grandfather saying that building the lines was hard, which possibly was tantamount to forced labor. However, after he became a push-car operator, the pay and conditions were much better and offered a big improvement on life.

<sup>489</sup> “Tōsha jigyo 糖社事業,” *台灣日日新報*, 1909-10-22, no.3446, p.3.

sen, depending on how much work one could obtain and different localities. (In contrast, Japanese day labor could earn as much as 90 sen.<sup>490</sup>) Rickshaw pullers in Taipei earned slightly more, with daily revenue of around 70-80 sen.<sup>491</sup> It was noteworthy that in 1907, rickshaw pullers in Tokyo only earned 40-60 sen per day.<sup>492</sup> It was not much improvement from the daily wage around 40 sen almost a decade earlier, as reported by Yokoyama Gennosuke in *Nihon no kasō shakai* 日本の下層社会.<sup>493</sup> The rickshaw pullers earned slightly more thanks to the lack of resources of the new colony. The demand for laborers drove up the daily wages and attracted many immigrant workers in the 1910s (See in Chapter 2). However, it seemed that the lowest echelon of the society shared similar plights in both the metropole and the colony.<sup>494</sup>

For the push-car companies, Japanese- and Taiwanese-dominated alike, lowering the push-car laborers' wages was the easiest and most effective way to maximize their profits.<sup>495</sup> In 1928, push-car laborers were only paid 30% of the ticket price of passenger trips and 33% for

<sup>490</sup> “Rikieki Kōshi 力役工資,” *Taiwan Nichinichi Shinpō* 台灣日日新報, December 19, 1909..

<sup>491</sup> “Taiwan Liyizhe Shenghuo Zhuangtai 台灣力役者生活狀態.” It was noteworthy that the high wage of rickshaw pulling attracted many sojourners from southern China to Taipei. Taiwan nichinichi shimpo had several reports about the immigration situation.

<sup>492</sup> “Shafu No Shūnyū 車夫の収入,” *Asahi Shinbun*, March 25, 1907, sec. Chōkan 朝刊.

<sup>493</sup> 40 sen was the average daily wage for street pullers, who did not own a rickshaw or served a regular client. Those who were employed by richer as regular pullers and who served regularly in a rickshaw workshop had much higher wages, from 12- 15 en -- Requoted from Saito Toshihiko, *Jinrikisha no kenkyū*, 263, 239.

<sup>494</sup> Therefore, it was a big difference when laborer received rewards. In 1929, three push-car coolies in Hsinchu, Wenwang, Li Yongwei, Li Yongzuo, each received a silver cup for their service to Kaneko, yorihito-shinnō-hi, a imperial household member (Iwakura Tomosada's daughter) when she visited Mt. Jiaoban. “Daishafu No Eiyo 台車夫の榮譽,” *Taiwan Nichinichi Shinpō* 台灣日日新報, December 18, 1929, No. 10858.

<sup>495</sup> Chen Chia-hao, *The Taiwanese Capital and Business Performance in Modern Period*, 74.

cargo trips. The rates were likely even lower in earlier years.<sup>496</sup> Companies also took every advantage of their cheap labor. For example, when typhoons destroyed bridges along the routes of the push-car lines, which was common in Taiwan's tropical climate, companies would force push-car coolies to repair them but then refuse to pay.<sup>497</sup>

The labor issue intensified at the turn of the 1920s. Rampant inflation after World War I drove up the price of labor. However, Taiwan was also rapidly industrializing due to the colonial government's success at attracting Japanese capital to the island. The result was an abrupt shortage of labor.<sup>498</sup>

The coolies themselves did not hesitate to negotiate whenever they had the chance. In 1920 in Anping, Tainan, several push-car coolies, who were just teenagers from 13 to 16 years old, protested against low wages. The company only paid them 10 sen for a one-passenger cart and even a much lower price for more passengers, which was much lower than regular coolies' wages. They decided to make trouble for the company. They stopped following regulations, asked for extra payment directly to the passengers, impeded the transport, and wasted passengers' valuable time to the extent that the newspaper criticized them for being "too greedy for profit."<sup>499</sup> Finally, the company had to give in due to a lack of substitute labor resources. In

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<sup>496</sup> "Taiche Yache Renfu Xiang Hsinchu Jun Tichu Tanyuan 臺車押車人夫向新竹郡提出歎願," *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, November 6, 1928.

<sup>497</sup> Ibid.

<sup>498</sup> Teraya Hiroshi 照屋宏, "Kidō Gyōsha Ni Nozomu 軌道業者に望む"; Sasa Tōkō 佐々東紅, "Rōryoku Jyūkyū No Chōsetsu 勞力需給の調節," *Taiwan Kōgyōkai* 臺灣工業界, October 15, 1919.

<sup>499</sup> "Taiche Kuli Quefa 台車苦力缺乏," *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, April 6, 1920, no.7119..

the same year, the colonial government was forced to lower its legal standards to allow coolies with three months of pushing experience to operate passenger push-cars. The previous standards, in place since 1914, had required five months.

Taiwanese laborers were gradually exposed to the same proletarian revolution their counterparts in Japan had experienced since the beginning of the 1920s.<sup>500</sup> With leverage at hand, collective attempts to assert their rights made them increasingly visible in public life. In 1928, push-car operators from the Taiwan Kidō Company in Hsinchu organized a massive strike. They urged the company to raise the cut of fares from 30-33% to 50%. They also asked the local colonial government to step in as arbitrators. However, to the dismay of the laborers, the local colonial government stood behind the push-car company and denied their requests.<sup>501</sup>

Coolies were among the colonial administration's most serious headaches. As a group, they were hard to control and regulate. In addition to locally recruited laborers, migrant workers were also common in colonial Taiwan. Many of the coolies in Tainan were poor sojourners from the Penghu Islands off the coast of the Taiwan Strait. Hakka people from Dongshi District (東勢角), an otherwise non-Hakka county in eastern Taichung, constituted the primary source of migrant workers in Central and Southern Taiwan, or Anping and Ta-Kau (Kaohsiung), respectively.<sup>502</sup> Migrant workers brought instability and anxiety to the urban areas as they would often linger around stations and were involved in theft, robbery, and in some cases, even

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<sup>500</sup> *Ibid.*

<sup>501</sup> "Taiwan Guidao Zhengyi: Laodongzhe de Shengli Dan Sihū Beipian De 台灣軌道爭議：勞動者得勝利但似乎被騙的," *Taiwan Minbao* 台灣民報, December 9, 1928.

<sup>502</sup> Sasa Tōkō, "Rōryoku Jyūkyū No Chōsetsu 勞力需給の調節."

murder.<sup>503</sup> *Taiwan Daily News*, the official newspaper of the colonial government, used the metaphor of “tiger peril” (虎患) to refer to the coolie problem as dangerous trouble-makers. In the context of Taiwan, as in the Southeastern coast of China, there were strong connections among them based on native place and familial relationships. Gang fights were frequent, and not just between different regional groups. They were also not afraid of violent confrontation with Japanese colonizers. Yoshida Miyatarō, a Japanese supervisor of the Satō Architecture Group, contracted to construct a dam in Keelung, was the victim of such violence. When Yoshida tried to order one of the push-car coolies to transport cargo a little further than the coolie was willing, the coolie refused. The angry Yoshida slapped the coolie in the face. As a response, the coolie called on his brother, who also worked as a push-car coolie nearby. Along with 200 other coolies on-site, they beat up Yoshida in a massive brawl. Yoshida would have died had the Japanese gendarme not arrived in time.<sup>504</sup>

The proliferation of the push-car industry well exceeded the colonial government’s expectations and pushed the colonial government to adapt rather passively to its management. During the early years of occupation, the colonial government recognized that the push-car railway was a functioning branch of the trunk-line steam railway. However, due to the success of the push-car industry, the colonial government realized that it was more than just a temporary solution to Taiwan’s transportation problem. As late as 1912, colonial officials made no distinction between push-car railways and locomotive-driven railways in terms of administration

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<sup>503</sup> “Tainan Huhuan 台南虎患,” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, September 3, 1905.

<sup>504</sup> “Kuli Baoxing 苦力暴行,” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, September 7, 1905.

and legal categories. Only later did the colonial government issue its Regulations on Private Tracks in Taiwan (*Taiwan Shisetsu Kidō Kiten* 台灣私設軌道規程), which stated: “This regulation applies to all general transportation facilities that utilize rails. Those that are driven by gas, steam power, or electricity are subject to the regulation on private railways (*shisetsu setsudō* 私設鐵道) [That is, not subject to this Regulation on Private Tracks].”<sup>505</sup> In other words, tracks, or “kidō 軌道,” were in a different category than railways (*tetsudō* 鐵道). They were distinguished by the energy used to propel them. Besides operational details (platform-carts versus locomotives, for example), there were no significant differences between the regulation of private tracks and that of regular railways. Both industries’ operators were required to submit construction plans with technical details, budgets, and operation schedules.<sup>506</sup> This edict, unseen elsewhere in the Japanese Empire, deemed push-car railways distinct from yet legally equivalent to locomotive-driven railways.

For the colonial administration, a significant problem for push-car railways was the high accident rates. Push-car accidents happened for multiple reasons. The part of the push-car journey that Rutter had enjoyed the most, the downhill segment, appears to have been the most dangerous because the braking system was crude and fragile. As a result, death rates were

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<sup>505</sup> “Taiwan shisetsu kidō kitei (Meiji 45 nen 1 gatsu furei dai 9 gō) 台灣私設軌道規程 (明治 45 年 1 月府令第九號) (Regulations on Private Tracks in Taiwan: Prefectural Edict No.9, January 1912),” In Takezawa Yoshitarō 武澤 贊太郎, *Taiwan Shisetsu Tetsudō Kidō Hōki Ruishū* 台灣私設鐵道軌道法規類集, 152–61.

<sup>506</sup> “Taiwan shisetsu tetsudō kisoku shikō saisoku 台灣私設鐵道規則施行細則 (明治 21 年 12 月府令第七十三號) ” in *Ibid*, 22-38.



invariably higher than the regular railway system. A primary reason lay in railway maintenance. As mentioned, push-car lines were laid on regional roads instead of on specialized lines. This meant that lines were open to daily erosion from other transportation activities that shared the routes. The primary source of erosion was the island's traditional means of cargo transportation: oxcarts. They were also the primary competitors to push-car railways in the localities. Heavily loaded oxcarts would often crash through the rails and destroy the already fragile pathways, destabilizing the foundation of the push-car lines.<sup>507</sup> Yet, maintenance costs only constituted 12% of the total expenditures for the major push-car companies in the 1910s.<sup>508</sup> In other cases, heartbreaking tragedies happened when unattended small children played on the pathways, and the braking system failed to function in time.<sup>509</sup>

Nevertheless, when looking for solutions to the trouble caused by push-car railways, the colonial officials and even the Chinese elites often blamed the coolies. In a travel diary, an author with a pen name in Chinese, “Xie Xueyu,” wrote about her experience in Southern Taiwan, Tainan, and Chiayi. “The push-car coolies were always careless with their passengers. They frowned and scowled whenever there was something that did go in their way. They were domineering and would even curse passengers with loud voices. When passing bridges and climbing across mountains, they ignored the warning signs that instructed them to slow down.

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<sup>507</sup> Kanno Chūgorō 菅野忠五郎, “Kidō to Gisha 軌道と牛車,” *Taiwan Tetsudō 台灣鐵道*, February 1919; “Kidō Gyōsha Konwa Kai 軌道業者懇話會,” 62–63.

<sup>508</sup> Based on company data collected from the shareholder reports of Da'an Kido, Taiwan Kido, Taiwan Sangyō company. “Business Archives Online 企業史料統合データベース.”

<sup>509</sup> “Taiche Lisha Xiaoer 臺車轆殺小兒,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, January 28, 1908; “Qingtie Liren 輕鐵轆人,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, June 26, 1908; “Che Ya Shaonu 車壓少女,” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, January 15, 1910.

All they wanted was to reach the destination quickly regardless of any potential danger. It was terrifying for passengers. What if the cart turned over, fell, and injured people? There were supervisors along the way, but they were too far away [to prevent accidents effectively.] Therefore, it was important to choose good coolies.”<sup>510</sup> In other words, the uncivilized, uneducated, arrogant, and selfish coolies were the primary problem.

To be sure, the colonial government acknowledged the responsibility of the push-car companies, as they ordered private companies to inspect the rails, replace or upgrade rotten crossties, and follow regulations to avoid overloading.<sup>511</sup> Nevertheless, colonial officials suggested that accidents happened because “uncivilized” laborers had failed to follow the rules. Regardless, poor maintenance, human error, and careless pedestrians crossing the push-car lines could be held equally accountable. Teriya Hiroshi, head of the Railway Department’s supervising office, conspicuously suggested that training skilled coolies and a better work ethic were the solutions to the safety problem.<sup>512</sup> In 1922, right after the Department of Railways transferred direct supervising power to the localities, each provincial government published regulations on the behavior of push-car coolies. These edicts intended to put every push-car laborer under governmental surveillance. Only those with no significant criminal history, mental health problems, or history of violence could be issued operator permits. Furthermore, it required operators to wear uniforms with numbers consistent with their licenses, similar to domestic

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<sup>510</sup> “Nangui Zhigan 南歸誌感,” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, April 13, 1906, no.2382..

<sup>511</sup> Kanno Chūgorō 菅野忠五郎, “Kidō Oyobi Kyōkai Ni Taisuru Chūyi Oyobi Kibō 軌道及び協会に対する注意及び希望”; “Kidō Gyōsha Konwa Kai 軌道業者懇話會.”

<sup>512</sup> Teraya Hiroshi 照屋宏, “Kidō Gyōsha Ni Nozomu 軌道業者に望む.”

regulations on rickshaw pullers. In addition to establishing a speed limit on slopes and in urban areas, it also dictated a particular work ethic. For example, laborers were required only to accept payment for a set price, nothing more, and always to wear clean clothes. It also instructed push-car operators on how to sanitize the carts in case of an epidemic.<sup>513</sup> In many ways, these edicts helped incorporate the push-car coolies, a new group of laborers in colonial Taiwan, into Japan's "civilizing" projects.

Despite the apparent defects of the human-powered light railway system, neither radical engineering change nor replacing human power ever seemed to be immediate solutions for the Japanese colonial office. Kanno Chūgorō, head of the Department of Railways supervising bureau and with a background as a technician, recognized that human-powered railways would eventually become obsolete, given the proliferation of industrial/agricultural production on the island. Nevertheless, even a technocrat like him had to admit that given the enormous costs of a total renovation, the most feasible option would not be total replacement. Instead, he advocated upgrading the one-way track to multiple tracks, improving curving techniques, enhancing rail track stability, and adopting better carts.<sup>514</sup> In 1919, Kanno even proposed a more advanced braking system for the push-cars to be easily maneuverable, even for the most untrained coolies.<sup>515</sup> In other words, the fact that push-car railways sat at the lower end of the technology

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<sup>513</sup> Takezawa Yoshitarō 武澤贊太郎, *Taiwan Shisetsu Tetsudō Kidō Hōki Ruishū* 台灣私設鐵道軌道法規類集.

<sup>514</sup> Kanno Chūgorō 菅野忠五郎, "Teoshi Keibin Tetsudō No Shōrai 手押輕便鐵道之將來," *Taiwan Tetsudō* 台灣鐵道, July 1915.

<sup>515</sup> Kanno Chūgorō 菅野忠五郎, "Kidō Daisha Yō Seido Sōchi Oyobu Ranfu Ni Tsuite 軌道臺車用制動裝置及「ランフ」に就いて," *Taiwan Tetsudō* 台灣鐵道, June 1919.

spectrum was not a significant problem for the colonial officials. The real problem was the people.

### **Conclusion**

Human-powered railways were both the product and the propellant of the colonizing and modernizing experience of colonial Taiwan. Despite the incentives to develop a more sufficient and “civilized” transportation network, the colonial government still had to rely on private enterprise to make business decisions about technological upgrades. They also had to accept and dependent on the already widespread and functioning push-car transportation system in Taiwan. Thus, sweaty coolies pulling platform carts on sophisticatedly engineered railways became a regular mode of transportation that persisted throughout the Japanese colonial period and even beyond. Moreover, it stimulated the inland circulation networks. As a result, the push-car railways completed the cycle of global circulation that maximized the exploitation of Taiwan’s hinterland and thus incorporated Taiwan closely into the high-velocity capitalism of the twentieth century.

However, the actual unfolding of the penetration process was not top-down, one-way transplantation from the metropole to the colony. As a novice in colonialization, Japan was experiencing its own growing pains in the grand project of industrial modernization. As the colonial officials fumbled around the forested wilderness of Taiwan, they also had to determine, rather haphazardly, which of their domestic experiences were applicable in an unfamiliar

colonial context. On the contrary, the involvement of local entrepreneurs, the economic and political compromise to adopt human power, revealed the weakness of the young empire and made the human-powered railway industry in Taiwan an ideal case to display the everyday negotiations and compromises inherent in Japan's first colonial project. The vacuum left by the colonial state and the limitation of Japanese domestic capitalists created an opportunity for the colonized Taiwanese to explore their path towards modernity.

The push-car railway was interstitial in many ways. The construction of push-car railways required careful engineering, and even complicated tunnels, to penetrate previously unreachable territory. Push-car railways co-existed with other transportation facilities, steam railways (older) and automobiles (newer). Not only did it rely on an intermediate technology combining steel tracks and organic driving forces, but it also thrived at the interstices of the Japanese empire. It ran through the geographical frontier of the hinterlands, where the realization of evolving local interests was beyond the willingness and capability of colonial planning.

It was not until the 1940s that human-powered push-car railways were mainly discarded and replaced. Interestingly, they were not replaced by better railways but by automobiles, which developed the most upon local pathways like push-car lines. These push-car lines, therefore, left few traceable legacies on the ground. This was a new story, in which protagonists sped through the country roads, but the older story of push car railways remained etched on the landscape and in living memory.

## CONCLUSION

### **Epilogue: The Reinvented Tradition of Human-powered Transportation**

In August 1908, the Zusō Human-powered Railway was officially replaced by a gasoline-powered locomotive light railway. Four years later, Amamiya Keijirō sold the line to the Japanese state. As part of the nationalization plan, the state began constructing Japan's longest mountain tunnel yet. This 7.8 km long tunnel, known as the Tanna Tunnel, was designed to shorten the trunk railroad between Tokyo and Kobe. It also meant that the trunk road could eventually reach Atami. By eliminating the detour around the mountains between Atami and Numazu, the line would also bypass the curvy route of the original Zusō line. The construction plan declared that the Zusō Line only had a few years left before completing the tunnel and the national trunk railroad. However, the end of Zusō came even much early and rather suddenly. On September 1, 1923, the Great Kantō Earthquake struck the great Kantō area. The Zusō line was shredded during the massive earthquake, leaving little traceable mark behind.

Image 18 Jinsha Exhibition inside of the Katano Gōfuku-ya



However, this was not the end of the story of human-powered railways in Japan. In 1996, the 100th anniversary of the founding of Zusō Jinsha, a group of local small businessmen from Southern town Avenue Shopping District (Jyōnandōri shōtengai 城南通り商店街) in Minamichō, Odawara City, established a stone monument at the old site of Jinsha's Odawara station, at the mid-point between today's Odawara and Hayakawa Station on the Atami Line. A few steps away was another hundred-year-old establishment – the Katano imono Shop. Katano Bōjirō, the founder and owner of the Katano shop, was born in 1853, the year the Black ship had arrived. His wife, Maki, was born five years later in 1858, another historic year marking the Ansei Treaties. The Katanos started their kimono business with a big-eight cart, shuffling through the neighborhood's streets. When the Zusō Jinsha Company built its Odawara Station, Katano managed to own a shop in front of the station, establishing itself as one of the first modern

“ekimae” station-front establishments in Odawara. The Kantō Earthquake did not end their business, as they rebuilt their shop following the disaster. The shop is still standing today. However, the economy and shrinking population in recent years have caught up with it. Envisioning no future in the kimono business, the tenth-generation owner had already left home and become a regular salaryman in the city. Remaining was the ninth owner, Katano Teruyuki. He had allocated a small corner in his shop to build a private Zusō Jinsha exhibition. He named his small museum “The Story of Hot-Spring Dreams.” In the small collection, he displayed a reconstructed memory of the days of human-powered railways: an imagined model of the Jinsha lines and their environs made by a train fan, the timetable, old and new pictures of the community, and every book he could find with information on the region, the trains, and the era in general.<sup>516</sup>

Hopping on the Tōkaidō Main Line and continuing southward to Yugawara Station, a local Japanese-style confectionery store (wagashi-ya) called Miraku-an presents the memory of the human-powered railway. The shop’s owner, Murofushi Noboru, was a retired Japanese Railway company employee. In 1997, the then 76-year-old Murofushi remade a model of Jinsha carriage based on old photos of Zusō Jinsha. He installed the carriage on the original Jinsha rail found in the area. The Jinsha model became an attraction for his shop and also for Yugawara-chō.<sup>517</sup> When the author visited in 2018, the model was still there. Visitors could purchase a

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<sup>516</sup> Based on the author’s interview notes.

<sup>517</sup> Murofushi Noboru was born in Yugawara-chō in 1921. He graduated from the Railway Training Institute, specializing in electric engineering, and joined the army in 1921. After returning from the war, he served the Railway Department until his disbandment in 1947 when he returned to Yugawara, his hometown. Then, he attended



Jinsha-themed confectionery with a package shaped like a Jinsha carriage. No longer in operation, the *jinsha* has been remade into a cultural symbol of the region.

Image 19 Replica of a human-powered carriage in front of Miraku-an and the Jinsha-themed Confectionery



All of these local efforts corresponded to the 2003 Tourism-based Country Promotion Basic Act (*Kankō Rikoku 観光立国*) and Kanagawa Prefecture’s follow-up “Regional Revitalization (*chiiki kasseika 地域活性化*)” plan. The nostalgia for the human-powered railway

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the Tokyo Confectionery School and established this local confectionery store/company. He is also the author of a book *Iki nokotta tetsudō deido no naka no chi to ase no kiroku 生き残った鉄道泥土の中の血と汗の記録* (Tokyo: Dōji Shobō, 2011) which documents his wartime experience in the railroad unit in China.

had become the new symbol of the region and, more practically, a tourist draw. Once again, it was the small-time actors who had continued the story of the *jinsha*.

In Taiwan, the story of push-car railways continued along different lines. Most push-car railways had been established along local pathways, so what came to replace them was not fossil-fuel-driven railways but the automobiles, which began gaining traction in the late 1920s. The proliferation of the automobile had been a top-down project. In 1930, the recently appointed head of the Transportation Department of colonial Taiwan, Sōno Danroku, proposed a plan for government-owned motor transport. He decided that instead of continuing with constructing a Taiwan-belt railway network, it would be more cost-efficient to promote automobiles and upgrade existing pathways. The state-supported automobile industry hindered traditional transport industries, as statistics demonstrate declining numbers of rickshaws, oxcarts, and of course, privately-run push-car railroads. Some larger push-car companies adapted to the contracting of business by adding bus lines to their original operations. However, smaller companies that could not afford to do so were forced out of business.<sup>518</sup> In 1942, push-car trackage was down to 558 km, only 40% of its historical peak of 1,367 km in 1931. Push-cars in operation had declined from their peak of 7,303 to 2,700. However, this was still not the end of the story of Taiwanese push-car railways. As late as 1952, there were still 245 km of push-car

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<sup>518</sup> Tsai Lung-pao 蔡龍保, “Guo Ying Chu Xian – Rizhi Shiqi Taiwan Qiche Yunshuye Fazhan de Yige Zhuanzhe 國營初現—日治時期汽車運輸業發展的一個轉折,” *Guoshiguan Xueshu Jikan 國史館學術集刊*, no. 16 (2007): 1–47.

trackage and 2,207 carriages in operation. Most of these remaining lines no longer served the public but were industrial lines running through the hilly regions for sugar refineries or mines.<sup>519</sup>

When these lines went out of business, some infrastructure remained in place and was either preserved or reinvented. In 2017, I visited Youna, a mountainous region located between Taipei and Keelung. There, I found traces of a previous push-car line. The entrance of the push-car tunnel was hiding between residential buildings. It would have been easy to miss for unintended eyes. Once I found the entrance – reminiscent of a magic entrance in movies like *Spirited Away* – it opened up to a hidden world. A green pathway covered by tropical grasses and plants led towards the heart of the mountain. But it was by no means a natural world beyond. The place had been reconstructed as an open ecological garden designed to attract tourists and visitors. To revitalize the place and draw attention, the designer had extracted push-cars from the place's memory, preserved and circled up some remaining rails, recreated a replica of the push-car, and parked it in a new pavilion. However, the effort to rebuild the area ended in failure. The push-car replica and the pavilion had been piled up with personal items from neighboring residents [Image 20].

Other places in Taiwan have seen similar efforts to preserve and reinvent the tradition of push-cars. In Kanglang, located in the vast rural area near Hsinchu, a like-new, push-car replica parked on the old rails. This line was initially built in the 1910s, connecting Hsinchu to the nearby Zhuqian port, transporting fish, port cargo, and passengers. However, the replica carriage,

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<sup>519</sup> Chen Yan 陳顏 and Li Jieying 李杰穎, 沿著輕軌私遠足, 64.

named “Health” and powered by a small engine, was built in 2011 as part of a community revitalization project. Instead of real names along the line, the fabricated station board highlighted Kanglang: a stop between the Healthy Station and the Happy Station. An oxcart replica was also present in the middle of the field, serving as a reminder of the vanishing history. A traffic signboard warning about a fictional intersection with push-car lines completed the spatial imagination of the push-car days [Image 21].

Image 20 Debris from previous push-car lines and tunnels in Youna (Near Keelung)



Image 21 The Recreation of Push-Car Railways in Taiwan (Jiufen Mining Museum (left) and Kang Lang in Hsinchu)



When organic modes of transport disappeared from quotidian settings, they became exotic. According to an interview, local people even used a push-car as a special vehicle to escort a bride to her new residence in a 1960 wedding.<sup>520</sup> Rickshaws, too, experienced a similar transformation after they ceased to be a major mode of urban transport in Japan. Koga Kunio reminisced about rickshaws in a 1994 essay. While street rickshaws attracted criticism, the high-quality rickshaw became a luxury for affluent families and even a symbol of social status. Sometimes, special rickshaws were used for weddings and festivals.<sup>521</sup> At Arashiyama in Kyoto, visitors can still ride a rickshaw – drawn by male and female pullers dressed in *hakama*. As the

<sup>520</sup> Chen Yan 陳顏 and Li Jieying 李杰穎, 94–97..

<sup>521</sup> Koga Kunio 古賀くにお, “Jinrikisha 人力車,” *Rinen 林苑*, 1994.

rickshaws follow their routes and pullers provide information on local attractions, the rickshaws themselves also create the atmosphere of the place. As such, organic transport has never really faded away. Instead, it continues to define, transform, and construct the character of its native places.

### **Organic Transportation and Place-Making In Modern Asia**

Lingering in the world in various forms, all human-powered transportations shared several common traits. They were presented as if they were unthinkable, associated with a remote memory, and anachronous in their current locations. At the same time, they were also locally exclusive and imbued with the local character. Modern tourism and the rediscovery of local history forged them into a cultural symbol, which was expected to bring new hope to their places –like they had done not so long ago.

This tension between the temporal and spatial dimensions of human-powered transportation makes it a productive site from which to reconceptualize narratives of progress in global history. Johannes Fabians' classic *Times and the Other: How Anthropology Makes its Object* has pointed out the methodological faux pas of the “denial of coevalness” or in the construction of the “Others.” For example, concepts such as “savage” and “primitive” became “temporal concepts” when constructing the relationship between the West and the Rest.<sup>522</sup> While

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<sup>522</sup> Johannes Fabian, *Time and the Other: How Anthropology Makes Its Object* (New York: Columbia University Press, 2014).

historians have been cautious about this binary mode of thinking, there are still lingering effects on the macro narrative of global history. The energy-centered narrative of global history, represented by the California School, was an attempt to shred the linear explanation that had attributed the rise of the West and industrialization to technological development. However, while this narrative shifts the focus to the more contingent environmental constraints, it also slips into the tendency of reinforcing a new spectrum, marked by hierarchical use of energy and ultimately another round of technological development that maximizes energy usage.

This new spectrum became even easier to accept and internalize by the people in those small Asian localities, who had been “othered” in the conventional Eurocentric narrative. The nostalgic and reconstructed memories of human-powered transportation have become “other” experiences for the local people today. Now, these human-powered modes of transportation seem obsolete, unthinkable, or even backward. The “otherness” derives from the assumption that the use of human power is a contradiction in the progressive spectrum of energy-use technology and modern concepts such as abolitionism of slavery, labor/animal protection, and hygiene. However, at the same time, these human-powered modes of transportation also helped make these places into what they are now and become part of the local atmosphere. For local people, human-powered transportation experiences concretized the tension between time and space: if human-powered transport was antithetical to modernity, then how could they understand the fact that at the same time, their great-grandparents had become more involved with the outside world, both intentionally and unintentionally, and both proactively and passively, thanks to these forms of transportation?

From a historian's perspective, reconciling this tension helps reconceptualize the nature of modernity under both a general global history narrative and in the context of colonialism. This dissertation calls attention to those developments that were coeval, present, and integral to global and local development in the early twentieth century. For example, rickshaws and human-powered railways were coeval to the worldwide electrification, the expanding networking of railway systems, the spread of gas lights, and a world increasingly interconnected by telegrams.

The organic modes of transportation were responses and solutions to new, modern problems. Their effects were manifold. They offered new employment opportunities to agricultural laborers and the growing population of urban poor, connected previously unreachable hinterlands to the expanding circuits of the rising global capitalism, changed the perception of time by providing timetables and diversified travel options, stimulated new regional coalitions among local elites that transcended administrative boundaries, contributed to the rise of small-time shareholding companies, provoked new debates on the nature of humanity, animality, and the national spirit, introduced new categories of racialized labor to the global market, and propelled modern policing strategies on regulation and surveillance.

At the same time, organic transport also transformed seemingly "old" problems. For example, the technological innovation and mechanical upgrades of rickshaws and push-car railways also changed how humans used their bodies and thus created new forms of bodily energy. The bent bodies of rickshaw pullers stimulated anxiety over health and hygiene. Additionally, the juxtaposition of animal and human power on the street provoked new



movements in animal protection, which was comparable but distinct from early modern concerns of compassion toward animals. Meanwhile, rural village life and folk culture were created by this form of modernization. The push-car railways in hot-springs, temples, and shrines, for example, helped transform the cultural and economic character of their respective regions, and in turn, forged new regional signatures and created new “traditions.” This manifestation of modernity did not follow a paradigm dominated by the West. It was an indigenous Asian development.

These organic technologies also challenged the assumption that modernity and modernization were inherently associated with the pursuit of higher efficiency. The existence of human-powered transportation has remained controversial, even to contemporary people, who have struggled with the incommensurability between the crude application of human power and the rapidly transforming world. The deployment of human power could be an expedient and immediate solution to a local problem. However, it could also be a compromise due to path dependency and financial and technical constraints. In either case, balance and compromise were also integral parts of the modern experience. In short, these organic transport technologies shaped the modern era as profoundly as those conventionally marked as “great transformations.”

Moreover, this dissertation explores both spatial and economic global-local connections. The deployment of bodily energy in modern transportation was an immediate response to the rapidly changing world and the rise of a high-velocity and increasingly interconnected economy forced together by the expansion of global imperial powers. They had been technical solutions devised by ordinary small-time agents as they interpreted, analyzed, and internalized the national

anxiety of catching up with other modern powers. The development of these organic transport networks forged new flows and circuits in the development of regionalism on a smaller scale. At the same time, the efforts of local elites and entrepreneurs also interactively shaped the division of labor in the region, as they tried to gather and allocate resources to construct the push-car lines and maintain daily operations. The spatial construction also had cultural implications, as rickshaws and human-powered railroads developed into distinctive regional symbols, which accentuated their value as commodities within national cultures. In sum, this dissertation demonstrates how organic transport was integral to the place-making process of small localities across the Japanese empire in the context of global imperialism.

## REFERENCES

- Abele, Michael Thomas. “Peasants, Skinners, and Dead Cattle: The Transformation of Rural Society in Western Japan, 1600-1890.” Ph.D Dissertation, University of Illinois at Urbana-Champaign, 2018.
- “Akiha Daisuke Hatsumei No Jinrikisha Kakoku No Chūmon Aitsugi Kokunai Deha Daisuke-Sha No Aishōn de Shitashimareru 秋葉大助発明の人力車 各国の注文相次ぎ、国内では大助車の愛称で親しまれる.” *Yomiuri Shinbun*, June 25, 1890.
- Akiha Daisuke II 秋葉大助二代. “Jinrikisha Seizō No Shōrai 人力車製造業の将来.” *Jitsugyō No Sekai 実業之世界*, November 1910.
- . “Jinrikisha 人力車.” *Kyōiku Gahō 教育画報*, 1918.
- . “Seikoku Ni Okeru Jinrikisha Hanro Kakuchō No Tame Shisatsu No Hōkoku Yōkō 清国に於ける人力車販路拡張ノ為視察の報告要項,” n.d. Saitō Toshihiko Private Collection.
- . “Shōhin Toshite No Jinrikisha 商品としての人力車.” *Diamond: Economic Journal ダイヤモンド経済雑誌*, May 1918.
- “Akiha Shōten Catalog 秋葉商店カタログ,” n.d. Saitō Toshihiko Private Collection.
- “Akiha Shōten-Hakurankai Shuppin Kaisetsu 秋葉商店博覧会出品解説,” n.d. Saitō Toshihiko Private Collection.
- Albritton Jonsson, Fredrik. “The Industrial Revolution in the Anthropocene\*.” *The Journal of Modern History* 84, no. 3 (2012): 679–96.
- Alcock, Rutherford. *The Capital of the Tycoon: A Narrative of a Three Year’s Residence in Japan; with Maps and Numerous Illustrations in Chromolithography and on Wood; in Two Volumes. Vol. 2 Vol. 2*. London: Longman, Roberts, & Green, 1863.
- Amamiya Keijirō 雨宮敬次郎. *Kako rokujūnen jiseki 過去六十年事蹟*. Tokyo 東京: Sakurachi Yukio 桜内幸雄, 1907.
- Ambaras, David R. *Japan’s Imperial Underworlds: Intimate Encounters at the Borders of Empire*. Cambridge: Cambridge University Press, 2019.
- Andō Hiroshige 安藤廣重, and Shōtei Kinsui 松亭金水. *Ehon Edo miyage 10 繪本江戸土産 10*. Tokyo 東京: Kuya Kōzaburō 菊屋孝三郎, 1867.
- Angus, Ian. *Facing the Anthropocene: Fossil Capitalism and the Crisis of the Earth System*. New York: Monthly Review Press, 2016.
- “Ansei Ni Nen Shi Gatsu Hatchōbori Zoku Takanawa Minami-Chō Daichi Ezu 安政二年四月八町堀続高輪南町代地絵図,” n.d. National Diet Library 国立国会図書館. info:ndljp/pid/2542351.

- Atami-shi Kyōiku Inkai 熱海市教育委員会 and Atami Onsen-shi Sakusei Jikkō Inkai 熱海温泉誌作成実行委員会. *Shisei shikō 80-shūnen kinen, Atami Onsen shi 市制施行八〇周年記念, 熱海温泉誌*. Atami-shi, Tōkyō: Kabushiki Kaisha Shuppan Bunkasha, 2017.
- Barclay, Paul D. *Outcasts of Empire: Japan's Rule on Taiwan's "Savage Border," 1874-1945*, 2018.
- Barlow, Tani E. "Debates Over Colonial Modernity in East Asia and Another Alternative." *Cultural Studies* 26, no. 5 (2012): 617–44.
- . *Formations of Colonial Modernity in East Asia*. Durham; London: Duke University Press, 1997.
- "Basha Uma No Karōshi Aitsugu 馬車馬の過労死相次ぐ." *Yomiuri Shinbun*, July 30, 1884, sec. Morning.
- Bernstein, Gail Lee. *Isami's House : Three Centuries of a Japanese Family*. Berkeley, CA, USA: University of California Press, 2005.
- Bickers, Robert A, and Christian Henriot. *New Frontiers: Imperialism's New Communities in East Asia, 1842-1953*. Manchester; New York: Manchester University Press Distributed exclusively in the USA by St. Martin's Press, 2000.
- Botsman, Daniel. "Freedom without Slavery? 'Coolies,' Prostitutes, and Outcastes in Meiji Japan's 'Emancipation Moment.'" *The American Historical Review* 116, no. 5 (2011): 1323–47.
- . *Punishment and Power in the Making of Modern Japan*. Princeton: Princeton University Press, 2007.
- . "Recovering Japan's Urban Past: Yoshida Nobuyuki, Tsukada Takashi, and the Cities of the Tokugawa Period." *CCS City, Culture and Society* 3, no. 1 (2012): 9–14.
- Brown, Philip C. *Central Authority and Local Autonomy in the Formation of Early Modern Japan: The Case of Kaga Domain*. Stanford, Calif: Stanford University Press, 1993.
- Bulliet, Richard W. *The Wheel: Inventions & Reinventions*. New York: Columbia University Press, 2016.
- "Business Archives Online 企業史料統合データベース," n.d. Japan Digital Archives Center J-DAC.
- Cai, Huiyu. *Taiwan in Japan's Empire-Building: An Institutional Approach to Colonial Engineering*. New York: Routledge, 2009.
- Campbell, J. F. *My Circular Notes. Extracts from Journals, Letters Sent Home, Geological and Other Notes, Written While Travelling Westwards Round the World, from July 6, 1874, to July 6, 1875*. London: Macmillan and co., 1876.  
<http://catalog.hathitrust.org/Record/008588194>.
- Chakrabarty, Dipesh. "Planetary Crises and the Difficulty of Being Modern." *Millennium: Journal of International Studies* 46, no. 3 (2018): 259–82.
- Chatterjee, Elizabeth. "The Asian Anthropocene: Electricity and Fossil Developmentalism." *The Journal of Asian Studies* 79, no. 1 (2020): 3–24.

- “Che Ya Shaonu 車壓少女.” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, January 15, 1910.
- Chen Chia-Hao 陳家豪. *Jin Dai Taiwan Ren Zi Ben Yu Qi Ye Jing Ying: Yi Jiao Tong Ye Wei Tan Tao Zhong Xin (1895-1954)* 近代台灣人資本與企業經營：以交通業為探討中心 1895-1954= *The Taiwanese Capital and Business Performance in Modern Period: Focusing on Private Transportation Industry, 1895-1954*. Chu ban. Tai bei shi: Zheng da chu ban she, 2018.
- Chen Yan 陳顏 and Li Jieying 李杰穎. *Yan zhu qing gui si yuan zu : wu lai tai che yu tai che bo wu guan de gu shi* 沿著輕軌私遠足：烏來台車與台車博物館的故事. Taipei 臺北市: Xing zheng yuan nong ye wei yuan hui lin wu ju 行政院農業委員會林務局, 2007.
- Chen Yan 陳顏 and Shi Songhan 石松函. *Wu lai tai che shi jian lu xing* 烏來台車時間旅行. Taipei 臺北市: Nong wei hui lin wu ju 農委會林務局, 2009.
- Chen Zhanyi 陳湛頤. *Ribenren fang gang jianwen lu* 日本人訪港見聞錄：1898-1941. 香港: 三聯書店(香港)有限公司, 2005.
- Cherry, Haydon. *Down and out in Saigon: Stories of the Poor in a Colonial City*. New Haven: Yale University Press, 2019.
- Chikamori Takaki 近森 高明. “Dōbustu Aigo no ‘kigen’: Meiji 30 nendai niokeru kutsū he no hairyo to dōbutstu aigo undō 動物愛護の<起源>--明治 30 年代における苦痛への配慮と動物愛護運動.” *Kyoto Journal of Society* 京都社会学年報, no. 8 (2000): 81–96.
- Ching, Leo T. S. *Becoming “Japanese”: Colonial Taiwan and the Politics of Identity Formation*. Berkeley: University of California Press, 2001.
- Cortazzi, Hugh. *Collected Writings of Sir Hugh Cortazzi*. Tokyo; Richmond: Ed. Synapse ; Japan library, 2000.
- Cronon, William. *Nature’s Metropolis: Chicago and the Great West*. New York: W.W. Norton, 1997.
- Crutzen, Paul J. “Geology of Mankind.” *Nature* 415, no. 6867 (2002): 23.
- “Dabei Qingtie Kaiyeshi 打北輕鐵開業式.” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, October 25, 1907.
- Dai Pao-cun 戴寶村. “Jindai Taiwan Gangkou Shizhen Zhi Fazhen Yu Bianqian 近代台灣港口市鎮之發展與變遷.” In *Taiwan Shi Lunwen Jingxuan* 台灣史論文精選, edited by Zhang Yan-xian 張炎憲, Li Xiao-feng 李筱峰, and Dai Pao-cun 戴寶村. Taipei 臺北市: Yushanshe 玉山社, 1999.
- “Dai Shihon Tetsudō No Shutsugan Ga Tsuzuku 大資本鉄道の大資本鉄道の出願が続く.” *Yomiuri Shinbun*, July 7, 1896.
- “Daishafu No Eiyo 台車夫の榮譽.” *Taiwan Nichinich Shinpō* 台灣日日新報, December 18, 1929. No. 10858.
- David Strand. *Rickshaw Beijing: City People and Politics in the 1920s / David Strand*. Berkeley: University of California Press, 1989.

- Davidson, James Wood. *The Island of Formosa, Past and Present: History, People, Resources and Commercial Prospects ...* Taipei: Ch'eng Wen, 1972.
- De Bary, Wm. Theodore, Carol Gluck, and Arthur E Tiedemann, eds. *Sources of Japanese Tradition Vol. 2 1600 to 2000*. New York; Chichester: Columbia University Press, 2006.
- Decauville, Aîné. "Portable Railways." *Scientific American Supplement*, no. 446 (July 19, 1884).
- Deguchi Tomoyuki 出口智之. *Kisha ni notta meiji no bunjintachi \: Meiji no tetsudo kikoshu 汽車に乗った明治の文人たち: 明治の鉄道紀行集*. Tokyo 東京: Kyoiku Hyōron Sha 教育評論社, 2014.
- Duara, Prasenjit. "The Imperialism of 'Free Nations'." In *Imperial Formations*, by Ann Laura Stoler, Carole McGranahan, Peter C Perdue, School for Advanced Research (Santa Fe), and James Currey (1984-2008). Santa Fe; Oxford: School for Advanced Research Press : James Currey, 2007.
- Dussinberre, Martin. *Hard Times in the Hometown: A Microhistory of Modern Japan*. Honolulu: Univ. of Hawai'i Press, 2011.
- Ehlers, Maren A. *Give and Take: Poverty and the Status Order in Early Modern Japan*. S.l.: Harvard University Asia Center, 2021.
- Ericson, Steven J. *The Sound of the Whistle: Railroads and the State in Meiji Japan*. Cambridge Mass.: Council on East Asian Studies, Harvard University, 1996.
- Fabian, Johannes. *Time and the Other: How Anthropology Makes Its Object*. New York: Columbia University Press, 2014.
- "Fengshan Tiedao 鳳山鐵道." *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, October 23, 1907.
- Foucault, Michel, and Jay Miskowiec. "Of Other Spaces." *Diacritics* 16, no. 1 (1986): 22–27.
- Free, Dan. *Early Japanese Railways, 1853-1914: Engineering Triumphs That Transformed Meiji-Era Japan*. Tokyo: Tuttle, 2008.
- Fujiwara Masato 藤原正人 and Meiji Bunken Shiryō Kankōkai 明治文献資料刊行会. *Meiji zenki sangyō hattatsushi shiryō kangyō hakurankai shiryō 明治前期産業發達史資料. 勸業博覽會資料 175*. Tokyo 東京: Meiji Bunken Shiryō Kankōkai 明治文献資料刊行会, 1983.
- "Fukumeisho Mei Ni Yori Kasama Jinsha Kidō o Shisatsu Ni Tsuki 復命書・命により笠間人車軌道を視察に付," April 11, 1926. 3C-48-61. National Archives of Japan 国立公文書館.
- Fung, Chi Ming. *Reluctant Heroes: Rickshaw Pullers in Hong Kong and Canton, 1874-1954 / Chi Ming Fung*. Royal Asiatic Society Hong Kong Studies Series. Hong Kong: Hong Kong University Press ; London, 2005.
- "Futsū Shiken Gōkaku Sha 普通試験合格者." *Taiwan Sōtoku-Fu Kanpō 台灣總督府官報*, May 17, 1919. Taiwan Governor-General Employee Records Database, Institute of Taiwan History, Academic Sinica.

- Ganon, Pieter S. de. "The Animal Economy." Ph.D Dissertation, Princeton University, 2011. UMI 3452597.
- Gao Chuanqi 高傳棋. *Qing dai Taibei jiao tong : chuan shan yue yang guan dong xi 清代臺北交通: 穿山越洋貫東西*. Taipei 臺北市: Taibei Shi wen xian wei yuan hui 臺北市文獻委員會, 2008.
- Gao Xia 高峽. "Jinrikishafu e kakō no genshō nitsuite – Higuchi Ichiyō bungaku no jinrikishafu motif "人力車夫へ「下降」の現象について--樋口一葉文学の人力車夫モチーフ." *Tagen Bunka 多元文化 / Nagoya Daigaku Kokusai Gengō Bunka Kenkyuka 名古屋大学国際言語文化研究科編*, no. 8 (2008): 135–48.
- "Geisha Ga Jinrikisha Wo Norinige? Yokohama 芸者が人力車を乗り逃げ? 横浜." *Yomiuri Shinbun*, September 9, 1875.
- Gieryn, Thomas F. "A Space for Place in Sociology." *Annual Review of Sociology* 26 (2000): 463–96.
- "Ginza No Akiha Daisuke He Chōsenkoku Kara Jinrikisha 2000 Ryō No Chūmon 銀座の秋葉大助へ、朝鮮国から人力車2000両の注文." *Yomiuri Shinbun*, July 6, 1883.
- Goldstone, Jack A. "Efflorescences and Economic Growth in World History: Rethinking the 'Rise of the West' and the Industrial Revolution." *Journal of World History* 13, no. 2 (2002): 323–89.
- . "Gender, Work, and Culture: Why the Industrial Revolution Came Early to England but Late to China." *Sociological Perspectives* 39, no. 1 (1996): 1–21.
- . "Great Divergence and Great Convergence in a Global Perspective." *Social Evolution and History* 15, no. 2 (2016): 194–200.
- . "The Problem of the 'Early Modern' World." *Journal of the Economic and Social History of the Orient* 41, no. 3 (January 1, 1998): 249–84.
- Goree, Robert. "Meisho Zue and the Mapping of Prosperity in Late Tokugawa Japan." *Cross-Currents: East Asian History and Culture Review* 6, no. 2 (2017): 404–39.
- . *Printing Landmarks: Popular Geography and Meisho Zue in Late Tokugawa Japan*, 2020.
- Grinin, L.E., and A.V. Korotayev. "Political Development of the World System: A Formal Quantitative Analysis." In *History & Mathematics: Historical Dynamics and Development of Complex Societies*, edited by Peter Turchin and Rossiiskii gosudarstvennyiĭ gumanitarnyiĭ universitet, 63–114, 2006.
- "Gui Jian Daozhi Shuo 貴賤倒置說." *Shenbao*, October 7, 1890.
- "Gyūma Kokushi Torishimari 牛馬酷使取締." *Yomiuri Shinbun*, August 1, 1901, sec. Chōkan.
- Han-Yu, Chang, and Ramon H Myers. "Japanese Colonial Development Policy in Taiwan, 1895–1906: A Case of Bureaucratic Entrepreneurship." *The Journal of Asian Studies* 22, no. 4 (1963): 433–49.

- Haraway, Donna, Noboru Ishikawa, Scott F Gilbert, Kenneth Olwig, Anna L Tsing, and Nils Bubandt. "Anthropologists Are Talking - About the Anthropocene." *Ethnos* 81, no. 3 (2016): 535–64.
- Hasegawa Masatsugu 長谷川正次 and Tokyo-to Minato Kuritsu Minato Toshokan 東京都港区立みなと図書館. *Bunsei no machi no yōsu Edo machikata kakiage 文政のまちのようす江戸町方書上*. Tokyo 東京: Tōkyō-to Minato kuritsu Minato Toshokan 東京都港区立みなと図書館, 1993.
- Hayashi Wakaki 林若樹. "Jinrikisha to Gyūnabe 人力車と牛鍋." *Nihon to Nihonjin Rinjigō Kaiko Kanbyakunen 日本と日本人・臨時号「回顧半百年」*, September 1917.
- He Feng-jiao 何鳳嬌. "Akashi Shotarō Zai Taiwan de Zhangnao Jingying 赤司初太郎在台灣的樟腦經營." *Taiwan Xue Yanjiu 台灣學研究*, no. 16 (December 2013): 1–40.
- Headrick, Daniel R. *Technology: A World History*. La Vergne, TN: Oxford University Press, 2010.
- Henry, Todd A. *Assimilating Seoul: Japanese Rule and the Politics of Public Space in Colonial Korea, 1910-1945*. Berkeley, California: University of California Press, 2014.
- Henry, Todd A. "Sanitizing Empire: Japanese Articulations of Korean Otherness and the Construction of Early Colonial Seoul, 1905-1919." *The Journal of Asian Studies* 64, no. 3 (2005): 639–75.
- Higashi Ikuzō 東幾藏. "Chaopanshan Yuki No Ishō 角板山行の印象." *Taiwan Tetsudō 台灣鐵道*, September 1029.
- Hirase Tessai 平瀬徹齋, and Hasegawa Mitsunobu 長谷川光信. *Nihon sankai meibutsu zue 2 日本山海名物図会 2*. 東京: 名著刊行会, 1979.
- Hiroi Tatsutarō 広井辰太郎. "Dareka Gyūma No Tameni Namida Wo Sosogu Mono Zo 誰か牛馬のために涙をそそぐ者ぞ." *Taiyō 太陽* 5, no. 17, 18 (1899).
- Hiroshige I (1797-1858). *Tōto Meisho Takanawa No Yūkei 東都名所高輪の夕景 (Famous Places of the East Capital, the Evening View of Takanawa)*. n.d. The Museum of Fine Arts, Boston.
- Hiroshige II. *Tōto Sanjūroku Kei: Takanawa Kaigan 東都三十六景: 高輪海岸 Thirty-Six Scenes of Tokyo, the Takanawa Coast*. 1862. Minat-to Library.
- Howell, David L. *Geographies of Identity in Nineteenth-Century Japan*. Berkeley, Calif.: University of California Press, 2005.
- Howell, David L. "Hard Times in the Kantō: Economic Change and Village Life in Late Tokugawa Japan." *Modern Asian Studies* 23, no. 2 (1989): 349–71.
- Howell, David Luke. *Capitalism from within: Economy, Society, and the State in a Japanese Fishery*. Berkeley: University of California Press, 1995.
- Huang Zunxian 黃遵憲. *Riben Zashi Shi 日本雜事詩*. Changsha 長沙: Fuwentang 富文堂, 1898.



- “Huaqiao Zi Taiwan Zhi Songjin 華僑自台灣之送金.” *Taiwan Riri Xinbao Hanwen Ban 台灣日報新報漢文版*, March 28, 1922.
- “Huaren Shesi Fangzao Dongyangche 華人設肆做造東洋車.” *Shenbao*, April 24, 1874.
- Hübner, Alexander, and Mary Elizabeth Herbert Herbert. *A Ramble Round the World, 1871*. London: Macmillan, 1874. <http://catalog.hathitrust.org/Record/007689200>.
- Huffman, James L. *Down and Out in Late Meiji Japan*. Place of publication not identified: University of Hawai'i Press, 2019.
- Hur, Nam-lin. *Prayer and Play in Late Tokugawa Japan: Asakusa Sensōji and Edo Society*. Cambridge, Mass.: Harvard University Asia Center : Distributed by Harvard University Press, 2000.
- Ike Susumu 池享, Sakurai Ryōju 桜井良樹, Jinnai Hidenobu 陣内秀信, Nishiki Kōichi 西木浩一, and Yoshida Nobuyuki 吉田伸之, eds. *Miru yomu aruku Tōkyō no rekishi 2 Tsūshihen Edo jidai みる・よむ・あるく東京の歴史2 通史編 江戸時代*. Tokyo 東京: Yoshikawa Kōbunkan 吉川弘文館, 2017.
- Ishii Ryōsuke 石井良助. *Edo no machibugyō 江戸の町奉行*. Tokyo 東京: Akashishoten 明石書店, 2012.
- Itakura Kiyonobu 板倉聖宣. “Edo fukkō ni katsuyaku shita daihachiguruma wa yokuatsu manugareru 江戸復興に活躍した大八車は抑圧免れる.” *Kagaku Asahi 科学朝日 / 朝日新聞社 [編]*. 51, no. 4 (1991): 82–86.
- . “Shitsugyōshita Kagokakitachi Wa Zenin Ga Jinrikishafu Ni Nareta 失業した駕籠舁たちは全員人力車夫になれた.” *Kagaku Asahi 科学朝日*, 1991.
- Iwada Kōtarō 岩田浩太郎. “Toshi keizai no tenkan 都市経済の転換.” In *Toshi no jidai 都市の時代*, edited by Nobuyuki Yoshida 吉田伸之. Tokyo 東京: Chūō Kōronsha 中央公論社, 1992.
- Jeong Youngsil 鄭英實. “The Joseon Missions to Japan and Japanese Intellectuals at the Beginning of the Eighteenth Century 18世紀初頭の朝鮮通信使と日本の知識人.” *Kaisai University Institutional Repository*, March 31, 2011. <http://jairo.nii.ac.jp/0161/00003432>.
- “Jinrikisha Hatsumei? No Beijin Senkyōshi Shazei No Ichibu Wo Gunmōin He Kifu Shitai to Tokyofu Ni Shutsugan 人力車発明? の米人宣教師、車税の一部を訓盲院へ寄付したいと東京府に出願.” *Yomiuri Shinbun*, November 7, 1878.
- “Jinrikisha Hatsumeijin Kinenhi 人力車発明人記念碑.” *Nihon Shinbun 日本新聞*, July 29, 1899.
- “Jinrikisha Hikiko Shikaku Seigen o Ronsu 人力車挽子資格制限を論ず.” *Keisatsugan 警察眼*, 1893.
- “Jinrikisha Iharu 人力車行はる.” *Fūzoku Gahō Rinji Zōkan (Yokohama Meisho Zue) 風俗画報 臨時増刊(横浜名所図会)*, n.d. National Diet Library 国立国会図書館.

- “Jinrikisha Moto Sōgyōji e Shazei No Naka 人力車元總行事へ車税の中, Jinrikisha Moto Sōgyōji Tangan No Gi Nitsui Ukagai 人力車元惣行事歎願之儀に付伺い.” Ōkurashō 大藏省 Ministry of Finance, December 1873. 2A-25-886. National Archives of Japan 国立公文書館.
- “Jinrikisha Ni Kawaru Beki Risōteki Shin Norimono Arawaru 人力車に代わるべき理想的新乗物現はる (The Ideal Replacement of Rickshaws Appeared).” *Jitsugyō No Nihon 実業之日本*, May 1914.
- “Jinrikisha No Hatsumeisha Reiraku o Kimekomu -- Onkyū Kafu o Gikai Ni Kengi Sen Tosu 人力車の発明者零落を極む一恩給下付を議会に建議せんとす.” *Hōchi Shinbun 報知新聞*, January 6, 1896.
- “Jinrikisha No Kaizō 人力車の改造.” *Gakutō 學鐙*, 1897.
- “Jinrikisha No Ryūhei 人力車の流弊.” *Yomiuri Shinbun*, December 15, 1881.
- “Jinrikisha No Yushutsu Juyō Chi Singapore No Densha Fusetsu Ni Yori Chūmon Ga Ochi 人力車の輸出 需要地シンガポールの電車敷設により注文ガタ落ち.” *Yomiuri Shinbun*, December 10, 1904.
- Jinrikisha Postcard Collection*. Unknown. Meiji Shinbun Zasshi Bunku Collection Tokyo University.
- “Jinrikisha Sōseisha Jyushō 人力車創製者受賞.” *Tokyo Nichinichi Shinbun 東京日日新聞*, April 1, 1899.
- “Jinrikisha Torishimari Hō Ni Tsuite 人力車取締法に就て.” *Keisatsugan 警察眼 Keisatsu Kyōkai 警察協会*, September 1897.
- “Jinrikisha Yushutsu No Keiteki 人力車輸出の勁敵.” *Asahi Shinbun*, September 18, 1901.
- “Jinrikishafu Torishimari Kisoku No Taishō 人力車夫取締規則の対照.” *Keisatsu Kyōkai Zasshi 警察協会雑誌*, 1904.
- Jun Uchida. *Brokers of Empire: Japanese Settler Colonialism in Korea, 1876-1945*. Cambridge, Mass: Harvard University Asia Center, 2011.
- Jung, Moon-Ho. *Coolies and Cane: Race, Labor, and Sugar in the Age of Emancipation*. Baltimore: Johns Hopkins University Press, 2006.
- Jütte, Daniel. “Entering a City: On a Lost Early Modern Practice.” *Urban Hist. Urban History* 41, no. 2 (2014): 204–27.
- Ka, Chih-ming. *Japanese Colonialism in Taiwan: Land Tenure, Development, and Dependency, 1895-1945*. Boulder, Colo.: Westview Press, 1998.
- Kagayama Ikumitsu 加賀山生光. “Shisetsu Tetsudō Mandan 私設鐵道漫談.” *Taiwan Tetsudō 台灣鐵道*, no. 236 (February 1, 1932): 14–16.
- “Kaigai Ni Okeru Nihon Jinrikisha Singapore de Kyūzō 海外における日本人力車 シンガポールで急増、馬車は減少.” *Yomiuri Shinbun*, March 27, 1899.

- Kanagawa-ken Kikaku Chōsabu Kenshi Hensanshitsu 神奈川県企画調査部県史編集室, ed. *Kanagawa kenshi. Shiryō hen 18 神奈川県史資料編 18*. Yokohama-shi 横浜市: Kanagawa-ken 神奈川県, 1975.
- Kanno Chūgorō 菅野忠五郎. “Kidō Daisha Yō Seido Sōchi Oyobu Ranfu Ni Tsuite 軌道臺車用制動装置及「ランフ」に就いて.” *Taiwan Tetsudō 台灣鐵道*, June 1919.
- . “Kidō Oyobi Kyōkai Ni Taisuru Chūyi Oyobi Kibō 軌道及び協会に対する注意及び希望.” *Taiwan Tetsudō 台灣鐵道*, June 1, 1919.
- . “Kidō to Gisha 軌道と牛車.” *Taiwan Tetsudō 台灣鐵道*, February 1919.
- . “Teoshi Keibin Tetsudō No Shōrai 手押輕便鐵道之将来.” *Taiwan Tetsudō 台灣鐵道*, July 1915.
- “Kasama Jinsha Kidō Keiei Ni Kansuru Ken Gushin 笠間人車軌道經營に関する件具申,” December 27, 1924. 3C-48-61. National Archives of Japan 国立公文書館.
- Katsushika Kyōiku Iinkai 葛飾教育委員会, and Shibamata chiiki bunkateki keikan chōsa iinkai 柴又地域文化的景觀調査委員会. *Katsushika-Shibamata Chiiki Bunkateki Keikan Chōsa Hōkokusho 葛飾・柴又地域文化的景觀調査報告書*. Katsushika Kyōiku Iinkai 葛飾教育委員会, 2015.
- Kawai Chūzō 川合忠蔵. “Ichiryū Manbai Megumi Ni Megumi 一粒万倍恵に恵.” In *Nihon Nōsho Zenshū Dai 29 Kan 日本農書全集 第29卷*. Tokyo 東京: Nō-san-gyoson Bunka Kyōkai 農山漁村文化協会, 1982.
- Kawai Yasu 河井やす. “Jinrikisha No Gai 人力車の害.” *Kijo No Tomo 貴女之友*, 1888.
- “Keibin Re-Ru Oyobu Fuzokuhin o Taiwan Sōtokufu He Hōkan Tankan No Ken 輕便レール及付属品を台湾總督府へ保管轉換の件,” October 1909. 陸軍省壹大日記. National Archives of Japan 国立公文書館.
- Ker, William P. “Treaty Revision in Japan: A Survey of the Steps by Which the Abolition of Foreign Privilege Was Accomplished in the Island Empire.” *Pacific Affairs* 1, no. 6 (1928): 1–10.
- “Kidō Gyōsha Konwa Kai 軌道業者懇話會.” *Taiwan Tetsudō 台灣鐵道*, May 1, 1920.
- Kikuchi, Yūko. “Introduction.” In *Refracted Modernity: Visual Culture and Identity in Colonial Taiwan*. Honolulu: University of Hawaii Press, 2007.
- . *Refracted Modernity: Visual Culture and Identity in Colonial Taiwan*. Honolulu: University of Hawaii Press, 2007.
- Kim, John Namjun. “The Temporality of Empire the Imperial Cosmopolitanism of Miki Kiyoshi and Tanabe Hajime.” In *Pan-Asianism in Modern Japanese History*, edited by Sven Saaler and Koschmann, 151–67. London: Routledge, 2007.
- King, Anthony D. *Colonial Urban Development: Culture, Social Power and Development*. London: Routledge, 2007.

- Kitada Koji 北田晃司. “Shokuminchi jidai no Taiwan ni okeru toshi shisutemu no henyō: Chōsen to no hikaku o tsushite 植民地時代の台湾における都市システムの変容--朝鮮との比較を通して.” *Jinbun chiri* 人文地理/人文地理学会編. 56, no. 3 (2004): 223–42.
- Knapp, Ronald G. *China’s Island Frontier: Studies in the Historical Geography of Taiwan*. Honolulu: University Press of Hawaii: Research Corp. of the University of Hawaii, 1980.
- “Kōbe Zairyū No Eikokujin Ga Jinrikisha 160 Dai Wo Hong Kong He 神戸在留の英国人が人力車 160 台を香港へ.” *Yomiuri Shinbun*, July 8, 1882.
- Kōbun-sha 弘文社 and Kōeki-sha 公益社. *Tōkyō kōshō meikan: Bijutsu kōgei* 東京工匠名鑑: 美術巧藝, 1930.
- Kodama Kōta 児玉幸多. “Edo no ushi koya 江戸の牛小屋.” *Nihon rekishi* 日本歴史, no. 151 (1961): 23–26.
- . *Kinsei kōtsū shiryōshū* 近世交通史料集 3. Tokyo 東京: 吉川弘文館 Yoshikawa Kōbunkan, 1969.
- Koga Kunio 古賀くにお. “Jinrikisha 人力車.” *Rinen* 林苑, 1994.
- Kokubu Saitō 国府犀東. “Jinrikisha Hash Iron 人力車廢止論.” *Taiyō* 太陽 7, no. 5 (May 1901).
- “Kōshikan Oyobu Ryōjikan Hōkoku: Jinrikisha Seizōsha No Chūyi Subeki Ken 公使館及領事館報告: 人力車製造者ノ注意スヘキ件.” *Kanpō* 官報, March 10, 1893.
- “Kōshikan Oyobu Ryōjikan Hōkoku: Shamurokoku Jinrikisha Eigyō Kisoku Seitei 公使館及領事館報告.” *Kanpō* 官報, November 26, 1902.
- “Kōshikan Oyobu Ryōjikan Hōkoku: Singapore Honpō Sei Jinrikisha Jyuyō Jyōkyō 公使館及領事館報告: 新嘉坡本邦製人力車需要狀況.” *Kanpō* 官報, November 6, 1905.
- Kubota Gorō 窪田五郎. *Nihon gyūshi* 日本牛史. Yokohama 横浜: Koyasu Nōen Shuppan Bu 子安農園出版部, 1930.
- “Kuli Baoxing 苦力暴行.” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, September 7, 1905.
- Kumai Tamotsu 熊井保. “Edo no ushi kasegi [fu Ushimoshi Kyūki no utsushi] 江戸の牛稼ぎ [含「牛持旧記之写」].” *Kokuritsu Rekishi Minzoku Hakubutsukan* 国立歴史民俗博物館研究報告, 1987, 119–88.
- Kuni Takeyuki 國雄行. *Hakuraikai no jidai: Meiji seifu no hakurankai seisaku* 博覧会の時代: 明治政府の博覧会政策. Tokyo 東京: Iwada Shoen 岩田書院, 2005.
- “Kuruma Issai No Goyō Wa Kabushiki Kaisha Tokyo Ginza Akiha Shōten 車・一切の御用は株式会社東京銀座秋葉商店.” *Norimono* 乗りもの, 1923.

- “Kuruma No Ue de Kenka No Danjo Shafu Ga Kajibō Hanashi, San Nin Ha Kuruma Goto Kawa He Tenraku Tasukaru/Yokohama 車の上でけんかの男女、車夫が梶棒放し、3人は車ごと川へ転落、助かる / 横浜.” *Yomiuri Shinbun*, July 14, 1882.
- “Kyū Edo Shuin Nai Zu 旧江戸朱印内図.” n.d. 654-02-02-07(ZA-113). Tokyo Metropolitan Archive.
- Lane-Poole, Stanley, and F. V Dickins. *The Life of Sir Harry Parkes, K.C.B. and G.C.M.G., Sometime Her Majesty's Minister to China & Japan*. London: Macmillan, 1894.
- Lefebvre, Henri. *The Production of Space*. Oxford, OX, UK; Cambridge, Mass., USA: Blackwell, 1991.
- Liao, Binghui, and Dewei Wang. *Taiwan under Japanese Colonial Rule, 1895-1945: History, Culture, Memory*. New York: Columbia University Press, 2006.
- Lin Yuru 林玉茹. *Qingdai Taiwan gangkou de kongjian jiegou 清代台灣港口的空間結構*. Taipei 臺北市: Zhi Shu Fang 知书房出版社, 1996.
- Low, Morris. *Building a Modern Japan: Science, Technology, and Medicine in the Meiji Era and Beyond*. New York, NY: Palgrave Macmillan, 2005.  
<http://public.ebib.com/choice/publicfullrecord.aspx?p=307647>.
- Makida Shiimatsu 牧田椎松. “Jinrikisha Hattatsu Shi 人力車發達史 (一) .” *Norimono 乗りもの*, February 1920.
- “Makie No Futari Nori Jinrikisha Noriai Yō Ni Singapore Nado He Yushutsu 蒔絵の2人乗り人力車 乗り合い用にシンガポールなどへ輸出.” *Yomiuri Shinbun*, November 16, 1904.
- Malm, Andreas. *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming*. London; New York: Verso, 2017.
- Marks, Robert. *The Origins of the Modern World: A Global and Environmental Narrative from the Fifteenth to the Twenty-First Century*, 2020.
- Marx, Leo. *The Machine in the Garden*. London ; New York: Oxford university press, 2000.
- Marx, Leo, and Merritt Roe Smith. *Does Technology Drive History?: The Dilemma of Technological Determinism*. Cambridge, Mass: MIT Press, 2011.
- Massey, Doreen B. “In What Sense a Regional Problem.” In *Space, Place and Gender*. Hoboken: Wiley, 2013.
- . *Space, Place and Gender*. Hoboken: Wiley, 2013.  
<http://liverpool.ebib.com/patron/FullRecord.aspx?p=1584059&entityid=urn:mace:eduser.v.org.uk:athens:provider:liv.ac.uk>.
- . “The Responsibilities of Place.” *The Journal of the Local Economy Policy Unit* 19, no. 2 (2004): 97–101.
- Matsui Nama 松井生. “Jinrikishafu No Torishimari Nit Suite 人力車夫の取締に就て.” *Keisatsu Kyōkai Zasshi 警察協会雑誌*, February 1904.

- Matsumura, Wendy. *Limits of Okinawa: Japanese Capitalism, Living Labor, and Theorizations of Okinawan Community*. Place of publication not identified: Duke University Press, 2015. <http://site.ebrary.com/id/11024963>.
- Matsuoka Hiroyuki 松岡広之. *Nihon tetsudō an naiki 日本鉄道案内記*. Tokyo 東京: Matsuoka Hiroyuki 松岡広之, 1899.
- McClain, James L. *Kanazawa: A Seventeenth-Century Japanese Castle Town*. New Haven: Yale University Press, 1982.
- McClain, James L, John M Merriman, and Kaoru Ugawa. *Edo and Paris: Urban Life and the State in the Early Modern Era*. Ithaca, N.Y.: Cornell University Press, 1994.
- McClain, James L, and Osamu Wakita. *Osaka: The Merchant's Capital of Early Modern Japan*. Ithaca: Cornell University Press, 1999.
- McNeill, John Robert. *Something New under the Sun: An Environmental History of the Twentieth-Century World*. New York: W.W. Norton & Company, 2000.
- McNeill, John Robert, and Peter Engelke. *The Great Acceleration: An Environmental History of the Anthropocene Since 1945*, 2016.
- McShane, Clay, and Joel Tarr. *The Horse in the City: Living Machines in the Nineteenth Century*. Baltimore: Johns Hopkins University Press, 2011.
- Meiji Hennenshi Hensankai 明治編年史編纂會. *Shinbun shūsei Meiji hennenshi 新聞集成明治編年史*. Tokyo 東京: Rinsensha 林泉社, 1936.
- “Me-Ta-Tsuki No Jinrikisha メーター付の人力車 (Meter-Attached Rickshaws).” *Tokyo Nichinichi Shinbun*, August 17, 1877.
- Mikhail, Alan. “Enlightenment Anthropocene.” *Eighteenth-Century Studies* 49, no. 2 (2016): 211–31.
- Miller, Ian Jared. *Nature of the Beasts: Empire and Exhibition at the Tokyo Imperial Zoo*. Place of publication not identified: University of California Press, 2021.
- Minami Kazuo 南和男. *Edo no machi bugyō 江戸の町奉行*. Tokyo 東京: Yoshikawa Kōbunkan 吉川弘文館, 2005.
- Minato Kyōdo Shiryōkan(tōkyōto Minato Kuritsu)港郷土資料館(東京都港区立). *Edo dōbutsu zukan: Deau kurasu mederu : Kaikan nijisshūnen kinen tokubetsuten 江戸動物図鑑: 出会う・暮らす・愛でる: 開館二十周年記念特別展*, 2002.
- “Miyagi Dentetsu Hoka 8 Sha, Miyagi-Ken, Matsuyama Jinsha Kidō 軌道・宮城電鉄他 8 社宮城県・松山人車軌道,” n.d. 3C-27-76300-050. National Archives of Japan 国立公文書館.
- Miyamoto Mataji 宮本又次, ed. *Ōsaka no kenkyū dai 5-kan. Fūzokushi no kenkyū, Kōnoike Ke no kenkyū 大阪の研究第 5 巻風俗史の研究・鴻池家の研究*. Osaka 大阪: Seibundō Shuppan Kabushiki Kaisha 清文堂出版株式會社, 1970.
- Miyamoto Matao 宮本又郎. *Kigyōkatachi no chōsen 企業家たちの挑戦*. Nihon no kindai 日本の近代. Tokyo 東京: Chūkō Bunko 中公文庫, 2013.

- Miyao Shigeo 宮尾しげを. *Edo kobanashishū 江戸小咄集*. Tokyo 東京: Heibonsha 平凡社, 1971.
- Montanari, Massimo. *The Culture of Food*. Oxford: Blackwell, 1994.
- Morris, Andrew D. *Japanese Taiwan: Colonial Rule and Its Contested Legacy*. London ; New York: Bloomsbury Academic, 2015.
- Motoi Kimura 木村礎, ed. *Kyūdaka kyūryō torishirabechō 旧高旧領取調帳*. Tokyo 東京: Tōkyōdō Shuppan 東京堂出版, 1995.
- Mumford, Lewis. *The Myth of the Machine: Technics and Human Development*. London: Secker and Warburg, 1967.
- “Nagasaki No Shigaichi Tōro No Ishidatami Ga Kanryō Jinrikisha Zei de Hiyō Makanau 長崎の市街地道路の石畳が完了、人力車税で費用賄う。” *Yomiuri Shinbun*, September 1, 1876.
- Nagasegawa Settan 長谷川雪旦. *Edo meisho zue san dai-ichi-kan san satsu 江戸名所図会三第一卷三冊*. Edited by Saitō Chōshū 齋藤長秋. Tokyo 東京: Hakubunkan 博文館, 1893.
- Naikaku tōkeikyoku 内閣統計局 and Nakamura Takafusa 中村隆英, eds. *Nihon teikoku tōkei nenkan 日本帝国統計年鑑*. Tokyo 東京: Tōyō Shorin, Hara Shobō 東洋書林: 発売原書房, 1996.
- Nakamura, Takafusa, and Kōnosuke Odaka. *The Economic History of Modern Japan, 1600-1990*. New York: Oxford University Press, 2003.
- “Nangui Zhigan 南歸誌感.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, April 13, 1906. No.2382.
- Nenzi, Laura. *Excursions in Identity: Travel and the Intersection of Place, Gender, and Status in Edo Japan*. Honolulu: University of Hawai'i Press, 2008.
- Nihon Renga Seizō Kabushiki Gaisha 日本煉瓦製造株式会社. *Nihon renga hyakunenshi 日本煉瓦100年史*. Tokyo 東京: Nihon Renga Seizō 日本煉瓦製造, 1990.
- “Ninpu Wa Jinrikisha Ya Basha Nado Ni Noruna Ryūsan Wo Kizukai Utsumi Tadakatsu Nagasaki Ken Gonrei Ga Yutatsu 妊婦は人力車や馬車などに乗るな 流産を気遣い、内海忠勝・長崎県権令が諭達。” *Yomiuri Shinbun*, July 12, 1878, sec. Chōkan.
- Noguchi Katsuichi 野口勝一. “Jinrikisha No Hatsumei 人力車の発明.” *Fūzoku Gahō 風俗画報*, October 1896.
- “Noriai Basha No Gyosha Ni Shaken Seido Dōnyū e 乗合馬車の御者に試験制度導入へ。” *Yomiuri Shinbun*, December 15, 1881, sec. Chōkan.
- Obinata Sumio 大日方純夫. *Jiyū minkenki no shakai 自由民権期の社会*. Tokyo 東京: Keibunsha 敬文舎, 2012.
- Oikawa Yoshinobu 老川慶喜. *Nihon tetsudōshi. Bakumatsu Meiji hen : jōkisha mokei kara tetsudō kokuyūka made 日本鉄道史. 蒸気車模型から鉄道国有化まで*. Tokyo 東京: Chūō Kōron Shinsha, 2014.

- Ōkurashō. Kanzeikyoku 大蔵省關稅局. *Dai Nihon gaikoku bōeki nenpyō* 大日本外国貿易年表  
*Annual return of the foreign trade of the Empire of Japan*. Tokyo 東京: Ōkurashō  
Kanzeikyoku 大蔵省關稅局, 1882.
- Ōkurashō 大蔵省, ed. *Nihon zaisei keizai shiryō*. 3 日本財政經濟史料. 卷3. Tokyo 東京:  
Zaiseikeizaigakkai 財政經濟学会, 1924.
- Ono Takeo 小野武雄. *Edo bukka jiten* 江戸物価事典. Tokyo 東京: Tenbōsha 展望社, 2009.
- Osterhammel, Jürgen. *The Transformation of the World: A Global History of the Nineteenth  
Century*, 2014.
- Ōtomo 大友 Genkurō 源九郎. *Ba ji nenshi* 馬事年史. Vol. 3. Tokyo 東京: Hara Shobō 原書房,  
1985.
- Parenti, Christian, and Jason W Moore. *Anthropocene or Capitalocene?: Nature, History, and  
the Crisis of Capitalism*, 2016.
- Parthasarathi, Prasanna. *Why Europe Grew Rich and Asia Did Not: Global Economic  
Divergence, 1600-1850*. Cambridge: Cambridge University Press, 2014.
- Partner, Simon. *The Mayor of Aihara: A Japanese Villager and His Community, 1865 to 1925*.  
Berkeley: University of California Press, 2009.
- Phillips, David Peter. “Intersections of Modernity and Tradition: An Urban Planning History of  
Tokyo in the Early Meiji Period (1868-1888).” Ph.D Dissertation, University of  
Pennsylvania, 1996.
- Pomeranz, Kenneth. “Introduction: World History and Environmental History.” In *The  
Environment and World History*, edited by Edmund Burke and Kenneth Pomeranz, 3–32.  
Berkeley: University of California Press, 2009.
- . *The Great Divergence: China, Europe, and the Making of the Modern World Economy*.  
Princeton, N.J.: Princeton University Press, 2000.
- “Qichuan Zhi Jihe 汽船之積荷.” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版,  
December 27, 1904.
- “Qingtie Liren 輕鐵轆人.” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, June 26,  
1908.
- “Quandao Qingbian Tiedao 全島輕便鐵道.” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢  
文版, September 6, 1910.
- Reilly, Michael. *Narrow Gauge Railways of Taiwan: Sugar, Shays and Toil*. Chippenham:  
Mainline & Maritime, 2017.
- “Rikiēki Kōshi 力役工資.” *Taiwan Nichinichi Shipō* 台灣日日新報, December 19, 1909.
- “Rikisha for Bournemouth.” *The Rising Generation* 英語青年, November 1921.
- Rimmer, Peter James. *Structure, Conduct and Performance of the Rickshaw Industry in East and  
South East Asian Cities, 1869-1939*, 1989.
- Roberts, Luke Shepherd. *Performing the Great Peace Political Space and Open Secrets in  
Tokugawa Japan*. Honolulu: University of Hawai‘i Press, 2012.  
<http://muse.jhu.edu/books/9780824861155/>.



- Rogaski, Ruth. *Hygienic Modernity Meanings of Health and Disease in Treaty-Port China*. Berkeley: University of California Press, 2004.
- Roy, Toulouse Antonin. “‘The camphor question is in reality the savage question’: indigenous pacification and the transition to capitalism in the taiwan borderlands (1895-1915).” *Critical Historical Studies* 6, no. 1 (2019): 125–58.
- Sagano Hikotarō 嵯峨野彦太郎. “Dainihon zenzu : shintetsudō kikō oyobi sekkei senro 大日本全圖: 新鐵道起工及設計線路.” Tokyo 東京: Kanda hakō 神田發行, 1896.
- Saitō Gesshin 齋藤月岑, ed. *Tōto Saiji Ki Aki 4 東都歳時記秋 4*. Edo 江戸: Suharaya Mohee Suharaya Ihach 須原屋茂兵衛 須原屋伊八, 1838.
- Saitō Toshihiko 齊藤俊彦. *Jinrikisha no kenkyū 人力車の研究*. Tōkyō: Mikishobō, 2014.
- Saitō Wadō 齋藤和堂. *Atami to gojyū meika 熱海と五十名家*. Tokyo 東京: Seiwadō 精和堂, 1920.
- Saitō Yasuhiko 齋藤康彦. *Chihō zaibatsu no kindai: Kōshū zaibatsu no kōbō 地方財閥の近代: 甲州財閥の興亡*. Tokyo 東京: Iwata Shoin 岩田書院, 2009.
- Sakurai Yoshiaki 桜井芳昭. “Kinsei Owari No Binbō Sha to Daihachi-Guruma 近世尾張の貧乏車と大八車.” *Kyōdo Bunka 郷土文化* 50(2), no. 174 (1995): 58–68.
- Sansan Bunbō 三三文房. *Meiji Nijyūsan Nen Tokyo Hyakuji Bin 明治廿三年東京百事便*. Sansan Bunbō 三三文房, 1890.
- Sasa Tōkō 佐々東紅. “Rōryoku Jyūkyū No Chōsetsu 労力需給の調節.” *Taiwan Kōgyōkai 臺灣工業界*, October 15, 1919.
- Satya, Laxman D. “British Imperial Railways in Nineteenth Century South Asia.” *Economic and Political Weekly* 43, no. 47 (2008): 69–77.
- Schivelbusch, Wolfgang. *The railway journey: the industrialization of time and space in the 19th century*. Berkeley, Calif.: University of California Press, 1986.
- Screech, Timon. “The Strangest Place in Edo. The Temple of the Five Hundred Arhats.” *Monumenta Nipponica* 48, no. 4 (1993): 407–28.
- “Seikōshita Otto Omomuku Tomo Kasegi Bidan 成功した夫赴共稼ぎ美談.” *Shūfu No Tomo 主婦の友*, July 1925.
- Seishichi Owariya 尾張屋清七, and Kageyama Muneyasu 景山致恭. “Edo Kiriezu: Tsukiji Hatchōbori Nihonbashi Minami Ezu 江戸切絵図 築地八町堀日本橋南絵図.” 1862 1849. National Diet Library 国立国会図書館. info:ndljp/pid/1286660.
- “Seiyō Demo Jinrikisha Ryūkō Senbin Goto Ni Sudai Zutsu o Funazumi 西洋でも人力車が流行? 船便ごとに数台ずつを船積み.” *Yomiuri Shinbun*, June 29, 1881.
- Seow, Victor. “Fuels and Flows: Rethinking Histories of Transport and Mobility through Energy.” *Transfers* 4, no. 3 (2014): 112–16.
- “Shafu No Shūnyū 車夫の収入.” *Asahi Shinbun*, March 25, 1907, sec. Chōkan 朝刊.

- “Shibakuruma-Chō Ushimochi Kaganchi Myōgakin 芝車町牛持河岸地冥加金.” Kyūbakufu hikidsukisho: Tenpō senyō ruishū [268] dai 95 jō chōnin shogan no bu jō 旧幕府引継書: 天保撰要類集[268]第 95 上町人諸願の部上, n.d. National Diet Library.
- Shiden Hensanjo 史伝編纂所. *Tōkyō Yokohama isshūkan annai 東京横浜一週間案内*. Tokyo 東京: Shiden Hensanjo 史伝編纂所, 1901.
- Shihōshō daijn kanbō chōsaka 司法省大臣官房調査課. *Tokugawa jidai saiban jirei keiji no bu 徳川時代裁判事例. 刑事ノ部*. Shihō shiryō 221. 東京: 司法省調査課, 1937.
- “Shikan Oyobu Ryōjikan Hōkoku: Eiryō Kaikyō Shokuminchi Jinrikisha Jyuyō No Jyōkyō 使館及領事館報告: 英領海峽植民地人力車需要ノ狀況.” *Kanpō 官報*, November 26, 1895.
- “Shina Honkoku He Nagareru Kane Taiwan Kara Ichinen Ni Hajyūroku Man Yo Yen Dekasegi No Shafu Ga Okuru 支那本国へ流れる金 台湾から一年に八十六万余円 出稼ぎの車夫が送る.” *Taiwan Nichinich Shinpō 台灣日日新報*, March 28, 1922.
- “Shinsen Tokyo Meisho Zue No. 33 新撰江戸名所図会 3 3.” *Fūzoku Gahō (Rinji Zōkan) 風俗画報 (臨時増刊)*, 1902.
- Shintarō Yabe 矢部, 信太郎. *Kindai meishi no omokage. 1 近代名士之面影. 第 1 集*. Tokyo 東京: Chikuhakusha 竹帛社, 1914.
- “Shisetsu Tetsudō Hojo Hō Hikaku Chō 私設鉄道補助法比較調.” Zaiseibu 財政部, January 12, 1935. National Archives of Japan 国立公文書館.
- “Shōgi Ga Daidō Ni Suwatte Tannka/Yokohama 娼妓が大道に座つてたんか / 横浜.” *Yomiuri Shinbun*, March 9, 1876.
- Shoji Katsuhiko 東海林 克彦. “Hiroi Tatsutarō (moto Tōyō Daigaku Kyōjyū no dōbutsu aigo shisō ni kansuru kankyō ronrigaku teki kōsatsu 広井辰太郎(元東洋大学教授)の動物愛護思想に関する環境倫理的考察.” *Kankōgaku Kenkyū 観光学研究*, no. 8 (2009): 95–103.
- Shōsai Ikkei 昇齋一景. *Tokyō sanjūrokkei Kyōbashi 東京三十六景 京橋*. 1871. 36.1\*25.0. 83200171. Edo Tokyo Museum. Tokyo Digital Museum.
- Stanley, Amy. *Selling Women Prostitution, Markets, and the Household in Early Modern Japan*. Berkeley: University of California Press, 2012.  
<http://public.eblib.com/EBLPublic/PublicView.do?ptiID=913760>.
- . *Stranger in the Shogun's City: A Japanese Woman and Her World*, 2020.
- Sudō Yoshizō. *Fujiokaya nikki. Dai 7-kan 藤岡屋日記. 第 7 卷 第 7 卷*. Edited by Suzuki Tōzō 鈴木棠三 and Koike Shōtarō 小池章太郎. 東京: San'ichi Shobō 三一書房, 1990.
- Suematsu Kenchō 末船謙澄. “Jinrikisha No Ron 人力車ノ論.” In *Ishin Taika Bunshō: Fuhyō Kan 3 維新大家文抄 附評卷 3*, edited by Matsumoto Mannen 松本万年. Onkodō 温故堂, 1877.

- Suisui Shiina 椎名翠水. *Keisei densha ensen annai 京成電車沿線案内*. Chiba 千葉: Kokumin Shinbun Shikyoku 国民新聞支局, 1921.
- Sunder Rajan, Kaushik. *Lively Capital: Biotechnologies, Ethics, and Governance in Global Markets*. Durham: Duke University Press, 2012.
- “Taiche Kuli Quefa 台車苦力缺乏.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, April 6, 1920. No.7119.
- “Taiche Lisha Xiaoer 臺車轢殺小兒.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, January 28, 1908.
- “Taiche Yache Renfu Xiang Hsinchu Jun Tichu Tanyuan 臺車押車人夫向新竹郡提出歎願.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, November 6, 1928.
- “Taichung Jiancha Migu 台中檢查米穀.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, July 25, 1905.
- “Taichung Nantou Jian Daolu Jihua 台中南投間道路計劃.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, February 17, 1906.
- “Taichung Nantou Qingtie Wenti 台中南投輕鐵問題.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, January 24, 1906.
- “Taichung Nantou Zhi Qingtie 台中南投之輕鐵.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, March 9, 1906.
- “Taichung Qingbian Tiedao Huishe 台中輕便鐵道會社.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, December 28, 1907.
- “Taichung Qingbian Tiedao 台中輕便鐵道.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, November 9, 1906.
- “Taichung Qingbian Tiedao 台中輕便鐵道.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, November 10, 1906.
- “Taichung Qingtie Huishe Zhi Chuangli Zonghui 台中輕鐵會社之創立總會.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, August 12, 1906.
- “Taichung Qingtie Huishe Zonghui 台中輕鐵會社總會.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, March 27, 1907.
- “Taichung Qingtie Huishe 台中輕鐵會社.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, May 12, 1909.
- “Taichung Qingtie Jihua 台中輕鐵計劃.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, February 14, 1908.
- “Taichung Qingtie Yibu Kaitongshi 台中輕鐵一部開通式.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, November 14, 1906.
- “Taichung Tingxia Zhi Jianmisuo 台中廳下之檢米所.” *Taiwan Riri Xinbao Hanwen Ban 台灣日日新報漢文版*, August 26, 1905.

- “Tainan Huhuan 台南虎患.” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, September 3, 1905.
- “Taishaku Jinshatetsudō Kaisha Archive (TJK) 帝釈人車鉄道会社關係資料,” n.d. 葛飾区郷土と天文の博物館 Katsushika City Museum.
- “Taiwan Guidao Zhengyi: Laodongzhe de Shengli Dan Sihu Beipian De 台灣軌道爭議：勞動者得勝利但似乎被騙的.” *Taiwan Minbao* 台灣民報, December 9, 1928.
- “Taiwan Jigyō Kōsai Ho Go Shomei Genhon Meiji 32 Horitsu No.75 台灣事業公債法・御署名原本・明治三十二年・法律第七十五号,” n.d. National Archives of Japan.
- “Taiwan Liyizhe Shenghuo Zhuangtai 台灣力役者生活狀態.” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, September 23, 1910.
- “Taiwan Sishe Tiedao Xianzhuang 台灣私設鐵道現狀.” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, September 10, 1910.
- Taiwan sōtoku-fu tetsudōbu 台灣總督府鐵道部. “Taiwan Tetsudō Oyobu Kidō Jikan Chingin Oyobu Ritei Hyō 1915 臺灣鐵道及軌道時間、賃金及哩程表 1915,” 1915.
- . *Taiwan tetsudō shi* 臺灣鐵道史. Place of publication not identified: publisher not identified, 1910.
- . *Tetsudōbu Nenpō* 鐵道部年報. Taiwan sōtoku-fu tetsudōbu 台灣總督府鐵道部, n.d.
- Takahashi Shōtei 高橋松亭. “Higashi Katsushika-gun Shibamata-mura Taishakuten maite no zu 東葛飾郡柴又村帝釈天詣の図.” *Fūzoku Gahō* 風俗画報, no. 73 (June 10, 1894): 26.
- Takahashi Yasuo 高橋康夫 and Yoshida Nobuyuki 吉田伸之. *Nihon toshishi nyūmon* 日本都市史入門. Tokyo 東京: Tōkyō Daigaku Shuppankai 東京大学出版会, 1989.
- “Takanawa Minami-Chō Goyōchi Ikken 4 Kan [4]高輪南町御用地一件 4 卷 [4],” n.d. National Diet Library 国立国会図書館. info:ndljp/pid/2611002.
- Takemura Itaru 竹村到. “Shibaguchi Gomon Shibaguchi-Bashi No Fushigi 芝口御門芝口橋の不思議.” *Minato Kutsu Minato Kyōdo Shiryōkan Dayori* 港区立港郷土資料館だより, no. 73 (2014): 2.
- Takezawa Yoshitarō 武澤贊太郎. *Taiwan Shisetsu Tetsudō Kidō Hōki Ruishū* 台灣私設鐵道軌道法規類集. Taipei 臺北: Taiwan Ryokō Annaisha Shuppan Bu 臺灣旅行案内社出版部, 1932.
- “Taoyuan Guidao Chengli 桃園軌道成立.” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, January 8, 1920.
- “Taoyuan Jinshi: Qingtie Kuozhang 桃園近事：輕鐵擴張.” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, August 30, 1911.
- “Taoyuan Zazu: Qingbian Tiedao 桃園雜俎：輕便鐵道.” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, July 10, 1910.

- Tarō Uemon 太郎右衛門. “Shinten Edo No Zu 新添江戸之図.” 1657. Kokusai Nihon Bunka Kenkyū Center. [http://lapis.nichibun.ac.jp/chizu/santoshi\\_1255.html](http://lapis.nichibun.ac.jp/chizu/santoshi_1255.html).
- . “Shinten Edo No Zu 新添江戸之図.” 1657. National Diet Library 国立国会図書館. <https://dl.ndl.go.jp/info:ndljp/pid/2542711>.
- Tavares, Antonio C. “The Japanese Colonial State and the Dissolution of the Late Imperial Frontier Economy in Taiwan, 1886-1909.” *The Journal of Asian Studies* 64, no. 2 (2005): 361–85.
- Tenmei Rōjin Takumi 天明老人 and Andō Hiroshige 安藤廣重. *Kyōka Edo meisho zue 狂歌江戸名所圖會*. Place of publication not identified: publisher not identified, 1856. [info:ndljp/pid/8369325](https://dl.ndl.go.jp/info:ndljp/pid/8369325).
- Teraya Hiroshi 照屋宏. “Kidō Gyōsha Ni Nozomu 軌道業者に望む.” *Taiwan Tetsudō 台灣鐵道*, May 1, 1920.
- Tetsudōshō 鐵道省. *Nihon tetsudō shi : ge-kan 日本鐵道史: 下卷*. Tokyo 東京: Tetsudōshō 鐵道省, 1921.
- . “Tetsudōshō nenpō 鐵道省年報.” 鐵道省年報, n.d.
- Thomas, Julia Adeney, Mark Williams, and J. A Zalasiewicz. *The Anthropocene: A Multidisciplinary Approach*, 2020.
- . “The Anthropos of the Anthropocene.” In *The Anthropocene: A Multidisciplinary Approach*, 2020.
- Tochiki shishi hensan iinkai 栃木市史編さん委員会, ed. *Tochigi shishi. Shiryō hen, kin-gendai 2 栃木市史 史料編 近現代 2*. 栃木: 栃木市, 1983.
- “Tōkaidō Chinsen Gairyaku Hyō (Ninsoku Kago Jinrikisha Shariki) 東海道賃錢概略表 (人足・駕籠・人力車・車力),” November 1871. Kyūbutsu 5-1856-123. Butsuryū hakubutsukan 物流博物館.
- Tokyo daigaku shiryō hensansho 東京大学史料編纂所, ed. *Dai Nihon kinsei shiryō. Shichū torishimari ruishū shichū-torishimari no bu 3 大日本近世史料. 市中取締類集 市中取締之部 3*. 東京: 東京大學出版會, 1974.
- . *Dainihon ishin shiryō kōhon maikuroban shūsei : tōkyō daigaku shiryō hensanjo shozō 大日本維新史料稿本マイクロ版集成: 東京大学史料編纂所所蔵*. Maruzen Tokyo Daigaku Shuppankai 丸善 (発売), 東京大学出版會, 1997.
- “Tokyo Metropolitan Archive (Tokyo-to Kōmonjokan),” n.d.
- Tōkyōfu 東京府. “Gofunai Basue Ōkan Sonohoka Enkaku Zusho [6] Jyūroku Ka 御府内場末往還其外沿革圖書. [6]拾六下.” Tokyo 東京, September 1846. 10.11501/9370094. National Diet Library 国立国会図書館. [info:ndljp/pid/9370094](https://dl.ndl.go.jp/info:ndljp/pid/9370094).
- . “Tōkyōfu gunku zenzu 東京府郡区全図.” Tokyo 東京: Seikadō 清華堂, 1896.
- Tōkyōshi Nihonbashiku 東京市日本橋区. “御府内場末往還其外沿革圖書 十六下 Gofunai basue ōkan sonohoka enkaku zusho jyūroku ka.” In *Kanpō kokenzu kaisetsu – gofunai*

- ōkan sonohoka enkaku zusho Nihonbashi no bu* 寛保沽券図解説 御府内場末往還其外沿革図 日本橋之部 Reprinted in *Shinshū Nihonbashi kushi* 新修日本橋区史. Tokyo 東京: 東京市日本橋区, 1937.
- Tōkyō-to Kōbunshokan 東京都公文書館. *Edo no Ushi* 江戸の牛. Toshi kiyō 都史紀要 32. Tokyo 東京: Tōkyō-to Kōbunshokan 東京都公文書館, 2003.
- . *Tōkyō basha tetsudō* 東京馬車鉄道. Tokyo 東京: Tokyoto 東京都, 1989.
- . “Ushimochi Kyūden 牛持旧伝; Ushimochi 芝車町牛持関係書類.” In *Edo no Ushi* 江戸の牛. Toshi kiyō 都史紀要 32. Tokyo 東京: Tōkyō-to Kōbunshokan 東京都公文書館, 2003.
- Tokyo-to Minato Kuyakusho 東京都港区役所. *Minato kushi* 港区史. Tokyo 東京: Minato Kuyakusho 港区役所, 1960.
- Tōkyō-to Minato Kuyakusho 東京都港区役所, Japan), ed. *Minato-ku shi* 港区史 4. Tokyo 東京: Tōkyō-to Minato Kuyakusho 東京都港区役所, 1960.
- Tōkyō-to Shiba-ku 東京都芝区, Japan), ed. *Shiba-ku shi* 芝区史. Tokyo 東京: Tōkyō-shi Shiba Kuyakusho 東京市芝区役所, 1938.
- Tōkyōto 東京都. *Genroku no machi* 元禄の町. Toshi Kiyō 28. Tokyoto 東京都, 1981.
- . *Tōkyō shishikō. shigai 14* 東京市史稿 市街篇第 14. Tokyo 東京: Tokyoto 東京都, 1973.
- . *Tōkyō shishikō. shigai 51* 東京市史稿 市街篇第 51. Tokyo 東京: Tokyoto 東京都, 1973.
- , ed. *Tokyoshi shikō sangyōhen Vol. 7* 東京市史稿産業篇 7. Tokyoto 東京都, 1960.
- “Tōsha Jigyō 糖社事業.” *Taiwan Nichinichi Shipō* 台灣日日新報, October 22, 1909.
- Traganou, Jilly. *The Tōkaidō Road: Travelling and Representation in Edo and Meiji Japan*. London: Routledge, 2011.
- Tsai Lung-pao 蔡龍保. “Guo Ying Chu Xian – Rizhi Shiqi Taiwan Qiche Yunshuye Fazhan de Yige Zhuanzhe 國營初現—日治時期汽車運輸業發展的一個轉折.” *Guoshiguan Xueshu Jikan* 國史館學術集刊, no. 16 (2007): 1–47.
- . “Rizhi Chuqi Taiwan de Daolu Shiye 日治初期臺灣的道路事業.” *Guoshiguan Xueshu Jikan* 國史館學術集刊, no. 7 (March 2006): 85–129.
- Tsou WanLing 鄒婉玲. “Development of Pulled Rickshaw During the Japanese Colonial Period in Taipei 日治時期臺北地區人力車之發展.” Master Thesis, National Chung Hsing University, 2013.
- Tsukada Takashi 塚田孝. *Kinsei oosaka no hō to shakai* 近世大坂の法と社会. Osaka: Seibundō 清文堂, 2007.
- Tuan, Yi-Fu. *Space and Place: The Perspective of Experience*. Minneapolis: University of Minnesota Press, 2002.

- Uchimura Tajirō 内村達次郎. “Jinrikisha No Kairyō o Nozomu Kōgyō 人力車の改良を望む工業.” *Kōgyō 工業 Kōgyō Kairyō Kyōkai Shuppan Bu Kōgyō Gakuin 工業改良協會出版部工業學院*, July 1909.
- “Ueno Senichi Shi No Taiwan-Banashi 上野專一氏の台湾話.” *Asahi Shinbun*, March 25, 1892.
- “Uma o Kakoku Ni Atsuwanu Yōni Keishichō Ga Basha Gyōsha Ni Naiyu 馬を過酷に扱わぬよう警視庁が馬車業者に内諭.” *Yomiuri Shinbun*, May 5, 1890, sec. Chōkan.
- Uno Umekichi 宇野梅吉. “Ronsetsu Oyobi Hōkoku Zusō Jinsha Tetsudō Sokuryō Hōkoku 論説及報告 豆相人車鐵道測量報告.” *工學會誌*, May 1892.
- . “Zusō Jinsha Tetsudo No Kigen 豆相人車鐵道ノ起原.” *Kōdan Zasshi 工談雜誌*, March 1892.
- . “Zusō Jinsha Tetsudō Sokuryō Gaikai 豆相人車鐵道測量概景.” *Kōdan Zasshi 工談雜誌*, May 1892.
- . “Zusō Jinsha Tetsudō Sokuryō Gaikyō 豆相人車鐵道測量概況.” *Kōdan Zasshi 工談雜誌 Kōdakai 工談會*, April 1892.
- “Ushimochi kyūki 牛持旧記.” In *Edo no ushi kasegi [fu Ushimochi Kyūki no utsushi] 江戸の牛稼ぎ*, 119–88. Kokuritsu Rekishi Minzoku Hakubutsukan 国立歴史民俗博物館研究報告. Kokuritsu Rekishi Minzoku Hakubutsukan 国立歴史民俗博物館, 1987.
- Utawaga Hiroshige II 歌川広重 二代. *Tokaidō Mesho No Uchi, Takanawa Ōkido 東海道名所之内高輪大木戸*. 1863. 36\*24.5 cm. National Diet Library 国立国会図書館. info:ndljp/pid/1309476.
- Utawaga Hiroshige III 歌川広重 三代. *Tetsudō Basha Ōfuku Kyōbashi Renga Tsukuri Yori Take Kagan Zu 鐵道馬車往復京橋煉瓦造ヨリ竹河岸図*. 1882. Postal Museum Japan 郵政博物館. <https://www.postalmuseum.jp/collection/genre/detail-161567.html>.
- . *Tōkyō Yatsuyama Shita Kaigan Jōkisha Tetudō No Zu 東京八ツ山下海岸蒸気車鐵道之図 (Picture of the Steam Railway in Takanawa Coast in Tokyo)*. October 1871. Tokyo Metropolitan Library 東京都立図書館. [https://www.library.metro.tokyo.lg.jp/portals/0/edo/tokyo\\_library/modal/index.html?d=5400](https://www.library.metro.tokyo.lg.jp/portals/0/edo/tokyo_library/modal/index.html?d=5400).
- Utawaga Hiroshige 歌川広重. *Edo Meisho Shiki No Nagame Takanawa Tsuki No Kei 江戸名所四季の眺め 高輪月の景*. 19M. (右)36.3×24.1,(中)36.5×24.1,(左)36.3×24.1. Digital Collections of Keio University Libraries. <https://dcollections.lib.keio.ac.jp/ja/ukiyoe/0451>.
- . *Tōto Hakkei: Takanawa Shūgetsu 東都八景高輪秋月*. 1839. 22.2 x 32.9 cm. MFA06936. Boston Fine Art Museum.

- . *Tōto Meisho Takanawa Tsuki No Kei 東都名所高輪月の景*. 19M. 24.8\*34.7. Digital Collections of Keio University Libraries. <https://dcollections.lib.keio.ac.jp/ja/ukiyoe/0448>.
- . *Tōto Shiba Hakkei: Takanawa Kihan 東都司馬八景高輪帰帆*. n.d. 23.3×34.4. Digital Collections of Keio University Libraries. <https://dcollections.lib.keio.ac.jp/ja/ukiyoe/0432>.
- . *東都名所高輪二十六夜待遊興之図 Tōto Meisho Takanawa Njūroku Yamachi Yūkyō No Zu*. 1842 1841. Kishie 錦絵, 36.7\*25.0. Edo Tokyo Museum. Tokyo Digital Museum. <https://www.edohakuarchives.jp/detail-4534.html>.
- Utawaga Sadahide 歌川貞秀. *Tōkaidō Takanawa Fūkeio 東海道高輪風景*. 1862. 75\*37 cm.
- Utawaga Yoshitora 歌川芳虎. *Jinrikisha 人力車*. 1871. Adachi City Museum 足立区立郷土博物館. [https://jmapps.ne.jp/adachitokyo/det.html?data\\_id=562](https://jmapps.ne.jp/adachitokyo/det.html?data_id=562).
- Vlastos, Stephen. *Peasant Protests and Uprisings in Tokugawa Japan*. Berkeley and Los Angeles, California: University of California Press, 1986.
- Wang, Taisheng. *Legal Reform in Taiwan Under Japanese Colonial Rule, 1895-1945: The Reception of Western Law*. Seattle: University of Washington Press, 2015.
- Wang Xue-xin 王學新. “Rizhi Qianqi Taoyuan Diqu Zhi Zhinao Ye Yu Fandi Tuozhi 1895-1920 日治前期桃園地區之製腦業與蕃地拓殖 1895-1920.” *Taiwan Wenxian 台灣文獻* 63, no. 1 (March 2012): 58–100.
- Warren, James Francis. “Living on the Razors Edge: The Rickshawmen of Singapore between Two Wars, 1919-1939.” *Bulletin of Concerned Asian Scholars* 16, no. 4 (1984): 38–51.
- . *Rickshaw Coolie: A People's History of Singapore, 1880 - 1940*. Singapore University Press, 2003. <http://researchrepository.murdoch.edu.au/18286/>.
- Watanabe Keiichi 渡邊恵一. “Shokumin Jiki Taiwan Seitōgyō Niokeru Kansho Unyu 植民時期臺灣製糖業における甘蔗運輸.” *Keiei Shigaku 経営史学* 52, no. 1 (2017): 24–45.
- Wigen, Kären. *A Malleable Map: Geographies of Restoration in Central Japan, 1600-1912*. Berkeley and Los Angeles, California: University of California Press, 2010.
- . *The Making of a Japanese Periphery, 1750-1920*. Berkeley, Calif.: University of California Press, 1995.
- Wittner, David G. *Technology and the Culture of Progress in Meiji Japan*. London; New York: Routledge, 2008.
- Wright, Gwendolyn. *The Politics of Design in French Colonial Urbanism*. Chicago: University of Chicago Press, 1991.
- Wrigley, E. A. *Energy and the English Industrial Revolution*. Cambridge; Madrid: Cambridge University Press, 2010.
- Xiong, Ying. *Representing Empire. Japanese Colonial Literature in Taiwan and Manchuria*. Leiden: Koninklijke Brill NV, 2015.
- Yamada Kaneji 山田兼次. *Atami fūdoki zoku 熱海風土記 続*. Itō 伊東: Izushinbunsha 伊豆新聞社, 1979.



- “Yamashiro-Marū Tsumini 山城丸積荷.” *Taiwan Nichinich Shinpō* 台灣日日新報, January 9, 1903.
- Yanagita Kunio 柳田国男. *Meiji Taisho Shi Seisō-hen* 明治大正史 世相篇. Tokyo 東京: Asahi Shinbunsha 朝日新聞社, 1930.
- Yen I-fang 顏義芳. “Keelung Yanjia Yu Taiwan Kuangye Kaifa 基隆顏家與台灣礦業開發.” *Taiwan Wenxian* 台灣文獻 62, no. 4 (April 2011): 105–30.
- “Ying Ye Yi Ban 營業一斑.” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, August 7, 1908.
- “Yokohama-Marū Nyūkō Tsumini 横浜丸入港積荷.” *Taiwan Nichinich Shinpō* 台灣日日新報, February 11, 1905.
- Yokoyama Yuriko 横山百合子. *Edo Tokyo no Meiji Ishin* 江戸東京の明治維新. Tokyo 東京: Iwanamishoten 岩波書店, 2018.
- Yonemoto, Marcia. *Mapping Early Modern Japan: Space, Place, and Culture in the Tokugawa Period (1603-1868)*. Berkeley: University of California, 2005.
- . “Nihonbashi, Edo’s Contested Center.” *East Asian History*, no. 17–18 (1999): 49–70.
- Yoshida Nobuyuki 吉田伸之. “Edo no machi to nanushi 江戸の町と名主.” In *Miru yomu aruku Tōkyō no rekishi* みる・よむ・あるく東京の歴史, edited by Ike Susumu 池享, Sakurai Ryōju 桜井良樹, Jinnai Hidenobu 陣内秀信, Nishiki Kōichi 西木浩一, and Yoshida Nobuyuki 吉田伸之. Tokyo 東京: Yoshikawa Kōbunkan 吉川弘文館, 2017.
- , ed. *Shirizu santo. Edokan* シリーズ三都江戸巻. Tokyo 東京: Tōkyō Daigaku Shuppan Sha 東京大学出版会, 2019.
- . *Toshi: edo ni ikiru* 都市: 江戸に生きる. Tokyo 東京: Iwanamishoten 岩波書店, 2015.
- , ed. *Toshi no jidai* 都市の時代. Tokyo 東京: Chūō Kōronsha 中央公論社, 1992.
- Yoshida Nobuyuki 吉田伸之 and Itō Takeshi 伊藤毅, eds. *Infura* インフラ. Tokyo 東京: Tōkyō Daigaku Shuppan Sha 東京大学出版会, 2010.
- “Yūjyo Ni Nigerareta Yūkaku No Shujin Otoko to Ainori Suru Kuruma Wo Mitsuke Futari Wo Keisatsu He/Tokyo 遊女に逃げられた遊郭の主人 男と相乗りする車を見つけ2人を警察へ / 東京.” *Yomiuri Shinbun*, April 21, 1881.
- “Yushutsu Jinrikisha Kōkyō Singapore Nado Kara Rikuzoku to Chūmon 輸出人力車が好況 シンガポールなどから陸続と注文.” *Yomiuri Shinbun*, March 27, 1899.
- Zanasi, Margherita. *Saving the Nation: Economic Modernity in Republican China*. Chicago: University of Chicago Press, 2006.
- Zenkoku unyu rengōkai 全国運輸連合会. *Zenkoku Tetsudō Saikin Rihyō* 全国鉄道最近哩表. Tokyo 東京: Zenkoku unyu rengōkai 全国運輸連合会, 1912.
- “Zuixin Diaocha Zhi Yunfei Biao 最新調査之運費表.” *Taiwan Riri Xinbao Hanwen Ban* 台灣日日新報漢文版, July 13, 1906.