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Pluralizing Postcoloniality from a Standpoint of Margins:
A Historical Detour of Global Health, Imperial Regime, and Postwar Taiwan

by
Shinyi Hsieh

DISSERTATION
Submitted in partial satisfaction of the requirements for degree of
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History of Health Sciences

in the

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of the
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Shinyi Hsieh

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Pluralizing Postcoloniality from a Standpoint of Margins: A Historical Detour of Global Health and Imperial Regimes in Postwar Taiwan through the Traces of the Marginalized

Shinyi Hsieh

Abstract

Global health is never conducted in a detached, placeless laboratory. This dissertation delves into the overlooked history of Taiwan as a pivotal postcolonial laboratory for the U.S.-led global health campaign in the post-World War II era. How did this island, since the postwar period, become strategically significant yet historiographically neglected? Taking a postcolonial detour, this dissertation focuses on the marginalized aspects of the island, which served as a crucial hub for U.S.-led global health initiatives from the onset of the postwar period. Taiwan, along with other islands, played a role in shaping and sustaining the United States as a de-territorialized global power throughout the 20th century. To challenge prevailing historical narratives that primarily highlight expertise and success in Taiwan, a postcolonial feminist approach is adopted. The study centers around three marginalized actors, examining how powerlessness intersected with the U.S.-Sino cooperative regime in global health during postwar Taiwan. As Taiwan was already situated on the fringes of global health and academia, this dissertation further highlights the marginalized within the marginalized: children, monkeys, and female technicians of Taiwan, all involved in global trachoma campaigns in the postwar period. Their postcolonial trajectories are brought to light. Through the lens of marginalized actors, the argument is made that a logic of coloniality persisted on the island throughout this process, stemming from the Japanese colonial legacy, the Cold War agenda of Nationalist China and the United States, as well as the colonial conduct of U.S. scientists towards Native American children in the early 20th century. Primary sources include archival collections and historical documentation from the U.S., Taiwan, and Japan. The findings begin by examining the postcolonial imperial regime and the politico-economic power structure in Taiwan following the postwar transition from Japanese colonial rule to U.S.-Sino cooperation. In Chapter Two, the focus is on how Taiwanese children played a central role in the WHO-UNICEF trachoma program, transitioning from recipients of treatment to caregivers, health trainees, and financial donors over the course of

nearly two decades. Chapter Three explores transnational connections between two marginalized groups of children in Taiwan and the Native American Nation, facilitated by global collaborative research on trachoma virus and vaccine in the postwar period. This chapter unveils layers of silence and exposes the logic of coloniality driven by imperial, racial, and capitalist objectives that sustained the intellectual and technical exchanges across countries, as well as the unethical practices and the dispossession experienced by marginalized communities across borders. Chapter Four shifts the focus to the encounters between the indigenous Taiwan Monkey and the imperial powers of the U.S., Japan, and the UK. It reveals how the Taiwan Monkey became subject to scientific study and incorporated into colonial projects, illustrating the imperial accumulation within the realm of modern science through the collection and utilization of animal species from the mountains, fieldwork, vaccine trials, urban pet stores, and zoological trades. Chapter Five centers around the life history of LIN Shou-Yin (林壽英), also known as Christine Yang (1943–Present), a Taiwanese-Hakka woman and former NAMRU-2 technician in the virology laboratory conducting trachoma virus research from 1965 to 1967. This chapter challenges conventional notions of significance and triviality concerning scientists and technicians, male and female, Whiteness and Yellowness, in historical writing and archiving. It responds to the fact that female technicians often left scant archival records of their lives and careers. Additionally, this chapter highlights how local Taiwanese women leveraged their temporary and often unseen scientific work at NAMRU-2, turning it into a steppingstone for professional migration to the U.S. during the martial law era in Taiwan when international travel was generally prohibited. The epilogue explores a postcolonial response to the imperial regime through the history of the Northern American Taiwanese Medical Association (NATMA). The current free clinic programs of NATMA in Latin America and the Caribbean have their roots in the overseas ethnic radical movements in the United States since the 1960s. The transnational identity of NATMA plays a pivotal role in shaping how Taiwanese medical diasporas perceive and engage in global health practices. The stories of postwar Taiwan will always be complex due to its significance as a hub for numerous global public health programs, research endeavors, and the political interests of various imperial powers. This complexity encourages critical examination of our own historical practices in terms of engaging with archives, narratives, perspectives, and cultivating connections that extend beyond borders, fostering a global solidarity rooted in justice with other historically marginalized and suffering communities.

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INTRODUCTION

In 1954, the average trachoma infection rate among school children was 77.34 percent when the program first started; after few years of implementation, the infection rate has dropped to about 30 percent until 1961.

Taiwansheng Tongzhi, 1972¹

In 1972, *Taiwansheng Tongzhi* (台灣省通志), the leading Taiwan local chronicle, highlighted the success of trachoma control in Taiwan. In the six pages they wrote on trachoma control, the chronicle amplified the global health research conducted by the US Naval Medical Research Unit Two (NAMRU-2) and two experts sent to Taiwan by the World Health Organization (WHO)-United Nations International Children's Emergency Fund (now United Nations Children's Fund; UNICEF) with several statistical tables describing the chronological surveys.²

Trachoma, an infectious eye disease, poses a significant public health concern in the postwar era, potentially leading to visual impairment, loss of vision, and even irreversible blindness. In the late 1950s, the World Health Organization (WHO) estimated that approximately 500 million people, accounting for one-sixth of the world's population,

¹ The significance of *Taiwansheng Tongzhi* see Ching-Hu Lin. "A Comparative Study of Compilation of *Taiwansheng Tongzhigao*'s and *Taiwansheng Tongzhi*'s "Library"," *Taiwan Historica* 61, no. 4 (2010): 161-196; Tsun-min Chang and Feng-kwei Pien, "A Brief Recording of Discussion on Geography and the Compilation of Historical Record/Seminar on the Functions of the Documentation Activities of NanKang Historical Documents," *Correspondence of Taiwan History and Relics* 33 (1998): 161-169.

² *Taiwansheng Tongzhi* mentioned the establishment of an island-wide epidemiological research on trachoma by WHO visiting scholar Dr. Fakhry A. Assaad, a public health statistician in Taiwan during 1960. The documentation also includes an earlier visiting ophthalmologist Dr. S. Maffe L. who was also assigned by the WHO-UNICEF to design the school health program on trachoma control in Taiwan. See *Taiwansheng Tongzhi*, "Chapter Five: Diseases Control," Section on Political Affairs and Health (Volume 3), *Taiwansheng Tongzhi*, 350-356. Taipei: Historical Records Committee of Taiwan Provincial Government, 1972.

particularly in regions outside Europe and North America were affected by trachoma.³ At that time, the precise pathogenesis of trachoma remained unclear until the 1970s. Alongside efforts to enhance sanitation systems and promote personal hygiene, scientists presumed that trachoma was caused by a virus and endeavored to develop a vaccine for its eradication. However, the viral assumption regarding trachoma was proven incorrect in the 1970s, thanks to advancements in DNA and RNA techniques. It was discovered that trachoma is actually caused by the bacterium *Chlamydia trachomatis*.⁴

Trachoma control in Taiwan was characterized as a huge success in health achievement for the Nationalist Chinese government's governance in Taiwan after World War II in the governmental publication entitled *Taiwan Health: 1968 and 1969*. I found the statistic, "trachoma—the incidence rate has dropped to 2.4 percent,"⁵ in this report. Along with that statistical statement, the report included a color photo of a local health professional giving eye drops to a child who was sitting on their mother's lap. Unlike *Taiwansheng Tongzhi*, *Taiwan Health* was published in English by the Nationalist Chinese government. For a society in which English was neither a formal nor common spoken language in the 1960s, perhaps the targeted audience was not the local Taiwanese people. Rather, this publication was most likely a presentation of the outcome of the public health reconstruction supported by international and

³ J. Thomas Grayston, San-Pin Wang, Robert L. Woolridge, E. Russel. Alexander, "Prevention of Trachoma with Vaccine," *Archives of Environmental Health: An International Journal* 8, no. 4 (1964): 518-526.

⁴ Mehrdad Mohammadpour, Mojtaba Abrishami, Ahmad Masoumi, and Hassan Hashem, "Trachoma: Past, present and future," *J Curr Ophthalmol* 28, no. 4 (2016):165-169. The disease history of trachoma see Paul Tower, "The history of trachoma: its military and sociological implications," *Archives of Ophthalmology* 69, no. 1 (1963): 123-130. The isolation of *C trachomatis* in pure culture and the understanding of its deoxyribonucleic acid (DNA) and ribonucleic acid (RNA) components proved that *chlamydia trachomatis* is bacterium and the cause of trachoma.

⁵ Department of Health, Taiwan Province. *Taiwan Health: 1968--1969*. Taipei: Department of Health, Taiwan Province, ROC.

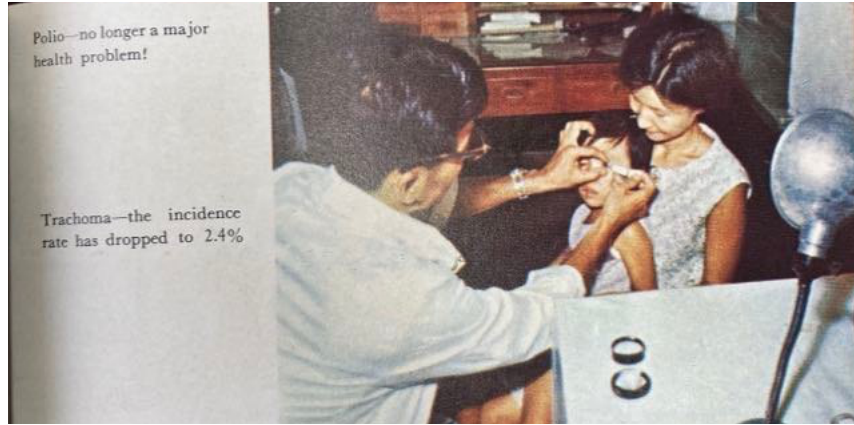


Figure 1.1: *Taiwan Health: 1968 and 1969*. Taipei: Department of Health, Taiwan Provincial Government, Republic of China (ROC).

foreign agencies. Filled with praise of the success of trachoma control in Taiwan, the two locally authoritative historical documents discussed above highlighted the contributions of the nation-state, health professionals, quantitative evidence, and international assistance.

The year 1971 is crucial for Taiwan's changing position in global health. On the one hand, the WHO had announced that Taiwan was no longer a trachoma-endemic area; on the other, Communist China replaced Nationalist China in Taiwan to become China's only legitimate representative in the United Nations.⁶ Since then, Taiwan has also been marginalized in the global health realm, with scholars finding no apparent reason to touch on the global health histories around Taiwan since trachoma and other infectious diseases were technically eliminated or at least controlled. The postwar story was reduced to a linear process toward modern prosperity since trachoma was framed as a leading cause of "economic blindness" among youth in developing countries in the postwar period.⁷ From the standpoint of the marginalized, I

⁶ UN. General Assembly (26th sess. : 1971). Restoration of the lawful rights of the People's Republic of China in the United Nations. Session 26 Resolution 2758. Action note on Oct 25, 1971, United Nations Digital Library, <https://digitallibrary.un.org/record/192054?ln=en>. Yu-Chih Hou, Gale A. Oren, Muh-Shy Chen, Fung-Rong Hu, "History and development of ophthalmology. Taiwan," *Journal of the Formosan Medical Association* 115, no. 12 (2016): 1025-1031.

⁷ The detailed analysis of trachoma as a major cause of economic blindness, see Chapter 3. Regarding the social history of the dynamic between the state, educators, and school health surrounding the postwar trachoma control, see

suggest that the current de-politicized historical narratives limit our understanding of the complicated history of global health on this island.⁸ Postwar Taiwan was more than a global health version of a model minority for solving trachoma and other disease epidemics.

This dissertation takes a postcolonial detour into the marginalized of the currently neglected island that served as a crucial spot for the US-led global health campaigns since the beginning of the postwar period. Global health is global, but it is also situational. As postcolonial STS studies suggest,⁹ we need “to locate and specify in this way the globalist dreams of their own subject matter—that is, to situate technoscience within differing global, or at least multi-sited, imaginaries, using postcolonial perspectives.”¹⁰ My examination centers on marginalized scientific actors in the trachoma global health campaign in postwar Taiwan. Schoolchildren, female technicians, and experimental monkeys native to Taiwan are the discursive sites for this dissertation. Through the lens of marginalized actors, I argue that a logic of coloniality continued to operate in Taiwan during this process, emerging from the Japanese colonial legacy, Nationalist China's nationalist agenda, and the U.S. Cold War Policy. In addition to the prevalence of tropical disease epidemics on the island, previous colonial history, current nation

Shu-ching Chang, “State and Children's Health: Primary School Health Education in Taiwan in the 1950s and 1960s,” *Academia Historica* 24 (2010): 89-138, and Lin-keng Wang, “ri zhi ji zhan hou tai wan de sha yan fang zhi dui ce (Trachoma control Strategy during Japanese Colonial and Postwar Taiwan),” Master thesis, National Changhua University of Education, 2011; On the role of international organization, see Chang Shu-ching, “Shijie weisheng zuzhi yu 1950 niandai taiwan hu lizhuanye zhi fazhan,” in Yen-chiou Fann (ed.), *Modern Medicine in Taiwan*. Taipei: National Taiwan University Publisher, 2020, 335-375. The historiography on history of trachoma in Colonial Taiwan see Chapter 2.

⁸ See David Hui-Kang Ma, “Eradicating trachoma: The experience in Taiwan.” *Taiwan journal of ophthalmology* vol. 6, no. 2 (2016): 53-54; Maggie Black, *Children first: The Story of UNICEF, Past and Present* (Australasia: Macmillan, 1996); Department of Health, Taiwan Province. *Gonggong weisheng fenghua yunyong: bai jian weisheng zhongyao dang'an xuanji* (The Flourishing of Public Health: A Selection of 100 Important Health Archives). Taipei: Department of Health; National Archives Administration, 2007; Hui-Te Hu and Fung-Rong Hu, “Review of Trachoma Control in Taiwan,” *ACTA Societatis Ophthalmologicae Sinicae* 49, no. 3 (2010): 267-272.

⁹ Warwick Anderson and Vincanne Adams, “Pramoedya's Chickens: Postcolonial Studies of Technoscience,” in *The Handbook of Science and Technology Studies*, Edward J. Hackett, Olga Amsterdamska, Michael Lynch, and Judy Wajcman eds., 181–207 (Cambridge, MA: MIT Press, 2007).

¹⁰ Anderson and Adams, 2007, 193.

building agendas as well as the increasing internationalization of scientific collaborations and an anti-communist alliance emergent in the postwar period were also interconnected. As modernity pluralizes, so is the making of postcoloniality. This dissertation aims to show how every marginalized history matters, that postcoloniality is plural.

The interconnectedness of marginalized communities occurred throughout global health programs and research extending beyond national borders. I suggest that linking the “local” and micro examinations of the marginalized actors in postwar global health leads us to see a broader and “transnational” connected dispossession and dislocation among marginalized communities across the regions in the postwar period. Under the huge postwar umbrella of postwar US-Sino cooperation, aside from the island-wide public health reconstruction, the island’s past served US military purposes and legitimized Nationalist China’s authoritarian violence; It also tied into the legacy of Japanese colonialism. The Taiwanese marginalized actors’ postcolonial encounters with this imperial regime also created unexpected leverage and frictions, laying the groundwork for their own resistance, and thus, my current research from a standpoint of Taiwan.

Centering the Global Margins: Postcolonial Feminist Approach and Critical East Asia as a Method

In the East Asian context, the postwar refers to a combination of World War II, the Korea War, the Chinese Civil War, and moving into the Cold War era. As Taiwanese intellectual Kuan-Hsing Chen has declared, “the cold war carried within itself moments of disruption and continuity, whereby U.S. neoimperialism both disrupted and continued Japanese colonialism.”¹¹ This deserved more scholarly attentions to engage with the history of science and medicine in postwar Taiwan because it could contribute to an interdisciplinary scholarship of histories and social studies on science, medicine, and global health embedded in the United States, East Asia, Southeast Asia, and their historical relations. A main argument in Taiwanese intellectual Kuan-Hsin Chen’s *Asia as Method* is that the Cold War mediated old Japanese colonialism and a new US imperialism, and throughout Cold War, “the United States has become the inside of East Asia, and it is constitutive of a new East Asian subjectivity.”¹² Compared with the heavy emphasis on US power, Kuan-Hsin Chen did not pay equal attention to the role of imperialism of Nationalist China. To reconstruct the imperialist regime in Cold War Taiwan, as the findings of political economy historians of Taiwan have shown, it is crucial to articulate the double layers of imperial powers and how US imperialism secured the Nationalist Chinese regime in postwar Taiwan.

Global health never operates in a placeless laboratory; it requires more than governmental contracts and professional exchanges. How did this island become strategically

¹¹ Kuan-Hsing Chen, *Asia as Method* (Durham: Duke University Press, 2010), 8.

¹² *Ibid.*

thick but historiographically thin since the Cold War?¹³ When this Cold War imperial rivalry is refashioned into current US-People's Republic of China (PRC) tension, what kinds of histories do we need for this moment?¹⁴ My research departs from the happy ending of trachoma by thinking about the empirical and methodological potential for understanding the historical relationship between Taiwan, colonial legacy, global health campaign, and US-Sino cooperation since the early-1950s. Throughout postwar Taiwan, the US-led global health intervention shifted the medical and public health infrastructure from a Japanese to an American style; yet Taiwan was framed as a culturally, ethnically, and politically Chinese society outside China within the global health campaign collaborations.

The island of Taiwan remained unclaimed until the 17th century. In the early colonization of Taiwan, Dutch, Spanish, Han Chinese, and then the Ch'ing Dynasty ruled the island until 1895 when the Chinese empire lost the First Sino-Japanese War. It is still debatable whether Taiwan became an "Oriental" Chinese society before the Japanese took over.¹⁵ During the period 1895-1945, Taiwan became a colony of the Japan Empire.¹⁶

As Japan emerged as a modern East Asian empire after the 1867 Meiji Restoration, it had experimentally operated "scientific colonialism" in a direct form of colonial medicine, public

¹³ My interpretation of Taiwan here was inspired by historian Ruth Oldenziel's argument on the U.S. construction of islands throughout the Cold War that was an imperial process making them "demographically empty, geographically "thin," and economically worthless—but strategically vital and legally "thick." See Ruth Oldenziel, "Islands: The United States as a Networked Empire," in *Entangled Geographies: Empire and Technopolitics in the Global Cold War*, edited by Gabrielle Hecht and Paul N. Edwards, 13-41 (Cambridge: MIT Press, 2011), 20-21.

¹⁴ Taiwan and the Cold Warism see Charlie Yi Zhang, Wen Liu, and Casey Lee, "Ethno-Racial Paranoia and Affective Cold Warism: Remapping Rival US-PRC Imperial Formations," *American Quarterly* 74, no. 3 (2022): 499-521.

¹⁵ Shih-shan Henry Tsai, "Introduction," *Maritime Taiwan: historical encounters with the East and the West* (New York: M.E. Sharpe, Inc, 2009), 3-18; Ronald G. Knapp ed., *China's Island Frontier: Studies in The Historical Geography Of Taiwan* (Honolulu: University Press of Hawaii, 1980).

¹⁶ The history of colonization of Taiwan before the 20th century see Tonio Andrade. *How Taiwan Became Chinese Dutch, Spanish, and Han Colonization in the Seventeenth Century* (New York: Columbia University Press, 2008).

health, and sanitary reform in its colonies in East Asian regions.¹⁷ In 1902, Goto Shimei (後藤新平), the Japanese governor of Taiwan, began to reform medical and public health policies in Taiwan. The health construction in colony Taiwan was based on a modern state-hygiene discourse which reinvented by Japanese intellectuals and employed by Japanese governmental officials. According to Taiwanese historian Shiyung Liu, health has been shifted from personal issues to a state's task combined with public interests.¹⁸ Before 1920, colonial medicine in Taiwan was mainly focused on transforming tropical Taiwan into a healthy environment suitable for the health of Japanese settlers. Various aspects of medical and public health infrastructure in Taiwan were gradually established, such as drinking water supply, demographic surveys, medical police system, medical education, and vaccination.¹⁹ The establishment of personal hygiene and former Japan-trained health workers in Taiwan was also implemented by educational and medical policing system during Japanese rule, that contributed to the infectious disease control programs in postwar Taiwan.²⁰

The end of Chinese Civil War and the Korean War, had reconfigured Taiwan's future into the Sino-US cooperation in postwar Taiwan. After Japan's surrender in 1945, Taiwan has

¹⁷ See Shiyung Liu, "Building a strong and healthy empire: the critical period of building colonial medicine in Taiwan," *Japanese Studies* 24, Issue 3 (2004): 301-314; Shiyung Liu, "Sanitation, Hygiene and Public Health: Changing Thoughts of Public Health in Colonial Taiwan," *Taiwan Historical Research* 8, issue 1 (2001):41-88; Shiyung Liu, "Ri Ben Zhi Min Yi Xiao De Te Zheng Yu Kai Zhan (Characteristics and Development of Japanese Colonial Medicine)," in *Dong Ya Yi Liao Shi: Zhi Min, Xing Bie, Yu Xian Dai Xing* (A History of Healing in East Asia Colonialism, Gender, and Modernity), Shiyung Liu and Wen-Ji Wang eds. (Taipei: Linking Publishing, 2017); Yen-Chiou Fan, "The Practice of Modern Medicine in Colonial Taiwan (1898-1906): From Gotou Shinpei's Theory of State Hygiene," *New History* 9, no.3 (1998): 49 – 86.

¹⁸ Shiyung Liu, 2001.

¹⁹ Shiyung Liu, *Prescribing Colonization: the Role of Medical Practice and Policy in Japan-Ruled Taiwan, 1895-1945* (New York: Columbia University Press, 2009).

²⁰ Hsien-Yu Chin, "Colonial Medical Police and Postcolonial Medical Surveillance Systems in Taiwan, 1895-1950s," *Osiris, 2nd Series*, no. 13 (1998): 326-338; Yi-Ping Lin and Shiyung Liu, "Forgotten wars: Malaria eradication in Taiwan 1905-1965," *Health and Hygiene in Modern Chinese East Asia*, Leung KC and Furth C, eds., (Durham: Duke University, 2010), 183-203; Yen-Chiou Fan, "US Aid Medicine, Hansen's Disease Control Policy, and Patients' Rights in Taiwan (1945-1960s)," *Taiwan Historical Research* 16, no. 4 (2009): 115-160.

become part of China's territory; a move which was based on the 1943 Cairo Declaration signed by China, Britain, Russia, and the United States. The Declaration was not a decision made by the 600 million people living on the island by the end of WWII. When losing in mainland China in 1949, the Nationalist Chinese Party (also as known as *Kuomintang*, the KMT party), retreat to Taiwan and continued the Republic of China in Taiwan with the US support during Cold War.

The Cold War rivalry had resulted in shifting the postwar American sinologists' research sites from Mainland China to Taiwan for the research on Chinese culture and society. As Taiwanese sociologist Shao-Hsing Chen (1906–1966) identified in 1966, for those first-wave American social scientists in Taiwan, Taiwan functioned as a research “substitute” for Chinese studies because “it tells us the possibility and the possible way of future social change in China.”²¹ Taiwan was framed as presumable Chinese society for studying not only the traits of traditional China but also the traditional China being changed during the modernization process, evaluating U.S. foreign policy to China after WWII.²²

Methodologically, for a historically marginalized area like Taiwan, facing its complicated history is crucial. Who represents this island in the historical narrative is extremely important. Therefore, I chose to follow three historical actors who participated in the global health fight against trachoma, yet their traces have been overshadowed in existing literature. But this omission does not undermine the profound encounters that took place between these

²¹ Shao-Hsing Chen, “Taiwan as a laboratory for the study of Chinese society and culture,” *Bulletin of the Institute of Ethnology, Academia Sinica* 22 (1966): 1-14, 5.

²² The critical analysis see Keelung Hong and Stephen O. Murray, *Looking through Taiwan: American Anthropologists' Collusion with Ethnic Domination* (Lincoln: University of Nebraska Press, 2005). Bruce Cumings, “Boundary displacement: Area studies and international studies during and after the cold war,” *Bulletin of Concerned Asian Scholars Area and International Studies in the Early Cold War* 29, no. 1 (1997): 6-26; The example of studying Chinese social changes in Taiwan, see Norma Diamond, *K'un Shen: a Taiwan village*. New York: Holt, Rinehart and Winston, 1969.

marginalized actors and the covert powers of imperialism. This dissertation illuminates Taiwan's own postcolonial trajectories. I argue that coloniality operates by shaping and maintaining the imperial divide of center and margin; yet the margins have their own postcolonial lineages, which often condense into a singular historical past, and we need these postcolonial detours to multiply our understandings of Taiwan. This is what I am calling a view from the margins.

This dissertation adopts a postcolonial feminist approach to examine how powerlessness encountered the US-Sino cooperative regime in global health in postwar Taiwan. I follow what historical sociologist Julian Go has described: postcolonial thought is a *critique* and an *invitation*.²³ Although empire has evolved into different forms of critique through widely traveling among various academic fields and geographical locations, it always matters.²⁴ A postcolonial critique is “a mode of analysis that takes these imperial processes and patterns into critical account[...]; the ways of knowing, seeing, and being attendant with empire.”²⁵ For historians, it really helps us to “became aware not only of the peculiarities of history as a form of knowledge—its inherent inequalities, as I have called them—but also of its conditions of possibility.”²⁶ The possibility leads to the dimension of invitation: “It is an invitation to imagine knowledge or modes of apprehending the world that surmount if not transcend the imperial episteme, or at least do not reproduce it.”²⁷

²³ Julian Go, *Postcolonial Thought and Social Theory* (Oxford: Oxford University Press, 2016), 16.

²⁴ Go, 2016, 16. The application of postcolonial thoughts/theory/studies has deeply rooted in the English and literature studies, and evolving through its adaptation by historians, anthropologists, and feminists since the 1990s and then the recent call for bringing postcolonial thoughts into social sciences. For the genealogy of postcolonial thoughts and their relation to social theory, see Go, 2016; postcolonial theories in the field of history, see Dipesh Chakrabarty, 2011 and 2000.

²⁵ Go, 2016, 19.

²⁶ Chakrabarty, 2011, 250.

²⁷ Go, 2016, 64.

Global health practices and knowledge production is indeed embedded in developmentalism and western modernization ideology.²⁸ And although the ideologies in practice have brought positive impacts into the areas, they were developed by dividing nations and regions into periphery, semi-periphery, and core by socioeconomic status as well as scientific accumulations. As Jodi Melamed observes, “Capital can only be capital when it is accumulating, and it can only accumulate by producing and moving through relations of severe inequality among human groups.”²⁹ In the knowledge production of the US-led global health campaign, the American researchers in public health and tropical medicine accumulated the research’s means, results, and credits by exploiting the labor and materials from the marginalized local actors and neglecting their participation in global health history. As US historian Susan M. Reverby has articulated, “there was traffic in ideas, in practices, in justifications, and in the bodies of researchers that moved across borders.”³⁰

Postcolonial STS and Critical Global Health both remind researchers that, for ideas, practices, and materiality, their qualities and content would be transformed after traveling from one place to another, and shaped by the local historical and social conditions.³¹ Anthropologist Vincanne Adams has redefined the critical meaning of global in Critical Global Health that is around “concerns that have geographic specificity and global relevance simultaneously. By

²⁸ Arturo Escobar, *Encountering Development: The Making and Unmaking of the Third World* (Princeton: Princeton University Press, 1995); On the historical case of Taiwan see, Xinying Wen, *jingji qiji de beihou : taiwan meiyuan jingyan de zhengjing fenxi (1951-1965)* (Behind the Economic Miracle: A Political and Economic Analysis of Taiwan's US Aid Experience (1951-1965)) (Taipei: Independence Evening Post Publisher, 1990).

²⁹ Jodi Melamed, “Racial Capitalism,” *Critical Ethnic Studies* 1, no. 1 (2015): 76–85, 77.

³⁰ Susan M. Reverby, ““Normal exposure” and inoculation syphilis: A PHS “Tuskegee” doctor in Guatemala, 1946–1948,” *Journal of Policy History* 23, no. 1 (2011): 6-28, 21.

³¹ Anderson and Adams, 188.

making visible the kinds of evidence that matters in out-of-the-way places that have often been made invisible, we make critical and compelling contributions.”³²

In “Making Global Health History,” Warwick Anderson provides a postcolonial critique of the global health model through tracing the historical continuity of colonialism from the scientific patriotism in 1920s Philippines, to the Kuru disease research in the mid-1950s New Guinea, and then to the national biomedical project in the early 2000 Singapore.³³ He urges researchers to investigate the globalization of science and medicine through a postcolonial lens. Thus, the notion of international health can also be methodologically applied to the case studies, expanding the boundary of our research beyond the nation-state. By incorporating Anne Heylen’s concept on transnationality,³⁴ medical historian Harry Yi-Jui Wu suggested that, when examining the history of public health campaigns in Taiwan, it is important to adopt an analytical perspective that considers them as integral to larger international health initiatives, rather than viewing them solely as domestic events.³⁵

Scholars have approached the history of international/global health differently. By mostly using the United States as the location for the center of his work, Randall Packard’s *A History of Global Health*, published in 2016, has illustrated the chains of detailed events, campaigns, and competitions between biomedical and social interventions in global health from a U.S.

³² Vincanne Adams, “What Is Critical Global Health?” *Medicine Anthropology Theory* 3 no. 2 (2016): 186-197, 191.

³³ Warwick Anderson, “Making Global Health History: The Postcolonial Worldliness of Biomedicine,” *Social History of Medicine* 27, no. 2 (2014): 372–384.

³⁴ The discussion on the transnationality also see Kapil Raj, “Beyond Postcolonialism . . . and Postpositivism: Circulation and the Global History of Science,” *Isis* 104 (2013): 337-347; Kapil Raj, *Relocating modern science: circulation and the construction of scientific knowledge in South Asia and Europe, seventeenth to nineteenth centuries* (Delhi: Permanent Black, 2006); Pratik Chakrabarti, “Empire and Alternatives: Swietenia febrifuga and the Cinchona Substitutes,” *Medical History* 54, no.1 (2010): 75-94.

³⁵ Harry Yi-Jui Wu, “Beyond the Scope of the State Anti-Malaria Campaigns in and out of Taiwan,” *Taiwan: A Radical Quarterly in Social Studies* 88 (2012): 229-247.

perspective;³⁶ The finding of Shu-ching Chang and Wen-Hua Kuo's research on postwar Taiwan have provided evidence to support Packard's argument that postwar global health was aimed at addressing present-day disease epidemics and was program-driven.³⁷ However, as Dora Vargha has identified, the historical actors on the communist side in this “international” health framework seemed to be totally ignored.³⁸ Warwick Anderson, however, has reminded researchers in the North such as Packard of the importance of respectfully treating both the historical actors and the existing literature from the ground in Global South. If both Cold War ideology and the governed population played an important role in affecting international health campaigns in the postwar era, what type of research scope should be utilized in exploring the history of international and global health? This question has become a critical issue among researchers.

Many scholars have also touched on the unequal distribution of resources and the power imbalance between the dominant developed countries and the “Third World” countries. According to Farmer et al., the development of the Americanized model of international health is situated in a different historical path when it comes to the mid-20th century “therapeutic revolution” in the industrialized countries of North America and Europe.³⁹ Although focusing on different trajectories of US Aid in health reconstruction, many historians and social scientists show how the North American model became so influential on countries in Asia, Africa, and

³⁶ Randall M. Packard, *A history of global health: interventions into the lives of other peoples* (Baltimore: John Hopkins University Press, 2016).

³⁷ Wen-hua Kuo and Shu-ching Chang, “mei yuan yi liao (U.S. Aid in Medicine and Public Health).” *Tai wan yi liao si bai nian*, 142-166 (Taipei: Center for Tzu Chi's Mission of Culture, 2006).

³⁸ Dora Vargha, “Book Review on Randall M. Packard. 2016. *A History of Global Health: Interventions into the Lives of Other People*,” *Isis* 109 (2018): 374-375.

³⁹ Paul Farmer, Matthew Basilio, and Luke Messac, “After McKeown: The Changing Roles of Biomedicine, Public Health, and Economic Growth in Mortality Declines,” *Therapeutic Revolutions: Pharmaceuticals and Social Change in the Twentieth Century*, A. Greene, Flurin Condrau, and Elizabeth Siegel Watkins (eds.), 186-217 (Chicago: University of Chicago Press, 2016).

Latin America throughout the 20th century and the implementation of various global health aid in the developing countries.⁴⁰

Postcolonial feminism emerged as a reaction to critically examine not only colonial powers but also their entanglement of “the process of constructing a nationalist anti-colonial symbolism.”⁴¹ That is, a response to the early proponents of postcolonial theory, particularly the men who took over in the aftermath of colonialism, continuing to maintain the imperial world order by relying on assistance from the superpowers as well as muting the voice of indigenous communities and their agendas if they did not fit into the prioritized nation building projects. For feminists, postcolonial feminism challenges the universalization of women and “global sisterhood” founded on a false divide between the liberated and victims.⁴² As an intellectual project, it emphasizes that all knowledge is partial and built upon the standpoint of the subject, defined in relation to the structural forces of gender, class, race, ethnicity, nationality, and empire, which is just one force. It pays attention to the complex interrelationships between feminist, antiracist, and nationalist struggles. As a praxis, it emphasizes a transnational solidarity that is based on understanding the similarities and differences between the struggles that each group faces.⁴³

⁴⁰ Especially on Taiwan and China, see Shiyung Liu, “Transforming Medical Paradigms in 1950s Taiwan,” *East Asian Science, Technology and Society: An International Journal* 11, no. 4 (2017): 477-497; Mary Brown Bullock, *An American Transplant: The Rockefeller Foundation and Peking Union Medical College* (Oakland: University of California Press, 1980); John R. Watt, *Health Care and National Development in Taiwan, 1950-2000*, (NY: ABMAC Foundation, 2008).

⁴¹ Reina Lewis and Sara Mills, “Introduction.” *Feminist Postcolonial Theory: A Reader*, Reina Lewis and Sara Mills eds., 1-24 (New York: Routledge, 2003), 3.

⁴² Chandra Talpade Mohanty, “Under Western Eyes: Feminist Scholarship and Colonial Discourses.” In *Third World Women and the Politics of Feminism*, Mohanty, Chandra Talpade, Ann Russo, and Lourdes Torres eds., 51-80 (Bloomington: Indiana University Press, 1991).

⁴³ Chandra Talpade Mohanty, Ann Russo, and Lourdes Torres (eds.), *Feminism without Borders: Decolonizing Theory, Practicing Solidarity* (Durham: Duke University Press, 2003).

The care and concern also expanded from human-centrism to our relations to animals, non-human species, and environments⁴⁴. Postcolonial feminist thinkers challenged the philosophical tradition of the great divide between humans and animals and nonhumans and between culture and nature.⁴⁵ The new epistemological turn demonstrates this type of distinction as a male and masculine version of a world perspective instead of being an epidemiological assumption. It requires an epistemological reframing of human nature as an interspecies relationship, and it understands domination, oppression, and exploitation as an interlocking system involving species and categories of human beings who are not qualified to be “man” — those of particular gender, social class, and racial and ethnic minorities.⁴⁶ By breaking down the great divide, researchers have traced the encounters of where and when species meet intersectionally, adapt mutually, and live entangled in different historical or contemporary scenes.⁴⁷ In *Animalia*, the interdisciplinary animal scholars face the issue of the animalia of empire, asking how and which animal species both facilitated and impeded imperial power. Imperial power was extended through and disrupted by animal species.⁴⁸

⁴⁴ Although the Taiwan monkey serves as a focal point in this dissertation, my focus does not revolve extensively around posthumanism's philosophical discourse. Instead, I draw upon the concept of relationality as found in Science and Technology Studies (STS) and animal studies to deepen my understanding of the experimental animals and their intricate historical connections to global health initiatives and the forces of scientific imperialism.

⁴⁵ Donna Haraway, *Primate Visions: Gender, Race, and Nature in the World of Modern Science* (New York: Routledge, 1989); Pratik Chakrabarti, “Beasts of Burden: Animals and Laboratory Research in Colonial India.” *History of Science* 48 (2010): 125–52; Dipesh Chakrabarty, 2000.

⁴⁶ John McNeill, *Something New under the Sun: An Environmental History of the Twentieth-Century World* (London: Allen Lane, 2000); Anna Tsing, “Unruly Edges: Mushrooms as Companion Species,” *Environmental Humanities* 1, no. 1 (2012): 141–154; Donna Jeanne Haraway, *When Species Meet* (Minneapolis: University of Minnesota Press, 2008); Linda Nash, “The Nature of Agency or the Agency of Nature,” *Environmental History* 10 (2005): 67–69.

⁴⁷ Julie Livingston and Jasbir K. Puar, “Interspecies,” *Social Text* 29 (2011): 1-106; Ritvo, 2018; Haraway, 2008. Scholars from or working in the global south and postcolonial studies also identify that the distinction is not universal either. For instance, Mahesh Rangarajan illustrates the blurred boundary between human and animals in South Asia by analyzing the changing symbolic values which the lions of Gir carried in Indian history, see Mahesh Rangarajan, “Animals with Rich Histories: The Case of the Lions of Gir Forest, Gujarat, India,” *History and Theory* 52, no. 4 (2013): 109-27.

⁴⁸ Antoinette Burton and Renisa Mawani, eds. *Animalia: An Anti-Imperial Bestiary for Our Times* (Durham: Duke University Press, 2020).

In contrast to global health that emerged from the standpoint of power, this dissertation focuses on the standpoint of the marginalized in global health histories. As Taiwan was already located at the margin of global health and global academia, this dissertation further centers the marginalized actors on this marginalized island: children, monkeys, and female technicians of Taiwan which were all involved in the global trachoma campaigns during the postwar period.

A Critical East Asia as a Method: Centering Taiwan in Postwar Science, Medicine, and Public Health

Since 2007, Taiwanese historian of science Daiwie Fu's position paper in the inaugural issue of *East Asian Science, Technology, and Society (EASTS)* has stimulated a wave of responses and inquiries about its distinctiveness and distinction from western STS.⁴⁹ It was around the same time as "Asia as Method" came out, and similar questions were asked in science, technology, and medicine (STM) history and social studies in Taiwan and broader East Asia.⁵⁰ Even though East Asian STM studies from East Asia has a smoother relationship to their Western counterparts, Warwick Anderson suggested that "Asia as Method" is an ethical standpoint and inherently a postcolonial project.⁵¹ Ruey-Lin Chen, Taiwanese philosopher of

⁴⁹ Interestingly, the intellectual discourse on East Asia that we previously discussed was predominantly led by male scholars, which highlights a gendered aspect of East Asian scholarship. However, female scholars in Taiwan more tend to engage with praxis and care. For Example, Taiwanese female scholars like Chia-Ling Wu have adopted a critical approach through their active involvement in civil engagement. Wu, a medical sociologist/STS scholar, well-known for her examination of midwifery profession in Japanese colonial Taiwan, has also founded a local reproductive rights group in Taiwan since 2013. She collaborates with current Taiwanese midwives to create a low-medical intervention and women-centric birthing experience in the community, demonstrating her dedication to women's health and rights. More on the reproductive right organization, see Birth Empowerment Alliance of Taiwan, <https://www.birth1020.org> (accessed, February 28, 2023).

⁵⁰ Started in the late 2000s, see Togo Tsukahara, "Introduction: Japanese STS in Global, East Asian, and Local Contexts," *East Asian Science, Technology and Society* 3 (2009): 505-509. In 2010, Taiwanese leftist scholar Kuan-Hsin Chen proposed "Asia as Method" to talk about deimperialization in Asian societies. It requires "using Asia as an imaginary anchoring point can allow societies in Asia to become one another's reference points, so that the understanding of the self can be transformed, and subjectivity rebuilt" (see Chen, 2010, xv).

⁵¹ Warwick Anderson, "Asia as Method in Science and Technology Studies," *East Asian Science, Technology and Society: An International Journal*, no. 6 (2012):445-451, 446.

science, proposed a regional working group for theory building to explore the theoretical potential for East Asia STM studies.⁵² Fa-ti Fan, a Taiwanese emigrant historian of science in the U.S., has urged researchers to consider the broader historical and political forces (beyond Japanese imperialism and the Cold War) that have shaped science and technology in East Asia.⁵³ He has highlighted the importance of factors such as the role of the state, geopolitics, nationalism, and political economy at the global, regional, and national levels. Although he did not focus specifically on health sciences and public health, his call to examine the complex interplay of political and social factors is highly relevant in these fields as well.

As concepts could change their meanings while traveling through different contexts, so, too, does “East Asia.” East Asia has shifted from a Cold War product for US empire, as Warwick Anderson has suggested, to area studies, which have shown potential to become a platform for regional scholars and activists, an enunciatory position for previously marginalized local intellectuals, and a postcolonial site of difference and dissent.” East Asia has a postcolonial turn in the East Asian context, but STS refers to a more diverse and a politically active interdisciplinary circle of historians, anthropologists, and social scientists working on STM in the context of Taiwan, with a strong global connection in both research and praxis.⁵⁴ To

⁵² Ruey-Lin Chen, “Discovering Distinctive East Asian STS: An Introduction,” *East Asian Science, Technology and Society: An International Journal* 6, no. 4 (2012): 441-443. In this article, Ruey-Lin Chen also provides the details of published articles surrounding East Asian STS. Also Ruey-Lin Chen, “A Voyage to East Asian STS Theories; Or, What Might Make an STS Theory East Asian,” *East Asian Science, Technology and Society: An International Journal* 6, no. 4 (2012): 465-485.

⁵³ Fa-ti Fan, “East Asian STS: Fox or Hedgehog?” *East Asian Science, Technology and Society: An International Journal* 1, no. 2 (2007): 243-247.

⁵⁴ See the community journal-- East Asia Science Technology and Society: an International Journal, which received the 2018 4S (Society for the Social Studies of Science) Infrastructure Award, see “East Wins 2018 STS Infrastructure Award.” Duke University Press, on March 21, 2018, accessed April 28, 2023. <https://dukeupress.wordpress.com/2018/03/21/easts-wins-2018-sts-infrastructure-award/>; and Anonymous, “Episode 2: Wen-Hua Kuo (transcript)”, contributed by, STS Infrastructures, Platform for Experimental Collaborative Ethnography, last modified 27 March 2020, accessed October 23, 2022. <https://stsinfrastructures.org/content/episode-2-wen-hua-kuo-transcript>

distinguish it from the traditional academic field of East Asian studies (as having an orientalist roots in Cold War history), if I may, I refer to it as Critical East Asian studies.⁵⁵ This dissertation is built upon the fruitful literature produced by the vibrant Critical East Asian community.

Through engaging with the three themes above, I identify two major methodologies: (1) tracing Taiwan from the Japanese colonial period and (2) tracing and distinguished between Taiwan from the Chinese diaspora after the end of WWII. I argue that both threads are crucial to establish the historiography of global health and postwar Taiwan. Through reviewing the two trajectories, the imperial layers of power structure imposed onto the island in the postwar period could be illuminated.

After 1945, Taiwan's transition from Japan to the Chinese Nationalist government sparked chaos across social and political domains as well as in the areas of medicine and health. Meanwhile, on the other side of the Pacific, the United States was becoming one of the most crucial historical actors among the predominant Western powers involved in the postwar reconstruction of East Asian regimes. This reconstruction included Taiwan's future development of health and medicine. While the ways in which imperialist regimes operated in the historical construction of health and medicine in 20th century Taiwan differed from that of the United States and China, they were nevertheless involved in the construction of health infrastructure and

⁵⁵ In "Memories of Underdevelopment" after Area Studies," Harry Harootunian redefined the area studies as a "desire" developed in the post WWII which "attached to fixed spatial containers, such as geographic area, culture region, or directional locality," from Harry Harootunian, "'Memories of Underdevelopment' after Area Studies," *positions* 20, no. 1 (2012): 7–35, 7. As a Marxist historian, Harootunian argues that the desire has led to "the formation of rationalities such as liberal-democratic states, capital accumulation, and the primacy of "self-regulated market," which has come to collectively signify the unchanging modern structure. See Harry Harootunian, *The Unspoken as Heritage: The Armenian Genocide and Its Unaccounted Lives* (Durham: Duke University Press, 2019). Most crucially, the area studies have a privilege for space instead of time which standardizes the forms of temporalities and then transformed the issues of times into a capitalist form of time-- a "singular temporality that marks the distance between developed and undeveloped," see Harootunian, 2012, 8

the spread of Western medicine as part of international colonial competition and nation building projects.

Source, Materials, and Reflection

Given my intent to write about global health history in postwar Taiwan, I first decided to move back home in Fall 2020. This was when access to libraries and archives was still available in Taiwan, unlike when everything was shut down in the United States. However, I encountered what many researchers working on recent Taiwan's history have found: the scope and limits of archives and records reflect the postcolonial struggle of this island. Centering Taiwan at the center of historical research was itself a decolonial reimagining of our professional infrastructures and practices. After being taken over by Nationalist China in 1945, Taiwan consciousness has been not wholly but at least largely organized as a radically rebellious action against the Nationalist Chinese regime. Throughout the 38-year martial law period, the Taiwan consciousness, identity, language, and culture were outlawed and highly politicized.⁵⁶

A decolonial archival practice begins with understanding that archives serve as a form of power to privilege and marginalize.⁵⁷ The Sinicizing process of archives in the formal institutional and organizational settings of both Taiwan and the U.S. has a complicated postcolonial root and served for the U.S.'s Cold War interests in East Asia and for Nationalist

⁵⁶ Hsueh-chi Hsu, "tai wan shi yan jiu san bu qu: you xian xue jing xian xue dao xian xue (A Trilogy of Taiwanese Historical Studies: From Canonical Scholarship and Trendy Approach to Risky Scholarship)," *Reflection* 16 (2010): 71-100.

⁵⁷ Joan M. Schwartz and Terry Cook, "Archives, Records, and Power: The Making of Modern Memory," *Archival Science* 2 (2002): 1-19, 13; Kin-Long Tong, "Archiving social movement memories amidst autocratization: a case study of Hong Kong's Umbrella Movement Visual Archive," *International Journal of Heritage Studies* 28, no. 6 (2022): 733-751.

China's reaffirmation of national authority on Taiwan after its retreat to this island after losing the Chinese Civil War.

Within Academia Sinica, the most prestigious research institution of Taiwan, the Institute of Taiwan History wasn't officially launched until 2004.⁵⁸ During the past few decades, the intellectual community of Taiwan History and Taiwan Studies on the island of Taiwan has been actively engaged with preserving and telling the histories of Taiwan, as well as with the ongoing transformative justice movement on the systematic erasure of the subjugation of Taiwan and the state's violence in the archives and records. However, the repository of the Institute of Taiwan History contains limited archival materials related to global health in the postwar era compared to the extensive collections from the Japanese colonial period.

Most institutional archives and records have been systematically preserved in the repositories of national archival administrations (National Archives Administration (Taiwan) and Academia Historica) and the Institute of Modern History at Academia Sinica. I truly appreciate all the assistance I received during my archival work at these institutions. However, I could not shake off my complicated feelings while immersing myself in the archives and records produced by Nationalist Chinese governmental agencies. At its core, Chinese Nationalist scholars were preoccupied with the archives they produced about the past through records. Taiwan within this postcolonial process became a geographical container for Nationalist China to preserve what they call the "impartial" sources of archives and records towards a Nationalist version of Chinese history of Taiwan.

⁵⁸ To learn more about the Institute of Taiwan History at Academia Sinica, see its official website <https://www.ith.sinica.edu.tw/index.php?l=e>.

Inspired by the scholars and activists in both the vibrant fields of Taiwan history in Taiwan and the archival turn to decolonial archival praxis in the latter parts of the twentieth century Americas, I think I finally got the courage to engage with the historical complexity in the archives instead of walking away from them. Extended from our relation and Western Colonialism, empire, and color lines, as described by the archival scientists Jamila J. Ghaddar and Michelle Caswell, there was an extra layer of Nationalist China's internal colonialism functioning in Postwar Taiwan, and they "are inextricably enmeshed with all facets of how we think, talk and work in the field because they are defining features of modernity everywhere."⁵⁹ I realized that my sense of unease came from adopting the taken-for-granted methodologies in conducting academic research of Taiwan (eg, go to the institutional archives) but ending up finding my Taiwanese heritage was disappeared in the well-preserved archival collections on postwar Taiwan, in both the institutions of the U.S. and Taiwan. Most of the archive is devoted to the Republic of China, the Nationalist Chinese authority since 1945. If I simply treated these archives as a product of neutrality and objectivity, I would never be able to challenge the systematic selection of collected facts and information on Taiwan as a means to erase certain historical traces and footages of lived experiences on this island.

My attempt to build up my own material-database for this dissertation research is additionally a necessary academic move especially after my visit to the National Archives and Records Administration (U.S.) in the winter of 2019 when most of the official records of NAMRU-2 were in its pre- and post-Taiwan periods. Taiwanese scholars have also told me about the missing archives of certain foreign global health agencies and officers in the postwar

⁵⁹ Jamila J. Ghaddar and Michelle Caswell, "'To go beyond': towards a decolonial archival praxis," *Archival Science* 19 (2019):71–85, 78.

period. For example, the issue of archival preservation on NAMRU-2 since many records have been lost during its several relocations throughout the second-half of the twentieth century from Guam, Taiwan, the Philippines, Indonesia, and Cambodia. A lack of non-experts in the institutional record reveals that neglected actors are also difficult to find in institutional records. It was a huge contrast to NAMRU-3 since the headquarters have been located in Cario since 1946 (although it recently moved to Sigonella, Italy in 2019).

Therefore, there are multiple reasons for me to avoid using a traditional research method to access materials within certain established collections. This is to prevent reproducing the invisible power loop for this dissertation research. Scholar María E. Cotera articulates the problems with traditional archival methods that,

“Indeed, traditional archival methods often nourish an invisibilizing feedback loop in which one’s access to power determines one’s presence in the archive, and one’s presence in the archive shapes historical knowledge, which, in turn, informs the system of valuation that structures the priorities that govern collecting and preservation in institutions. Those father away from mechanisms of power—women, the working class, ethnic and sexual minorities—are rarely represented in institutional archives.

Consequently, their lives and interventions are rarely the subject of historical meaning-making.”⁶⁰

Thus, I try to work with archives and sources in a reverse way to create my own collection of materials. I sort through physical boxes and digitalized files from multiple research

⁶⁰ Maria Cotera, ““Invisibility Is an Unnatural Disaster”: Feminist Archival Praxis After the Digital Turn,” *South Atlantic Quarterly* 114, no. 4 (2015): 781-801, 785.

sites across the Pacific Ocean at multiple research sites. Primarily, my primary sources are from archival collections and historical documentation as a method of collecting data across national borders for this research. These primary sources include papers, reports, manuals, meeting minutes, photos, and motion videos. Additional major sources came from newspapers published in the U.S., Taiwan, and WHO publications, and the U.S. naval medical bulletin.

Autobiographies and publications were released by members of the North American Taiwanese Medical Association, overseas Taiwanese communities, and former NAMRU-2 Taiwanese workers.

From fall 2019 to summer 2022, the major materials collected both online and offline, come from the National Archives and Records Administration, the U.S. Navy BUMED Library and Archives, the Rockefeller Archival Center, the National Museum of Health and Medicine, the Smithsonian Institution Archives, UC Berkeley and San Diego Libraries, Taiwan Center at San Jose, Academia Historica (Taiwan), the National Taiwan University Library, and the Institute of Modern History at Academia Sinica (Taiwan). Digitalized sources and materials were collected from online databases, including the US Navy Bureau of Medicine and Surgery Office of Medical History Collection at the Medical Heritage Library, the National Repository of Cultural Heritage (Taiwan), the National Diet Library (Japan), Taiwanese American Archives, and the HathiTrust Digital Library.

Following the decolonial archival praxis, I would like to amplify two other of my material sources supporting the threads of my research throughout the research. One is the community archival projects preserving the histories and lived experiences of Taiwanese

Americans and immigrants in the United States;⁶¹ and secondly, I conducted oral historical interviews conducted with Mrs. Christine Yang (林壽英, 1943–Present) and Ms. Chunmei Chang (張春梅, 1943–Present), two former Taiwanese female technicians working at NAMRU-2 in the 1960s. I wouldn't have been able to connect with these two Taiwanese female migrants if Mrs. Christine Yang did not share with the Taiwanese American Archives (T.A. Archives, 台美史料中心) about her story and her group photo which Ms. Chunmei Chang took while working at NAMRU-2.

The T.A. Archives contests the mainstream historical narratives in both the U.S. and Taiwan, on the one hand, by documenting underrepresented stories and artifacts within existing Asian American history, and on the other hand, by centering the subject and identity of Taiwanese in their archival work as a challenge to Chinese orthodoxy. The T.A. Archives represents the decolonial praxis which “requires methods that decenter institutions as the arbiters



Figure 1-2: A Library Room in the T.A. Archive. T. A. Archives, September 2017.

⁶¹ The Taiwanese American Archives launched in 2013 and started with an approximately 3,800 square feet physical repository in Irvine, California, and then moved another two-story building with 19,000 square feet area in an office complex in July 2016. During the COVID-19 pandemic, the T.A. Archives has been processing transferring its physical archives to UC San Diego Library.

of knowledge and recognize the need to not only represent BIPOC communities' histories, but also to involve them in the process of archiving.”⁶²

My original intention to conduct an oral historical interview on Taiwanese female workers at NAMRU-2 emerged from my sociological training and personal understanding of the patriarchy system and history which is deeply rooted in Taiwanese society and culture. However, thanks to Silvia Rivera Cusicanqui's concept of *historia oral* (oral history), I can engage with the oral form and articulate the power of oral history as a historical method for understanding the colonial order and indigenous resistance.⁶³ My interview with Mrs. Christine Yang consisted of three phone calls totaling seven hours from November 2021 to March 2022. Her ongoing writings published on Taiwanese American community platforms have also been incorporated as sources for this dissertation.

Regarding Mrs. Chun-Mei Chang, since Mrs. Christine Yang did not maintain contact with her former coworkers, I was unable to reach out to other local female technicians through Mrs. Christine Yang. Coincidentally, I saw her name in the autobiography of Dr. Jhe-nan Lin (林哲男), who was her husband.⁶⁴ Accordingly, Dr. Lin described Mrs. Chun-Mei Chang working at NAMRU-2 after graduating from the Department of Pharmacy at National Taiwan University. I contacted alumni of the Department of Pharmacy at NTU. I received the email of Mrs. Chun-Mei Chang after she agreed to participate in my dissertation research. Since Mrs. Chang mostly stays in Taiwan, it was difficult to schedule with her. However, she answered many questions for me

⁶² Lorena Gauthereau, “Postcustodial and Decolonial Archiving,” *Advocating for Ourselves* (2022). DOI: 10.21428/20a90772.213b89a2.

⁶³ Silvia Rivera Cusicanqui, “Ch'ixinakax utxiwa: A Reflection on the Practices and Discourses of Decolonization,” *The South Atlantic Quarterly* 111, no.1 (2012): 95-109.

⁶⁴ Jhe-nan Lin, *Wode waikē rensheng: linzhenan yishi huiyilu* (Taipei:Commonwealth Publishing, 2019).

via email at the beginning. At the beginning of August 2022, I received her email saying she would be visiting her family in California soon. We met up in person with her husband in Burlingame, CA, on August 11, 2022 (on that day Dr. Lin also gave me a copy of his autobiography with his signature on it).

Scholars have used various approaches to overcome obstacles in historical knowledge production. These methods include conducting oral history interviews, establishing community archives, declassifying records, and advocating for ownership and access rights. In Taiwan, these strategies often intersect with the island's social movements, such as democratization and transformative justice movements.⁶⁵

Ten years ago, the publication of the three volumes of *One Hundred Years of Pursuit: Stories of Taiwanese Democratic Movement* documented the struggles of three generations of Taiwanese people against colonial and imperial regimes during the 1920s, 1950s-1960s, and the 1970s-1980s.⁶⁶ The authors of these volumes, Taiwanese historians and sociologists Cuilian Chen, Nai-teh Wu, and Huiling Hu, emphasized that Taiwan's stories may not be extraordinary or sensational, but they are our own stories. In a 2020 interview, Cuilian Chen spoke about her personal pursuit of history, which always stems from the desire to understand the overlooked aspects of our shared past. She emphasized that “ignorance is not innocent.” By confronting and

⁶⁵ See Hung-Tu Chen (ed.). *Ke gang zhong de Taiwan shi: Gen zhe zhuan jia xue zhe tan suo li shi xin shi ye (aiwanese history in the curriculum: Exploring new perspectives on history with experts and scholars)* (Taipei: The Commercial Press, Ltd., 2020); Chin-ching Chen, Cuilian Chen, Ching-Hsuan Su, Chun-ying Wu, and Cheng-Hui Lin, *Zheng zhi dang an hui shuo hua: Zi you shi dai gong min zhi nan (Political Archives Speak: A Citizen's Guide to the Era of Freedom)* (Taipei, Spring Hill Publishing, 2021).

⁶⁶ Cuilian Chen, Nai-teh Wu, and Huiling Hu, *One Hundred Years of Pursuit (Stories of Taiwanese Democratic Movement), three volumes* (Taipei: Acropolis, 2013).

addressing ignorance, we can uncover hidden histories and recognize the forces that have obscured them.⁶⁷

Embracing the statement that “change is more likely to begin at the edge,”⁶⁸ my methodology aligns with Arthur Kleinman's assertion in *Writing at the Margins*, although my positionality and relationship to marginalized communities may differ significantly from his. Rather than merely writing about marginalized experiences, my aim is to center those experiences from a standpoint situated at the margins, where histories are filled with untamed and transformative encounters.

I owe a great debt to the scholarship and practical approaches of scholars in ethnic studies, as well as the histories shared by Black, Brown, Indigenous, and AAPI communities.⁶⁹ Throughout this dissertation, their contributions have profoundly influenced its development. One common thread running through their work is the recognition of the significance of praxis in knowledge production, along with the courage to unearth the histories of marginalized individuals and communities. This endeavor often involves exploring lesser-known spaces and materials, rather than relying solely on dominant historical narratives. It also necessitates

⁶⁷ “Zhui wen “wo men shi shui?” wo men jiu cheng wei Taiwan zi shen li shi de zhu ti -- Zhuan fang li shi xue zhe Chen Cui Lian zi zhi zhi meng (When we ask 'Who are we?' we become the subject of Taiwan's own history - An interview with historian Chen Tsui-lien on The Dream of Autonomy.” *OKAPI*, interviewed by Chia-Han Chu. September 8, 2020, <https://okapi.books.com.tw/article/13713>

⁶⁸ Arthur Kleinman, *Writing at the Margins* (Berkeley: University of California Press, 1995), 5.

⁶⁹ Centering the margins is also highlighting the relation between the U.S. imperial power and the historically marginalized voices, the list here focuses on the U.S. empire and AAPI histories and intellectual practices, see for example: Catherine Ceniza Choy, *Empire of Care: Nursing and Migration in Filipino American History* (Durham: Duke University Press, 2003); Chris Suh, *The Allure of Empire: American Encounters with Asians in the Age of Transpacific Expansion and Exclusion* (New York: Oxford University Press, 2023); Adrian De Leon and Jane Hong, “Introduction: Conservatism and Fascism in Asian America,” *Amerasia Journal* 48, Issue 1 (2022): 2-6; Jean J. Kim, “Objects, Methods, and Interpretations: Imperial Trajectories, Haunted Nationalisms, and Medical Archives in Asian American History,” *Journal of Asian American Studies* 14, no. 2 (2011): 193-219; Kenji C. Liu, “Zuihitsu: Teaching Aiiieeeee! as Intersectional Ecological Archive,” *Asian American Literature: Discourses & Pedagogies* 10, no. 10 (2020): 19-30; Yang Sao Xiong, “The Dynamics of Discursive Opportunities in the Hmong Campaign for Inclusion in California,” *Amerasia Journal* 44, no. 2 (2018): 65-87.

critically interpreting archives and records. Through their continuous resistance against U.S. imperialism within the realm of knowledge production and academic institutions, these scholars demonstrate how the histories at the margins occupy a central place in epistemological, social, and political transformations.

Organization of This Dissertation

In Chapter 1, I start with charting the postcolonial imperial regime, the politico-economic power structure of Taiwan after the postwar transition from Japanese colonial rule to US-Sino cooperation. I argue that this postcolonial imperial regime made Taiwan a suitable spot for the US-led global health campaign. In addition to the tangible aspects of disease pandemics and the healthcare system in postwar Taiwan, the previous colonial infrastructure, current Nationalist China's nation-building agendas as well as the US-led anti-communist alliances also emerged to strengthen the increasing internationalization of scientific collaborations in the postwar period. I suggest that the postcolonial imperial regime allowed the US-led global health campaign to recruit marginalized actors into the knowledge production and health campaign around trachoma. This imperial power structure positioned the scientific investigation of tropical disease and animals in Taiwan and Asia as crucial and augmented the overseas US military medical research apparatus that facilitated the collaboration of global health research. The second half of this chapter explores NAMRU-2 as a postcolonial agent served for global health and the postcolonial imperial regime. I argue that it is necessary to clarify the imperial power structure so that we can further move on to measure its relation to Taiwan, children, monkeys, and female technicians—to speak up about how marginalized becomes marginalized.

Chapter 2 centers the child as a focal point for analysis of the global health programs launched by WHO-UNICEF in Taiwan (1954–1971). The chapter examines the changing role of children and their relationship to the seemingly unrelated international health programs launched by WHO and UNICEF. Instead of duplicating an ideal WHO-UNICEF version of the trachoma program, the children of Taiwan were central in this process, not just the global health target. During this process, Taiwan’s children transitioned from being treatment receivers to care givers, health trainees, and financial donors in this almost two-decade long international health campaign against trachoma.

The children-centric trachoma control was not an entirely new project to Taiwanese society after WWII due to the Japanese colonial heritage. But the child subject allows us to capture the multiple layers of visions behind the collaboration between the Chinese Nationalist government, the US-led international health campaigners, and administrators and professionals, including humanitarian, scientific, and economic racialized visions. Despite its low mortality rate, trachoma had attracted postwar international health campaigns’ attention because it was framed as a major cause of “economic blindness” associated with youth’s labor power and the future of developing countries. The regime sought to bolster its global reputation and to prevent damage to the vision of children, labor, and military forces when trachoma was framed as a threat to the future of “Free China.” Taiwan’s current status, an unrecognized but resilient sovereignty, has its historical roots in coping with post-WWII changing power dynamics.

Chapter 3 explores the transnational connections among two marginalized groups of children across the regions facilitated by the global collaborative research on trachoma virus and vaccine in the postwar period. Between the 1950s and 1960s, trachoma “virus” and “vaccine” studies were conducted by two groups of researchers from NAMRU-2 and the University of

California Medical Center (UCSF) on both Taiwanese children in Taiwan and Native American children on an Apache Reservation in Arizona. I argue that the Taiwanese and Apache children were scientifically targeted but politically marginalized in research programs promising to create a preventive solution for trachoma that ultimately failed. This chapter sheds light on the layers of silence as well as the logic of coloniality operating as imperial, racial, and capitalist aims and objectives sustained the intellectual and technical flows across countries as well as the unethical conduct and the embodied dispossession of marginalized communities across borders. I suggest that methodological nationalism hinders our horizon about the interconnectedness of research ethics and the global health reckoning with the past and to form a global solidarity that is justice based.

Chapter 4 shifts its focus from *Homo imperius* to explore the historical encounters between the indigenous Taiwan Monkey and the imperial powers of the United States, Japan, and the United Kingdom. This chapters shows how the Taiwan Monkey became scientificized when incorporated into colonial projects—demonstrating the imperial accumulation in the aspects of modern science by collecting and utilizing animal species from the mountains, in the field work, vaccine trials, urban pet stores, zoological trades, colonial heritage, and the power imbalance behind Taiwan and these imperial powers.

The colonial investigations also established the scientific use of Taiwan monkeys that enabled the NAMRU-2 operations and animal collection for field and laboratory sciences on tropical diseases in postwar Taiwan and Southeast Asia. From 1959 to 1967, hundreds of Taiwan monkeys were captured, tested, and observed in a series of NAMRU-2's trachoma vaccine experiments and parasite field studies. This chapter illustrates that the Taiwan Monkey carried the same amount of heavy anticipation for scientists. For the NAMRU-2 researchers, the Taiwan

Monkey was the only animal species that showed the promise to take the trachoma vaccine trials to the next level. For the early 20th century Japanese scientists-colonial bureaucrats, the Taiwan Monkey was a tool for establishing new scientific disciplines such as zoology for making Japanese modernity. In the early 20th century, some Japanese anthropologists constructed a racial analogy between the Taiwan Monkey and the indigenous islanders within a colonial taxonomy described by Japanese scientists working on tropical diseases.

Chapter 5 centers the life history of LIN Shou-Yin (林壽英) aka Christine Yang (1943–Present). LIN Shou-Yin was a Taiwanese-Hakka woman who grew up in the southernmost town of Taiwan, a former NAMRU-2 technician in the virology laboratory for the trachoma virus research from 1965–1967, and became an overseas Taiwanese radical after moving to the United States in the summer of 1968. This chapter challenges the standard between the significant and the trivial in terms of scientist and technicians, male and female, Whiteness and Yellowness, in historical writing and archiving, as a response to the fact that female technicians often left less than scarce archival records of their lives and careers.

I suggest that the transnational life of LIN Shou-Yin/Christine Yang represents a collective response to being under the postcolonial imperial regime, navigating by a vision toward a better future outside the Chinese political oppression and gender norms and inequalities on the island. In addition to amplifying local female technicians' contribution to global health, this chapter also highlights how local Taiwanese women leveraged their temporary and often invisible scientific work at NAMRU-2 and transformed this facility into a steppingstone for their professional migration to the United States in the 1960s and 1970s during martial law in Taiwan, when international travel was generally not permitted.

The epilogue explores a postcolonial response to the imperial regime through the history of the Northern American Taiwanese Medical Association (NATMA). NATMA's current free clinic programs in Latin America and the Caribbean have their radical roots in the overseas ethnic radical movements in the United States since the 1960s. I suggest that the transnational identities of NATMA members play a decisive role in shaping how Taiwanese medical diasporas see and practice global health. These US trained Taiwanese professionals made a connection between themselves and Latin American nations by highlighting collective memories of oppression, while marking a socio-economic distinction by addressing healthcare and socioeconomic disparities between the United States and the countries they went to.

CHAPTER ONE

Postcolonial Imperial Regime and An Examination of NAMRU-2 as an Imperial Agent in Postwar Taiwan

In order to center the marginalized actors at global margin (Taiwan) surrounding global health against trachoma, this chapter unpacks the imperial structure imposed on Taiwan after WWII. Taiwan's postwar political transition evolved alongside the US-led global health interventions, emphasizing the pluralizing production of modernity through diverse approaches in the fields of disease and public health, gender and population, and health professional training. The three topics precede two routes of historical pasts in both Japanese ruled Taiwan and China before 1949 (the end of the Chinese Civil War). I argue that both historical trajectories are crucial for understanding the triple layers of imperial structure imposed on the island after WWII.

This chapter will follow with a section of NAMRU-2, which is a crucial site for this dissertation for two main reasons: (1) the NAMRU-2 serves as an introduction for the following chapters on marginalized global health actors, and all of whom were involved in the NAMRU-2 operation in postwar Taiwan and its global research project on the hypothesis of trachoma virus and vaccine development. (2) the NAMRU-2 itself is a historical case for showing the actual operation of postwar imperial regime in Taiwan since 1955.

The Historiography of Modernity, Public Health, and Medicine in Postwar Taiwan: The Power Convergence of Republican Chinese Transplant, Japanese Colonialism, and US Aid

Historian Ruth Rogaski's *Hygienic Modernity* is a founding work for critical East Asian studies.⁷⁰ She argues that, the transformation of China during the late 19th to early 20th centuries is associated with a new conception and practices of health and hygiene embedded in the global encounters, as the treaty involved foreign colonial powers, disease epidemics, and Nationalist's nation-building. She examines how the Chinese Nationalist elites mobilized health reform to the survival of the Chinese nation as a "hygienic modernity" project in the late 19th century world order.

Taiwanese historian Sean Hsiang-lin Lei argues that Chinese medicine played a key role in the 20th century formation of modern China, from the original resistance, towards embracing Western medicine, and the birth of modern Chinese medicine as a hybrid product "neither donkey nor horse," which symbolizes the Chinese struggle over China's modernity and state building.⁷¹ Another huge contribution of this book speaks to both political history and the history of medicine, without seeing the history of Chinese medicine as a result of policy making and implementation. For collective projects, Hong Kong historian Angela Ki Che Leung has led several collective projects focused on health, medicine, and East Asian modernity from a Chinese history perspective.⁷²

⁷⁰Ruth Rogaski, *Hygienic Modernity: Meanings of Health and Disease in Treaty-Port* (Berkeley: University of California Press, 2005).

⁷¹ Sean Hsiang-lin Lei, *Neither Donkey nor Horse: Medicine in the Struggle over China's Modernity* (Chicago and London: The University of Chicago Press, 2016). On the debates over Hygiene and morality see Sean Hsiang-lin Lei, "Moral Community of Weisheng: Contesting Hygiene in Republican China," *East Asian Science, Technology and Society: An International Journal* 3, no. 4 (2009): 475-504.

⁷² In the past decade, the volumes of Chinese history, STM, and modernity have also emerged, mainly in Hong Kong. Historian Angela Ki Che Leung is the most leading scholar in Chinese history of medicine in Hong Kong.

Postcolonial Approach to Taiwanese Histories of Science, technology, and Medicine (STM)

Compared with Hong Kong scholars tracing modernity and East Asia medicine from a Chinese perspective, Taiwanese historians Shi-yung Liu and Wen-Ji Wang organized a volume on *A History of Healing in East Asia: Colonialism, Gender, and Modernity* (trans.) from the standpoint of Taiwan.⁷³ This volume reveals a rising scholarship shifting the investigations of Science, technology, and Medicine (STM) from a Chinese to a Taiwanese history. Among the various research topics on, these historical investigations derived from the standpoint of Taiwan amplified Taiwan's political transitioning after WWII into a shared focus on the Japanese colonial legacy on postwar Taiwan, and the influence of the US- led foreign assistance as a new superpower arrived on the island.⁷⁴

In essence, Taiwanese historian Liu argues that Taiwan's postwar transition was a shift from Japan's health colonialism to America's invisible health imperialism.⁷⁵ This transition not only was about the shifting dominant political powers' efforts to achieve or maintain their political and economic interests by implementing health interventions in colonies or recently decolonized nations but also the recurrent influences of seemingly ended colonialism operating

See, Angela Ki Che Leung and Charlotte Furth. *Health and Hygiene in Chinese East Asia: Policies and Publics in the Long Twentieth Century*. Durham: Duke University Press, 2010; Hirsh, Max, Angela Ki Che Leung, and Izumi Nakayama, "Infrastructure, Modernity, and the Technologies of Everyday Life: Insights from a Collaborative Research Project on the Making of Modern East Asia," *East Asian Science, Technology and Society: An International Journal* 14, no. 3 (2020): 507-521. Angela Ki Che Leung and Izumi Nakayama (eds.), *Gender, Health, and History in Modern East Asia* (Hong Kong: Hong Kong University Press, 2017).

⁷³ Shiyung Liu and Wen-Ji Wang (eds.). *Dongya yiliao shi: zhi min, xing bie, yu xian dai xing* (A History of Healing in East Asia: Colonialism, Gender, and Modernity). Taipei: Linking, 2017.

⁷⁴ Dai-Wie Fu, *Yaxiya de xinshenti: xingbie, yiliao, yu jindai taiwan* (*Assembling the New Body: Gender/Sexuality, Medicine, and Modern Taiwan*) (Taipei: Socio Publishing, 2005).

⁷⁵ Shiyung Liu, "From Colonial Medicine to International Health in East Asia," *Human Futures*. Duke University Publisher Website: Franklin Humanities Institute, 2018. <https://humanitiesfutures.org/papers/from-colonial-medicine-to-international-health-in-east-asia/>.

subtly under the US-led international/global health campaigns throughout and after the historical transition.⁷⁶

In his manuscript on gender and medicine of Taiwan published on 2005, Taiwanese historian Daiwie Fu also focuses on the marginalized voices and their responses to imperial powers throughout the past one hundred years of Taiwan. He suggested that, to further bridge conversation between pre-modern and modern histories as well as post-modern imaginaries.⁷⁷

The Public Reconstruction in Postwar Taiwan and US-Sino Cooperation

Instead of focusing on Japan and the United States, the Chinese diasporic approach is crucial for us to understand Nationalist China as a third imperial power, which brought many key health bureaucrats during this transition of Taiwan.⁷⁸ Using a Chinese diasporic approach, historian Wayne Soon traces the trinational migration of overseas Chinese medical personnel, examining their global and local strategies on transplanting biomedicine and re-establishing the National Defense Medical Center (NDMC) in Taiwan in the 1950s. He also points out the Chinese Diaspora's long-standing international outreach to bring foreign funded health programs into postwar Taiwan.⁷⁹

Nationalist China was able to survive after losing the Chinese Civil War due to the US-Sino cooperation initiated soon after the outbreak of Korean War. The formation of medical professionals in Taiwan was tied to Taiwan's postwar historical transition.⁸⁰ During the 1950s,

⁷⁶ Fu, 2005.

⁷⁷ Ibid.

⁷⁸ Wayne Soon, *Global medicine in China: A diasporic history* (Stanford University Press, 2020).

⁷⁹ Soon, 2020, 155–198.

⁸⁰ Shiyung Liu, 2017.

major US medical aid to Taiwan was dealt with in both diplomatic and medical aspects by the Nationalist Chinese government, such as school health (學校衛生), which was launched in 1953 as one focal point of the US Aid health program in Taiwan.⁸¹ Another crucial factor was global health and international organizations. Taiwanese medical historian Harry Yi-Jui Wu has a transnational critique on the interpretation of the success of anti-malaria in Taiwan beyond a national scale, so as to prevent our historical research from falling into the trap of methodological nationalism.⁸² Historian Yi-Tang Lin engages with the international collaboration of statistical science among levels of experts in China and Taiwan and their work with international organizations.⁸³

Wen-Hua Kuo's work suggests that the US experts encouraged Nationalist China to shift its population policy in Taiwan from a pro-birth approach to a birth-control based strategy, based on developmentalist calculations that viewed population growth as a potential obstacle to economic development.⁸⁴ The US provided technical assistance and financial support to help Nationalist China implement its population control policies, which included promoting the use of contraceptives and family planning education. In regard to the collaborative family planning implementation between the US agencies and the Nationalist Chinese government in early Cold War Taiwan, Taiwanese sociologist Yu-Ling Huang applies the framework of biopolitics to trace the historical transition of the Rockefeller Foundation's goal from improving agricultural

⁸¹ Tsui-hua Yang, "US Aid in the Formation of Health Planning and the Medical System in Taiwan." *Bulletin of the Institute of Modern History Academia Sinica*, 62 (2008): 91-139, 98.

⁸² Harry Yi-Jui Wu, "Beyond the Scope of the State Anti-Malaria Campaigns in and out of Taiwan," *Taiwan: A Radical Quarterly in Social Studies* 88 (2012): 229-247.

⁸³ Yi-Tang Lin, *Statistics and the Language of Global Health: Institutions and Experts in China, Taiwan, and the World, 1917-1960* (Cambridge: Cambridge University Press, 2022).

⁸⁴ Wen-Hua Kuo, "Politicizing Family Planning and Medicalizing Reproductive Bodies: US Backed Population Control in 1960s Taiwan," *Taiwan: A Radical Quarterly In Social Studies* 32 (1998): 39-82.

production to managing the fertility rate through social experimentation in contraceptive techniques on Taiwanese women.⁸⁵

While colonial medicine and public health development have attracted Taiwan's medical historians since the political democratization during the mid-1980s, the role of US Aid in medical and health infrastructures during the postwar era have received less attention among Taiwanese scholars. According to Taiwanese historical sociologist Hung-Jeng Tsai, the American government's interventions in postwar Japan included accelerating the democratization of Japanese political structure and the war-supported millionocracy in Japan.⁸⁶ However, by 1947, the growing global political confrontation between the communist and democratic alliances had changed the aim of US foreign policy to balancing regional powers in order to prevent political conflicts and the expansion of communism.⁸⁷ In the name of building a democratic alliance system, the United States started financial and technical assistance programs in East Asia. For example, from 1951 to 1965, Taiwan received an average of US\$100 million

⁸⁵ Yu-Ling Huang, "Bio-political Knowledge in the Making: Population Politics and Fertility Studies in Early Cold War Taiwan," *East Asian Science, Technology, and Society: An International Journal* 10, no.4 (2016): 343-353. Aya Homei and Yu-Ling Huang, "Introduction: Population Control in Cold War Asia," *East Asian Science, Technology, and Society: An International Journal* 10, no. 4 (2016): 377-399. Yu-Ling Huang, *The Population Council and Population Control in Postwar East Asia*. North Tarrytown: Rockefeller Archive Center Online Research Reports, 2011. Family planning and population control is a crucial topic in critical East Asia researchers. The history of gendered technology and population health, see Hsiu-Yun Wang, "The Making of the 'Useless and Pathological' Uterus in Taiwan, 1960s to 1990s," *Medical History* 65, no. 1 (2021): 46-69. The relevant historical investigation of Japan, see Aya Homei, *Science for Governing Japan's Population* (Cambridge University Press, 2022); Aiko, Takeuchi-Demirci, "From race biology to population control: The Rockefeller Foundation's 'Public Health' projects in Japan, 1920s-1950s," in *Science, Public Health and the State in Modern Asia*, Liping Bu, Darwin H. Stapleton, Ka-che Yip eds., 113-128. London: Routledge, 2012. Population control in Dong's China, see Susan Greenhalgh, *Just One Child: Science and Policy in Deng's China* (Berkeley: University of California Press, 2008); The postwar entanglement of diseases control and family planning, see Aya Homei and John P DiMoia, "Integrating Parasite Eradication with Family Planning: The Colonial Legacy in Post-War Medical Cooperation in East Asia," *Social History of Medicine* 34, Issue 4 (2021): 1094-1115; Matthew Connelly, "The Cold War in the long duree: global migration, public health, and population control," in *The Cambridge History of the Cold War, vol. III. Endings*, M. P. Leffler and O. A. Westad (eds.) (Cambridge: Cambridge University Press, 2009).

⁸⁶ Hung-Jeng Tsai, "Historical Formation of Population Policy in Taiwan," *Taiwanese Journal of Sociology* 39 (2007): 65-106, 90-95.

⁸⁷ Tsai, 91.

every year; this amount generally contributed 5%–10% of Taiwan’s GDP from the 1950s to the 1960s.⁸⁸

Health Program and Training

As Taiwanese historian Tsui-Hua Yang has discussed, medical nursing and health practitioners’ education was the most important tasks in the US Aid’s health program in Taiwan (美援衛生計畫).⁸⁹ Although medical education had been established during the Japanese colonial period, it was criticized by American officials and experts for not meeting their criteria of “modern medicine.” The frequent interactions between health professionals in Taiwan, the United States, and international organizations had built up an Americanized form of an international training system. The United States attempted to achieve the goal through providing fellowships for Taiwanese young professionals to study abroad and for health officials in Taiwan to visit the facilities in the United States. During the martial law period, Taiwanese were not allowed to travel abroad freely and the professional training in health related fields became one significant funnel for young Taiwanese and Chinese Mainlanders in Taiwan to leave the country.

The training of Americanized-type nurses in Taiwan was a serious concern of several US leading organizations, including UNARRA, ABMAC, WHO, and China Medical Board (CMB), due to the infectious disease outbreaks in postwar Taiwanese society caused by the Chinese Nationalist evacuation and the additional 1.5 million population they brought.⁹⁰ According to

⁸⁸ Pao-yu Ching, *Quanzhihua yu zibenzhuyi weiji* (Globalization and the Crisis of Capitalism) (Taipei: Chuliu, 2005), 130-131; Jenn-Hwan Wang, “Taiwan de zhengzhi zhuanxing yu fandui yundong (The Political Transformation and Social Movements in Taiwan),” *Taiwan: A Radical Quarterly in Social Studies* 2, no.1 (1989): 71-116.

⁸⁹ Yang, 2008, 99.

⁹⁰ Shu-ching Chang, “World Health Organization and the Development of Nursing in Taiwan During 1950s,” *Bulletin of Academia Historica* 56 (2018): 43-69.

Chang, the largest amount of funding was given to National Taiwan University (previously the Taihoku Imperial University established by the Japanese empire, which had been recognized as such by a representative of Japanese-Germany medical facility) to be transformed by international health organizations and the Chinese Nationalist government. During this process, the WHO provided American forms of nursing training and fellowships for nursing students in Taiwan.⁹¹ In my own research paper on the postwar CMB fellowship programs in Taiwan, I argue that it facilitated a gigantic wave of young health professionals moving from Taiwan's two elite medical schools—the Medical College at the National Taiwan University (NTU) and NDMC—to the United States during the postwar era. I argue that it was CMB's shifting focus from Mainland China to Taiwan and a broader East Asia (1951–1973) was strategic evaluation when facing the Chinese Civil War.⁹²

The postwar reconstruction of medical facilities in Taiwan was largely arranged by American organizations and research facilities. Among all the hospitals and medical schools, NTU hospital and Taipei Veterans General Hospital received most of the US Aid attention. As Yang has analyzed, ABMAC and Duke University both played a huge role in this Americanization of medical institutions in Taiwan since the early 1950s.⁹³ By 1954, US Aid program supported both President Tian-Cheng Gao (高天成) and Vice-President Shi-Rong Qiu (邱仕榮) of NTU hospital for a short-term visit at Duke University to learn the American form of hospital management. Regarding medical education, the paradigm also shifted from Japanese type of medical lectures into American system of group discussion. As President Kuo graduated

⁹¹ Chang, 2010, 152.

⁹² Shinyi (Hsin-Yi) Hsieh, "The China Medical Board's Fellowship Programs and Its Shifting Focus to Taiwan during the Postwar Era, 1951–1973," *Rockefeller Archive Center Research Reports*. 2023.

⁹³ Yang, 2008, 109.

from Tokyo Imperial University in Japan, Vice-President Chou received his MD degree at Taihoku Imperial University. Their prestigious status within the medical system in Taiwan and their continuous training during the postwar era in the United States demonstrate the transition from Japanese form of medical bureaucracy to an American type of medical standard.

In contrast to the analysis of medical institutions and policy, some Taiwanese historians have illustrated young health professionals' voices. By analyzing the young medical students and physicians' overseas experiences published in the medical school magazine *Qingxing* (青杏), historian Hung Bin Hsu demonstrates that the US Aid programs created a pipeline for the mass migration of Taiwanese young doctors to the United States since the late 1950s. This article provides researchers a deeper understanding of the relationship between Taiwanese medical graduates' career choices, their pressures from the competitive market, political surveillance, and restricted research sources in the postwar Taiwan.⁹⁴ Kuo Wen-Hua instead chose to focus on the life history of a Taiwanese neurosurgeon, Dr. Albert Ly-young Shen (1936-1985), addressing the sponsorship between US financial assistance and Dr. Shen's residency training in the United States, and how he was one of the "experiment subjects" of the newly established neurosurgery education and exchange programs in postwar Taiwan.⁹⁵

⁹⁴ Hung Bin Hsu, "Medical Education, Professional Career and the Exodus of Young Doctors in Taiwan during the 1950s and 1960s, an Analysis based on *Qingxing*," *Chung-Hsing Journal of History* 27 (2013): 53-82.

⁹⁵ Wen-Hua Kuo, "Crafting Medical Professionals: Dr. Albert Ly-Young Shen as an Exemplar for Role Modeling," *Journal of Humanities, Social Sciences and Medicine* 1 (2014): 14-15.

Race and Ethnicity

Asia and Pacific islands have a long history of US scientific interventions. The early 20th century formations of racial and ethnic knowledge on islands around the Pacific Rim have shown a very different racial or racist concern by the demographic compositions.⁹⁶ In *Cultivation of Whiteness*, Anderson focuses on the formation of the notion Whiteness and its relation to the “surprisingly ambiguous and unsettled position of indigeneity” in the colonial Australian setting. According to him, the notion of Whiteness was a colonial and imperial design implemented through medical scientists, public health workers, and colonial bureaucrats in their tropical settlement.⁹⁷ For the late-19th to early-20th century Philippines, in his another work *Colonial Pathologies*, Anderson argues that the US-led health programs and research on tropical diseases has a racialized tendency and greatly impacted on the development of US military medicine and its foreign outreach to other parts of Asia Pacific.⁹⁸

In the US history of the domestic public health movement and international border control, the conception of race has been reflected in the epidemiological forms of public health knowledge often linking to the concerns of immigration, morality, and civilization.⁹⁹ *Contagious*

⁹⁶ See Alison Bashford, *Imperial Hygiene: A Critical History of Colonialism, Nationalism and Public Health* (Houndsmills: Palgrave Macmillan, 2004) and Tracy Telsow, “Harry Shapiro’s Boasian Racial Science,” in *Constructing Race The Science of Bodies and Cultures in American Anthropology*, 168-227 (Cambridge: Cambridge University Press, 2014), 180. According to Telsow, the terms “Polynesia,” “Melanesia,” and “Micronesia” – the three areas comprising the Pacific Islands – date from the eighteenth and nineteenth centuries. Based on Telsow’s description, “Polynesia is a collective name for numerous small islands in the East-Central Pacific, bounded by Hawaii at the apex, New Zealand at the base, and Easter Island on the east. Polynesia includes Pitcairn Island, Tahiti, the Marquesas, the Tuamotu Archipelago, and the Society Islands (all formerly French Polynesia), as well as Tonga, Samoa, the Cook Islands, and the Austral Islands.” See Telsow, 2016, on 180.

⁹⁷ Warwick Anderson, *The Cultivation of Whiteness: Science, Health, and Racial Destiny in Australia* (Durham: Duke University Press, 2006), 6.

⁹⁸ Warwick Anderson, *Colonial Pathologies: American Tropical Medicine, Race, and Hygiene in the Philippines* (Durham, NC: Duke University Press, 2006).

⁹⁹ See Nayan Shah, *Contagious Divides: Epidemics and Race in San Francisco’s Chinatown* (Berkeley: University of California Press, 2002); Alan M. Kraut, *Silent Travelers: Germs, Genes, and the “Immigrant Menace* (Baltimore:

Divides illustrates how public health research in San Francisco's Chinatown since the mid-19th century linked the disease patterns of Chinese immigrants to their "immoral" behaviors and life style and to control these newcomers by sanitary reform in order to protect the health and morality of the White population.¹⁰⁰ Sociologist Alexandre I. R. White argues that "epidemic Orientalism" has been functioning throughout the 20th century history of international regulation and discourses surrounding infectious disease control, "as much as infectious disease control has been a project of protectionism, it has also been a project of defining difference for the purpose of control."¹⁰¹ Further, "this vision of the modern West exists by constructing a veil of difference between West and rest, with disease, differentials of political and economic power, and race operating as signifiers of difference."¹⁰²

Beyond the yellowness constructed under White gazes, Taiwanese and Japanese historians have illustrated the racial discourse developed in Japanese colonial medicine and anthropology that attempted to distinguish itself from White colonial regimes.¹⁰³ In postwar

Johns Hopkins University Press, 1995); Amy L. Fairchild, *Science at the Borders: Immigrant Medical Inspection and the Shaping of the Modern Industrial Labor Force* (Baltimore: Johns Hopkins University Press, 2003).

¹⁰⁰ Shah, 2001.

¹⁰¹ Alexandre I. R. White, *Epidemic Orientalism: Race, Capital, and the Governance of Infectious Disease* (Stanford University Press, 2023), 11. On cultural dimension of Cold War Orientalism, Taiwan, and a broader Asia, see Allen Chun, "An oriental orientalism: the paradox of tradition and modernity in nationalist Taiwan," *History and Anthropology* 9, no. 1 (1995): 27-56; Christina Klein, *Cold War Orientalism: Asia in the Middlebrow Imagination, 1945-1961* (Berkeley: University of California Press, 2003).

¹⁰² White, 2023, 11.

¹⁰³ Wei-chi Chen, "Natural History, Anthropology and Knowledge Construction of 'Race' in Modern Taiwan: Local History with Global Concept," *Taiwan Historical Research* 16, no. 4 (2009): 1-35; Wei-chi Chen. "Tadai-Antei and the "Taitung Colony Survey Report" Colonialism, Knowledge Construction, and the Representation Politics of Eastern Taiwan," *Eastern Taiwan Studies*, no.3 (1998): 103-146. Yen-Chiou Fann, "Tropical Acclimatization, Japanese Imperial Medicine and Racial Discourses in Colony," *Taiwan: A Radical Quarterly in Social Studies* 57 (2005): 87-138; also Fann, "Visualizing Hygiene: Hygiene Exhibitions in Colonial Taiwan during the 1910s." *Taiwanese Journal for Studies of Science, Technology and Medicine* 7 (2008): 65-124; Hsien-Yu Chin, 1998. Besides, the recent scholars also claim there is a racial superiority of the Japanese empire because of their closer racial affinity to other Asian societies than to Caucasians, making it easier for the Japanese to adapt to tropical climates and as a justification for their colonial project. See Tomiyama Ichiro, "Colonialism and the Sciences of the Tropic Zone: The Academic Analysis of Difference in the Island Peoples," *Taiwan: A Radical Quarterly in Social Studies* 28 (1997): 209-234; Yu-Chuan Wu and Hui-Wen Teng, "Tropics, Neurasthenia, and Japanese Colonizers:

Taiwan, the issue of ethnicity replaced race as a core issue, but the focus of historical analysis was mostly on the cultural and political formation of ethnic identity rather than on medicine and scientific conception of ethnicities in Taiwan.¹⁰⁴ As similar as the former Japanese empire, the later Chinese nationalist government shared a similar concern about population health in Taiwan for their nation building purpose. Researchers have demonstrated how ethnic conceptualizations imply not just biological characteristics but also concerns of nationality, immigration, culture, and their visions of history and the future.

As historian Wen-Hua Kuo explained, the concept of minzhu (民族) might be more suitable for capturing how race and ethnicity act in the East Asia contexts.¹⁰⁵ The common terminology of minzhu mixes the ideas of race, ethnicity, and nation-state and, although seldom addressed by Cold War American researchers in Taiwan, was widely understood in East Asia.¹⁰⁶ Through learning with this group of excellent historical studies, this dissertation pays attention to the possible racial, ethnic, and minzhu implications in the following chapters.

Wen-Hua Kuo also called for more historical investigations on US assistance in Taiwan's postwar STM; but he also identified that US Aid research was difficult because it involved

The Psychiatric Discourses in Late Colonial Taiwan," *Taiwan: A Radical Quarterly in Social Studies* 54 (2004): 61-103.

¹⁰⁴ The discussion on ethnic formation of Taiwanese in cultural and political aspects see, John Makeham and A-chin Hsiao, eds. *Cultural, Ethnic, and Political Nationalism in Contemporary Taiwan* (New York: Palgrave Macmillan, 2005); Hua-yuan Hsueh, Pao-tsun Tai, and Mei-li Chow, *Is Taiwan Chinese? A History of Taiwanese Nationality*. Tamsui: Taiwan Advocates, 2005; Melissa J. Brown. *Is Taiwan Chinese? The Impact of Culture, Power, and Migration on Changing Identities* (Oakland: University of California Press, 2006).

¹⁰⁵ Wen-Hua Kuo, "Put Asia on the Map of Race; Put Race on the Map of Asia." *East Asian Science, Technology and Society*, 6, no. 3 (2012): 419-426; Wen-Hua Kuo, "East Asian Ethnicity in the Clinical Trial Studies," in *A History of Healing in East Asia Colonialism, Gender, and Modernity*, Shiyung Liu and Wen-Ji Wang (ed.), 303-320 (Taipei: Linking Publishing, 2017).

¹⁰⁶ The term pronounces in Chinese as minzhu, in Japanese as minzoku and in Korean as minjok.

archives located in different governmental agencies and non-governmental organizations on the global scale.¹⁰⁷ The access to the archives also links to Nationalist China's authoritarian legacy in Martial Law Taiwan (1949–1987). Taiwanese historians Tsui-hua Yang and Tsung-Min Wu both challenge that the seemingly neglected research interests in US Aid's impact on Taiwan was actually a Nationalist Chinese colonial consequence of the restriction of archives and freedom of speech during martial law enactment in Taiwan.¹⁰⁸

An Examination of NAMRU-2, the Mobile Agent of Postcolonial Imperial Regime

*“The world of NAMRU-2 is populated with animals and organisms but most of all with people—millions and millions of people, most of them at least mildly sick and suffering.”*¹⁰⁹

On April 28, 1955, NAMRU-2 decided to move its operations to Taiwan for the scientific investigation of tropical medicine, endemic diseases, and infectious diseases in Asia-Pacific. NAMRU-2, which was also known as the “Rockefeller Institute Unit,” was established in Guam in World War II and then deactivated in 1946 until its re-establishment in Taiwan “as a joint effort with the Chinese Nationalist government.”¹¹⁰ Taiwan played a geographically significant role in securing democratic alliances in the Pacific with Japan, South Korea, and the Philippines, the so-called “first island chain” formed by the U.S. Cold War policy to prevent the invasion of Chinese communism. The western militaries have a long history of engagement with global health, from the early 18th-century colonial motives to protect the empire and explore unknown

¹⁰⁷ Kuo, 2010, 183. Kuo also highlighted the rapidly-growing number of studies on Japanese colonial medicine since the late 1980s (i.e., the end of martial law in Taiwan).

¹⁰⁸ Tsung-Min Wu, “US Aid and the Economic development in Taiwan.” *Taiwan: A Radical Quarterly in Social Studies* 81 (1988): 145-158; Yang, 2008.

¹⁰⁹ United States Information Service. *NAMRU-2 Outpost Against Disease; U.S. Navy Medical Research in the Pacific* (Taipei: United States Information Service, 1961), 4.

¹¹⁰ Division of Bureau of Medicine and Surgery, “Brief of the Medical and Biological Programs Research,” prepared for the Institute of Defense Analysis, December 2, 1961.

lands to the 20th-century efforts to strategically become part of R&D funding, which involved building scientific diplomacy by cultivating relationships with civil societies, international organizations, and local governments, especially in areas of conflict.¹¹¹

In late September 1955, the NAMRU-2 contract was signed between National Taiwan University and the United States under Public Law 480. A shore activity assigned to the Operating Forces of the Navy, it was under the military command of the Taiwan Defense Command, unless otherwise directly by the Chief of Naval Operations, and was under the management of the Bureau of Medicine and Surgery and the supervised of the Economic Cooperation and Development (CIECD) of the Chinese Nationalist government.¹¹² In the early stage of the Cold War, health was associated with the nation's economic development and was “described as a safeguard against communist forces that were taking advantage of and exploiting the sick and impoverished throughout the world.”¹¹³

NAMRU-2 was one of the medical and biological programs in the research division of the Bureau of Medicine and Surgery in the Department of the Navy. According to BUMED, “Its

¹¹¹ The literature on military and global health see Derek Licina, “The Military Sector's Role in Global Health: Historical Context and Future Direction,” *Global Health Governance* 6, no. 1 (2012): 1-30; Matthew Lim and David Blazes, “Collateral Duty Diplomacy’: The US Department of Defense and Global Health Diplomacy,” *Science & Diplomacy* 4, no. 3 (2015) <http://www.sciencediplomacy.org/article/2015/collateral-duty-diplomacy>; Jonathan Kennedy, David McCoy, Marian Abouzeid, and Samer Jabbour, “Militaries and global health,” *The Lancet* 394, no. 10202 (2019): 916-917; Roberto Biselli, Roberto Nisini, Florigio Lista, Alberto Autore, Marco Lastilla, Giuseppe De Lorenzo, Mario Stefano Peragallo, Tommaso Stroppolini, and Raffaele D’Amelio, “A historical review of military medical strategies for fighting infectious diseases: From battlefields to global health,” *Biomedicines* 10, no. 8 (2022): 2050. Joshua Michaud, Kellie Moss, Derek Licina, Ron Waldman, Adam Kamradt-Scott, Maureen Bartee, Matthew Lim et al. “Militaries and global health: peace, conflict, and disaster response,” *The Lancet* 393, no. 10168 (2019): 276-286. On health and global health diplomacy, see Vincanne Adams, Thomas E. Novotny, and Hannah Leslie, “Global Health Diplomacy,” *Medical Anthropology* 27, no. 4 (2008): 315–23; Kickbusch, Ilona, and Graham Lister, “Defining Health Diplomacy: Changing Demands in the Era of Globalization,” *The Milbank Quarterly* 89, no. 3 (2011): 503-523.

¹¹² “yi jiu liu er nian du mei guo hai jun yi xue yan jiu zhong xin (The U.S. NAMRU-2, 1962).” Ministry of Economic Affairs Archives (36-11-003-113), Institute of Modern History, Academia Sinica.

¹¹³ Licina, 2012, 5. Also see Sotiris Litsios, “Rene J. Dubos and Fred L. Soper: Their Contrasting Views on Vector and Disease Eradication,” *Perspectives in Biology and Medicine* 41, no. 1 (1997): 138-149.

[NAMRU-2] relationship with civilian and military organizations provides support in a broad field of endeavor which is effectively producing medical information on diseases of this less known area of the world.”¹¹⁴ The 1961 facility map shows that NAMRU-2 was one of the U.S. naval laboratories established “in strategic areas overseas”¹¹⁵, along with NAMRU-3 in Cairo and its subunit in Sudan.

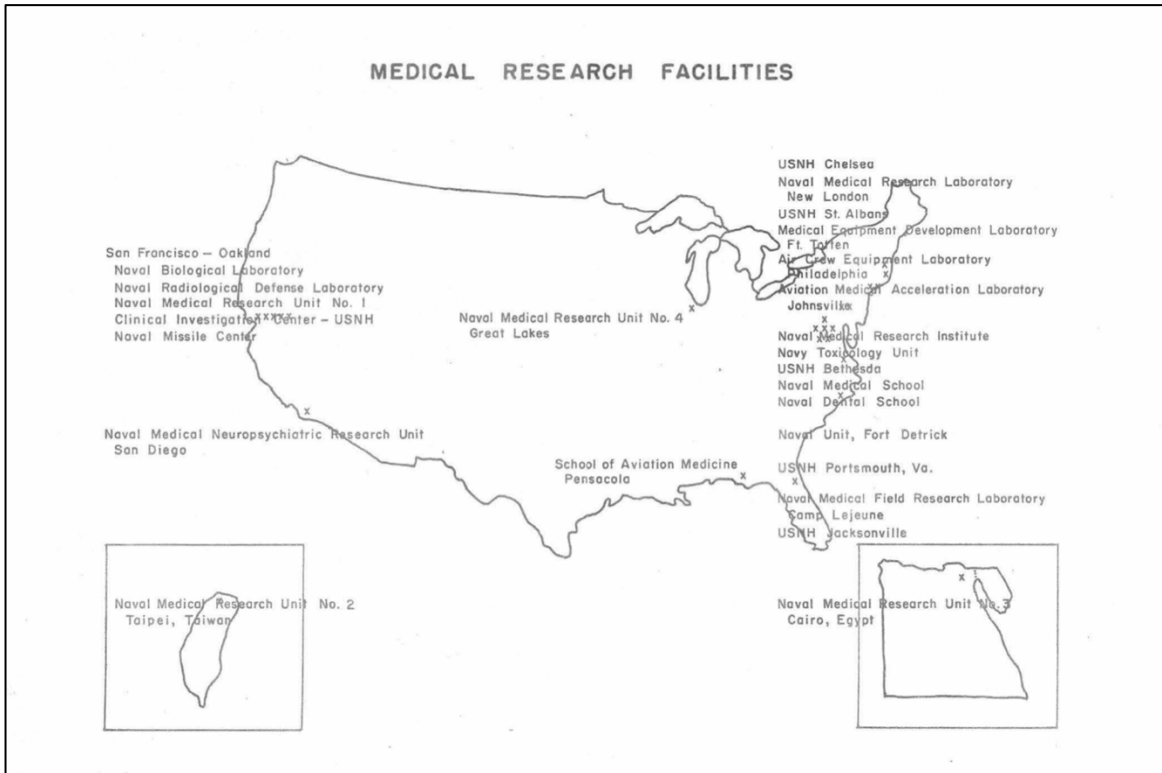


Figure 2.1: “Brief of the Medical and Biological Programs Research Division.” Bureau of Medicine and Surgery prepared for the institute of defense analysis december 2, 1961.

¹¹⁴ The concept of the research division was “the best in medical research originates at the working level, originates with the scientist directly associated with the operational problem and is best accomplished by scientific task forces working in close proximity or within the problem area,” see Bureau of Medicine and Surgery, 1961, 28.

¹¹⁵ Ibid.

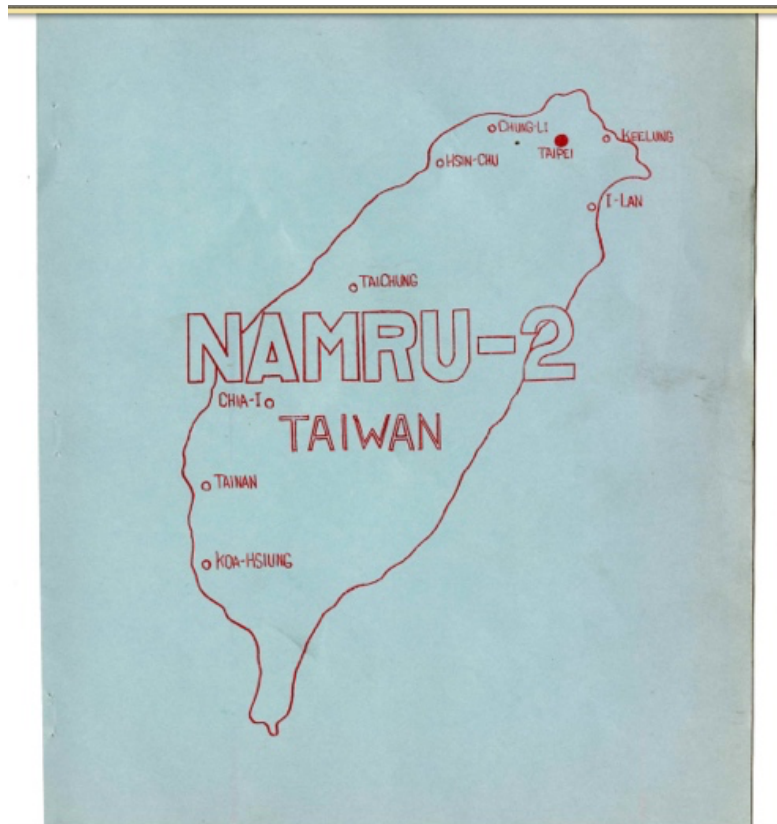


Figure 2.2: The NAMRU-2 in Taiwan (Mss.B.R52, NAMRU-2 [Naval Medical Research Unit No. 2], Folder 1, Thomas M. River Paper).

From October 15, 1955, to October 14, 1975, NAMRU-2 was located in downtown Taipei, specifically on the third floor of a dark red townhouse rented from the National Taiwan University Hospital.¹¹⁶ A former nurse dormitory, the townhouse had been extensively remodeled and augmented through additions to existing buildings. The aerial perspective provides a comprehensive view of the building and its grounds. The unit includes both the research area and the wards for patients who were also research subjects for different medical experiments. Most of the labs were located in the left wing of the building, while offices and supporting facilities were located in the upper left section of the central building.¹¹⁷

¹¹⁶ Ibid.

¹¹⁷ Ibid. and “Taiwan-NAMRU-2,” Box 38, Tillman Durdin Papers (MSS 0095), UC San Diego University Archive; “mei guo hai jun di er yi wu yan jiu zhong xin; mei hai jun zhu wo mie shu (US NAMRU-2; the US Navy Solving Mouse Problems for Us).” Ministry of Foreign Affairs Archives (11-07-02-13-05-09), Institute of Modern History,

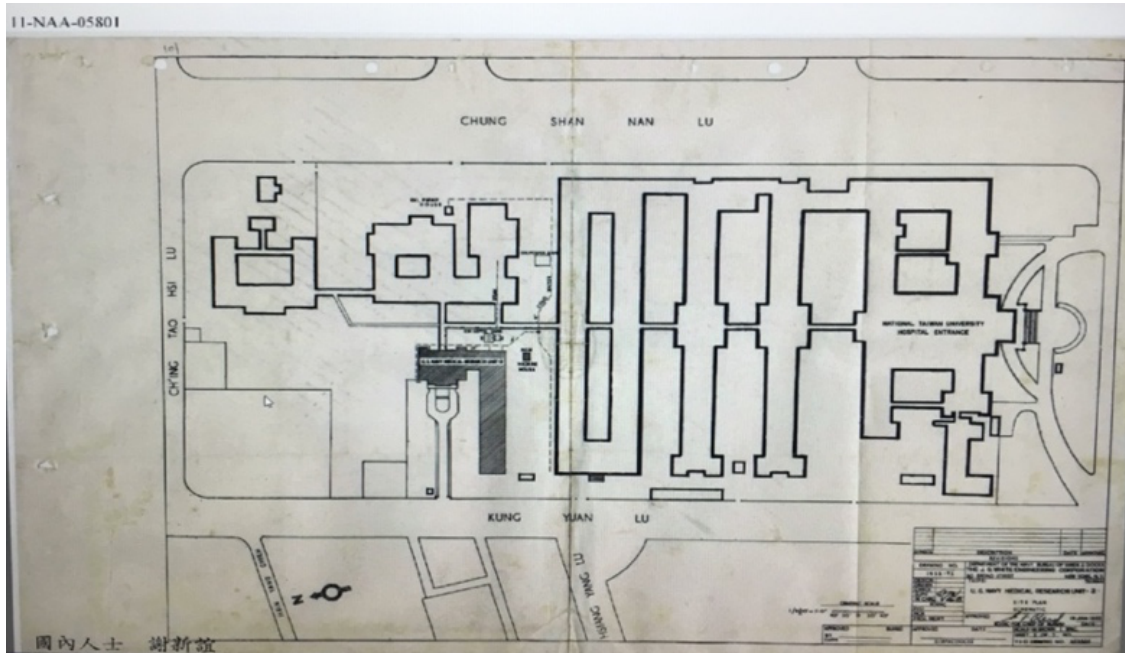


Figure 2.3: NAMRU-2 site plan, 1955 (Ministry of Foreign Affairs Archives, 11-07-02-13-05-09).



Figure 2.4: NAMRU-2 building at National Taiwan University Hospital (Tillman Durdin Papers (MSS 0095), UC San Diego Archive).

Academia Sinica; “tai bei mei guo hai jun yi xue yan jiu zhong xin (NAMRU-2 Center in Taipei).” Ministry of Interior Archive (02800000209A), Academia Historica. Also see Stephen J. Savarino, “A Legacy in 20th-Century Medicine: Robert Allan Phillips and the Taming of Cholera,” *Clinical Infectious Diseases* 35, issue 6 (2002): 713–720.

The building was located immediately next to the NTU Hospital. Dr. Jhe-nan Lin (林哲男, 1940–Present) remembered that during their residency at NTU Hospital in the 1960s, they were extremely jealous of their neighbors at NAMRU-2 next door due to their air-conditioned environment.¹¹⁸ He told me: “the summer in Taipei was extremely hot so we the residencies could only wear tank top while working; to the contrary those American officers still wore suits since they had air-conditioned rooms at NAMRU-2.”¹¹⁹ The two facilities were located so closely together that when an explosion occurred in a virological laboratory at NARMU-2 in the late morning on May 30, 1966, the department of pediatrics at NTU Hospital was damaged: the windowpanes shattered in seven wards, hurting three child patients and their families as well as two pediatricians.¹²⁰

NAMRU-2 and the Nationalist Chinese government had bonded diplomatically in many ways. For example, as shown in the collection of Mei-ling Soong (蔣宋美齡) at Academia Historia of Taiwan, the visit of the powerful former first lady of the Republic of China to NAMRU-2 on January 11, 1961, has been meticulously documented and preserved; this collection includes a picture of her talking to the former NAMRU-2 Commander Robert Allan Phillips (1906–1976) in front of a banner bearing the phrase “Benefit the Poor (惠及貧困),” which was awarded by Dr. Tien-Chen Kao (高天成), the former president of the NTU Hospital,

¹¹⁸ The conversation happened during my interview with Chun-Mei Chang (張春梅), a former NAMRU-2 female technician. Dr. Lin is her husband, and I was grateful to have him shared his observation with me. The interview was conducted, recorded, and transcribed, on August 11, 2022

¹¹⁹ Also see Jhe-nan Lin, *Wode waiké rensheng: linzhenan yishi huiyilu* (Taipei: Commonwealth Publishing, 2019).

¹²⁰ United Daily, “mei hai jun yi xue yan jiu suo zuo wu mei qi bao zha.” May 31, 1966, page 3. Within the total eleven injured people (all local Taiwanese), the three Taiwanese NAMRU-2 technicians harmed the worst. According to the news report next day (May 31, 1966), the three injured NAMRU-2 workers included: Yu-Yueh Ho (侯玉葉), 20 years old female researcher, seriously injured; Rong-Maou Lin (林榮茂), 23 years old male technician, serious injured; and Jing Xiang Li (李景祥), 21 years old male examiner, lacerations on both hands.

and was hanging next to an American national flag on the wall at the NAMRU-2 office (see Figure 2.5).



Figure 2.5: The NAMRU-2 Commander Captain Robert Phillips and Soong Mei-ling at NAMRU-2 Taiwan, January 11, 1961 (002-050113-00015-152, Soong Mei-ling Photos (蔣夫人照片資料輯集), no. 14, Chiang Kai-shek Archival Collection (蔣中正總統文物). Academia Historica, Taiwan.

The subsequent NAMRU-2 Commander, Dr. Raymond Henry Watten (1922–2013), stated that NAMRU-2 functioned as the “unofficial ambassadors of the United States” and maintained the relationship between “the American and Chinese community and civic affairs.”¹²¹ As a Taiwan-based U.S. agency, the infrastructure and social network of NAMRU-2 helped short-term U.S. visitors from philanthropical groups, international organizations, and academia with their medical and/or public health affairs. On the leadership level, the Rockefeller officer Roger F. Evans was driven around Taipei by the NAMRU-2 Commander on November 15, 1956, the day after their coming with the NTU President Chien Shih-Liang (錢思亮).¹²² To

¹²¹ The quote comes from *Free China Weekly*, 1971. Accordingly, the article said this paragraph of Dr. Watten was captured The philosophy of NAMRU-2 was summed up in Captain Watten's personal column in a recent issue of NAMRUGRAM, the unit's monthly publication.

¹²² RF Records, General Correspondence, RG2 1952-57 Series 1956/600, box 67, 446A.

assist the U.S. visiting professor program hosted by the China Medical Board (formally affiliated with the Rockefeller Foundation), NAMRU-2 agreed to provide resources such as laboratory space and housing for the visiting consultants, and to assist local transactions for stipends and reimbursement.¹²³

Following the looting and destruction caused by the May 1957 riot in Taiwan, NAMRU-2 fulfilled its function as an “unofficial ambassador of the United States” by allowing the official U.S. embassy to temporarily relocate itself to the NAMRU-2 building.¹²⁴ NAMRU-2 also participated in the Vietnam War and several dispatchments in Southeast Asia during the 1960s. For example, in 1960, the Royal Thai government requested that a NAMRU-2 field team assist in combating a Cholera epidemic in Bangkok and in field trips to North Borneo (now Malaysia).¹²⁵ From 1970 onward, NAMRU-2 gradually shifted its facilities and research focus to North Borneo, the Philippines, Cambodia, and Indonesia, until 1979, when it officially moved out of Taiwan to Manila after the Carter Administration terminated the diplomatic relation with the Republic of China in Taiwan.¹²⁶

To address the problems of tropical medicine in Asia-Pacific, as stated by NAMRU-2 itself, “the world of NAMRU-2 is populated with animals and organisms but most of all with

¹²³ CMB records, SG 1, S1, box 5, folder 13; CMB, SG1, Series 2, B76, F1296; CMB, SG1, Series 2, B76, F1287; CMB, SG1, Series 2, B76, F1291; CMB, SG1, Series 2, B75, F1284; CMB, SG1, Series 2, B75, F1285.

¹²⁴ The May 1957 Taiwan riot is a protest in Taiwan against the court decision after an American sergeant Robert G. Reynolds found innocent after shooting a Chinese man Liu Ziran. The detailed examination see Stephen G. Craft, *American Justice in Taiwan: The 1957 Riots and Cold War Foreign Policy* (Lexington, KY: University Press of Kentucky, 2016); “Interview with Joseph A. Yager,” The Association for Diplomatic Studies and Training Foreign Affairs Oral History Project, interviewed by Charles Stuart Kennedy (initial interview date: November 3, 1999), <http://hdl.loc.gov/loc.mss/mfdip.2004yag01>

¹²⁵ Savarino, 2002.

¹²⁶ H.R.2479 - Taiwan Relations Act, Congress GOV, accessed April 29, 2023, <https://www.congress.gov/bill/96th-congress/house-bill/2479>

people—millions and millions of people, most of them at least mildly sick and suffering.”¹²⁷ The main purposes of NAMRU-2 in Taiwan were laboratory research and field studies; the building also contained a ward section for administering treatment.¹²⁸ By 1971, the administrative chart showed 13 departments, such as data processing, graphic arts, clinical investigation, veterinary medicine, microbiology, medical physics, medical ecology, biochemistry, and pathology.¹²⁹ The majority of NAMRU-2 researchers and technicians (around 200–300 personnel; the number increased gradually each year) were non-American. For instance, in 1962, NAMRU-2 staff were formally comprised of 277 Chinese and 42 Americans, along with medical research fellows and guest investigators from Ireland, Indonesia, Korea, and China.¹³⁰ However, not everyone appreciated Taiwan’s position as the center of the international health network in postwar Asia. In the early 1960s, the Chinese Nationalist government criticized NAMRU-2 for using US-ROC funds yet conducting one-third of their research on topics outside Taiwan.¹³¹

¹²⁷ United States Information Service, *NAMRU-2 outpost against disease; U.S. Navy medical research in the Pacific*. Taipei: United States Information Service, 1961, on p.6.

¹²⁸ NAMRU-2’s experimental research on tropical diseases in postwar Taiwan, as with the history of knowledge production in the tropics, challenges the assumption of the “placeless” modern laboratory. Taiwan connected NAMRU-2 researchers to both the local monkey population and the endemic disease population, where the experiment could be revisited not only in the physical laboratory but also in a broader context—a different ecological, political, and economic zone in which the NAMRU-2 laboratory in Taiwan was situated.

¹²⁹ “Fighters against tropical disease,” *Free China Weekly*, July 01, 1971.
<https://taiwantoday.tw/print.php?unit=12&post=13672>

¹³⁰ Memo written by Chao-de Hu (胡超德), on August 24, 1964 in “1962 nien tumei kuohai chüni hsüehyen chiuchung hsin (NAMRU-2, 1962).” Ministry of Economic Affairs Archives (36-11-003-113), Institute of Modern History, Academia Sinica. Also see Commander Robert Phillips’s letter to C.C. Chang, secretary General at the CIECD (NAMRU-2/RAP:eh series 64-737) in “1962 nien tumei kuohai chüni hsüehyen chiuchung hsin (NAMRU-2, 1962).” Ministry of Economic Affairs Archives (36-11-003-113), Institute of Modern History, Academia Sinica.

¹³¹ CIECD’s memo in “1962 nien tumei kuohai chüni hsüehyen chiuchung hsin (NAMRU-2, 1962).” Ministry of Economic Affairs Archives (36-11-003-113), Institute of Modern History, Academia Sinica.

The research conducted by NAMRU-2 focused on several core diseases such as trachoma, cholera, blackfoot disease, Japanese encephalitis, and parasitological developments on the remote Turtle Island (Guishan, 龜山島).¹³² Many infectious disease threats to U.S. military operations were uncommon in the U.S. The advanced development and testing of countermeasures, such as vaccines and drugs, or the study of the history of the U.S. military's overseas medical research on insect repellents, required the capability to study the military lab system, which began around 1900.



Figure 2.6: In 1961, the NAMRU-2 research team came back from Turtle Island and at the original caption of this photo. According to the NAMRU-2 researcher, it was not the NAMRU-2 model to take a traditional Taiwanese canoe to conduct their parasite research, with local children as assistant, but “it worked out,” according to United States Information Service, 1961. (Photo from Tillman Durdin Papers (MSS 0095), UC San Diego Archive.

¹³² “TAIWAN NAMRU 2, 1961.” Box 38 , Folder 3, Tillman Durdin Papers (MSS 0095), UC San Diego Archive.

1958 saw the establishment of the NAMRU-2 fellowship for Asian scientists, which substantially increased international health and scientific collaborations among Asian countries and the U.S. Projects included snake antivenom studies conducted in collaboration with Korean scientists; cholera research and training missions (mapped out in the figure below) conducted from 1958 to 1969; and several research projects and training programs established in Taiwan and exported to other parts of Asia, including Vietnam, Thailand, Philippine, Malaysia, and South Korea.¹³³ NAMRU-2 also has a deep relation with indigenous Taiwanese animals; plants; parasites; viruses; and populations, from schoolchildren, the labor power of female (as the population majority) technicians, and young researchers from Taiwan and other parts of Asia.

NAMRU-2 has enabled a diverse range of written publications, spanning from scholarly research and military history to governmental documentation and personal recollections of former NAMRU-2 members in both the U.S. and abroad. NAMRU-2 deserves critical attention beyond researchers with military and medical backgrounds, and their contributions to medical history, military medicine, and social science should be further expanded upon. Dr. Stephen J. Savarino's historical examination lay at the intersection of disease and scientific figures in shaping the history of military medicine, the NAMRU-2 Commander Robert Allan Phillips, and his contribution to cholera control worldwide.¹³⁴ Published in *the Taiwan Journal of Public Health* in 2013, Dr. Meng-Chih Lee's review of NAMRU-2 provides valuable insights into the history of NAMRU-2 in postwar Taiwan, the relationship between its research programs and the local government and health professionals, and its scientific impact on current Taiwan.¹³⁵

¹³³ Ibid.

¹³⁴ Savarino, 2002, 713-720.

¹³⁵ Meng-Chih Lee, "NAMRU-2 and Taiwan Public Health," *Taiwan Journal of Public Health* 32, no. 1 (2013):1-5.

Meanwhile another recent dissertation work, written by Dr. Jau-Yi Wu, takes a military and diplomatic historical approach to NAMRU-2's operation in Taiwan.¹³⁶

In 1996, two military medical researchers reviewed the geographical location and goals of the U.S. military (both army and navy) regarding overseas medical research laboratories, particularly their emphasis on infectious diseases and entanglement with the changing geopolitical landscape.¹³⁷ Additionally, some case studies have focused on contemporary NAMRU-2 operations in Southeast Asian countries such as Indonesia and Cambodia, demonstrating the influence of rising political tensions and the Cold War legacy on global health collaborations regarding infectious disease control, and how NAMRU-2 operations contributed to current political disputes and diplomatic tensions between the U.S. and Indonesian governments regarding research ethics and scientific ownership.¹³⁸

Given the lack of historical investigation on NAMRU-2, I also collected several pieces from the biographies and autobiographies of former NAMRU-2 Taiwanese members, and the institutional and/or disease history published by the government and medical research institutes. These individuals often regarded NAMRU-2 as influential to their own professional training and

¹³⁶ Jau-Yi Wu, "Military, Diplomacy and Medicine: The Strategy of U.S. Naval Medical Research Unit Two in Taiwan (1950-1980)" (PhD diss., National Cheng Kung University, 2015).

¹³⁷ Jeffrey M. Gambel and Richard G. Hibbs Jr., "US military overseas medical research laboratories," *Military medicine* 161, no. 11 (1996): 638-645, 638. In parallel to NAMRU-2, the military history of NAMRU-3, another major overseas naval medical unit see RG Jr. Hibbs, "NAMRU-3: forty-six years of infectious disease research," *Military Medicine* 158, no. 7 (1993): 484-8. The review and history of U.S. army medical research overseas, particularly in Southeast Asia and its work on tropical medicine, see Adam Brown, and Sorachai Nitayaphan, "The Armed Forces Research Institute of Medical Sciences: Five Decades of Collaborative Medical Research," *Southeast Asian Journal of Tropical Medicine and Public Health* 42, no. 3 (May 2011): 477-490.

¹³⁸ Franklin L. III, Smith, "Advancing Science Diplomacy: Indonesia and the US Naval Medical Research Unit," *Social Studies of Science* 44, no. 6 (2014): 825-847; Dennis Normile, "Tropical Diseases. Dispute Clouds the Future of U.S. Naval Lab in Indonesia," *Science* 320, no. 5876 (2008): 598-599. It is important to note that in this Science article, the author states that "the NAMRU-2 opened in the 1970s" which is a total ignorance of the NAMRU-2 history in Taiwan since 1955.

scientific achievement as well as the public health progress of Taiwan in the postwar period.¹³⁹ Especially in the context of Taiwan's marginalized international status, NAMRU-2 has been seen as a honorary collective memory of being seen and being a crucial part of the global society in the postwar period. According to a news article published in 1971 on Taiwan Today, "Taiwan has reason for pride in being chosen as the best location for NAMRU-2 operations."¹⁴⁰

¹³⁹ Wei-Chuan Hsieh, "NAMRU-2: taida yiyuan xinjiu yanjiu jiaoti de qiaoliang," in *Taida yiyuan bainian huaijiu*, National Taiwan University Hospital ed., 178-181 (Taipei: National Taiwan University Hospital, 1995); also Wei-Chuan Hsieh and Jen-Yih Chu, *Taiwan redai yixue renwu: kaituo guoji jiaoliu de yijie xianqian* (Taipei: National Taiwan University Press, 2011); "Autobiography," in *Hsiehweichuan chiaoshou jungtui chinienlun wenchi*, the Committee of the Volume for Emeritus Dr. Wen-Chuan Hsieh ed. (Taipei: The Committee of the Volume for Emeritus Dr. Wen-Chuan Hsieh, 1997); Kunyan Huang, *Wobu yiyang de rensheng huang kunyan zizhuan* (Taipei: The Linking Publishing Company, 2008); Hsiu-Jung Chang, Ching-Chuan Liu, and Chun-Yi Lu, *Erke dashi li qingyun: ta de shidai ta de gushi* (Hsinchu: Rushi Culture Publisher, 2020). The public historians also highlighted the role of NAMRU-2 in the Hepatitis vaccine development in Taiwan, see Yu-Ling Huang and Shih-Cheng Luo, *Hepatitis Combat* (Taipei: Commonwealth, 2016).

¹⁴⁰ "Fighters against Tropical Disease." *Free China Weekly*, July 01, 1971.

CHAPTER TWO

Centering the Child Subject: The Multifaceted Children Mobilization in Global Health Campaign against Trachoma in Taiwan, 1952–1971

Introduction

In 1955, an article entitled, “Do you Know? Participate in Trachoma Control is a task for the Pride of Our Nation!” was published on *Health Journal* (衛生雜誌) in Taiwan. The author reported his observation of the current status of trachoma control program on the island:

“We all know that this trachoma control program is a contract our government signed up with the World Health Organization (WHO) and the UNICEF which provide assistance in medication and professional guidance; the international community has an extremely high expectation to our implementation. Therefore, our performance is not just about treating students with trachoma infection, but it is much more meaningful than that: Firstly, trachoma eradication is a requirement to become one of the advanced and modernized countries—there is no trachoma patients in European and American societies...Every member working for trachoma control program symbolizes an excellent cell of a healthy tissue, we are building a modernist and healthiest Free China. Our hard

work will be worthy, for the health of our citizens, our next generation, the health of the nation, and the health of the world!”¹⁴¹



Figure 3.1: The Drawing for the article ““Do you Know? Participate in Trachoma Control is a task for the Pride of Our Nation!””

This paragraph can be seen as a summary of for China-WHO-UNICEF cooperation on trachoma control (see Figure 3.1). The health program became very meaningful as part of nation’s modernity making agenda as well as for the world. It also mentioned this campaign was for “our next generation.” Indeed, it was a global health campaign targeting children and their eyes.

Inspired by the scholarship at the intersection of history of children’s health and critical childhood studies, this chapter aims to highlight the multifaceted role of *children* in the postwar global public health and examine the ways in which Taiwanese children participated in a series of trachoma control programs in postwar Taiwan.¹⁴² I argue that, as similar as trachoma now becomes one *Neglected Tropical Disease* (NTD) in the current global health discourse. Between

¹⁴¹ The original title and article is written in Mandarin, translated by the author. Shi-Jun Zhan, “ni zhi dao ma? fang zhi sha yan shi wei guo zheng guang de gong zuo,” *Health Journal* 8, no.2 (1955): 31-32.

¹⁴² “Children’s health” is a huge umbrella contains several topics. In the U.S. context, the scholarship has expanded to topics including (1) the rise of pediatrics and its relation to public health, child patients, and their family; (2) the establishment of children’s hospitals and individual institutions (2) the quantification and the standardization of child growth and development (4) the development of treatments, preventive methods, policy regarding common childhood diseases, see Stern, Alexandra Minna, and Howard Markel, eds, *Formative years: children's health in the United States, 1880-2000* (Ann Arbor, University of Michigan Press, 2002).

now and then, a significant campaign for women and children's health took place in the 1970s as part of the Alma-Ata Declaration.¹⁴³ Within the history of global health initiatives, the subject of child health has been a recurring topic in global health discourse for an extended period.

Historians have demonstrated that children's health gained considerable attention during the establishment of medical institutions in the latter half of the 19th century, alongside shifts in family dynamics during the early 20th century in the United States.¹⁴⁴

This chapter takes the standpoint of critical childhood studies that children are key actors who engage in history in various ways.¹⁴⁵ As a practice of child as method, it centers child as an analytical frame to reexamine the legacy of the U.S.-led international health campaign against trachoma in postwar Taiwan.¹⁴⁶ In addition, child as method provides a decolonial approach to engage with the history of science and medicine in East Asia. I argue that it was through centering the neglected children who engaged in postwar Taiwan's trachoma control, these apparently unrelated healthcare studies and programs could be connected within the family,

¹⁴³ World Health Organization, "WHO Alliance for the Global Elimination of Trachoma by 2020: progress report, 2019," *WHO Weekly Epidemiological Record* 30 (2020): 95, 349–360. However, trachoma is still a significant global health issue which is responsible for the blindness and vision loss of about 1.9 million people mostly in the global south today.

¹⁴⁴ The early spotlight on the infant subject and maternal health see Apple, Rima Dombrow. *Perfect motherhood: Science and childrearing in America*. Rutgers University Press, 2006; Apple, Rima D. *Mothers and medicine: A social history of infant feeding, 1890–1950*. Univ of Wisconsin Press, 1987.

¹⁴⁵ The relevant theoretical discussion see Myra Bluebond-Langner and Jill E. Korbin, "Challenges and Opportunities in the Anthropology of Childhoods: an introduction to "Children, Childhoods, and Childhood Studies"," *American anthropologist* 109, no. 2 (2007): 241-246; Allison James, "Giving voice to children's voices: Practices and problems, pitfalls and potentials," *American anthropologist* 109, no. 2 (2007): 261-272; the critical approach to research on children's health see Grace Spencer, Hannah Fairbrother, and Jill Thompson, "Privileges of power: Authenticity, representation and the "problem" of children's voices in qualitative health research," *International journal of qualitative methods* 19 (2020): 1609406920958597; José E. Hasemann Lara, "Care in Ruination: Accessing Children's Critiques of Health Through Playwriting," *Medical Anthropology* 41, no. 5 (2022): 546-559; Mary Wickenden and Gayatri Kembhavi-Tam, "Ask us too! Doing participatory research with disabled children in the global south," *Childhood* 21, no. 3 (2014): 400-417.

¹⁴⁶ Erica Burman, "Found childhood as a practice of child as method," *Children's Geographies*, 20, no. 3 (2022): 271-283. DOI: 10.1080/14733285.2019.1566518; Erica Burman, "Child as Method: Anticolonial Implications for Educational Research," *International Studies in the Sociology of Education* (2018) doi: 10.1080/09620214.2017.1412266. Erica Burman, *Fanon, Education, Action: Child as Method* (Abingdon: Brunner Routledge, 2019).

school, community, nation, and to international health sectors.¹⁴⁷ As the examinations of the first-half of 20th century Britain and the U.S. have indicated, the history of children's health is entangled with the development of public health which extended to the school-based health programs and service.¹⁴⁸

In addition, my analysis will revisit Taiwan's legacy of trachoma control by exploring its relationship to contemporary conceptions of childhood and Nationalist China's nation-building agenda in postwar Taiwan. According to historian Alan Prout, "in a world seen as increasingly shifting, complex and uncertain, children, precisely because they are seen as especially unfinished, appear as a good target for controlling the future—and perhaps, therefore, a target that still retains a wide social credibility."¹⁴⁹ In this chapter, I also aim to situate this children's health campaign in a broader historical transition of Taiwan from being a Japanese colony to an ally/semi-sovereign state within the U.S.-led international health network. Historian Michael Shiyung Liu has named this transition as a historical shift from Japan's health colonialism to America's tacit health imperialism.¹⁵⁰

Historians have illustrated that children's health became a critical issue throughout the early-establishment of medical institutions during the second-half of the 19th century and the

¹⁴⁷ Historian Wen-Hua Kuo has stated that the US Aid research was difficult because it involved archives located in different governmental agencies and non-governmental organizations in the global scale. Wen Hua Kuo, "How to Write a History of Public Health under U.S. Aid in Taiwan: A Critical Review." *Taiwan Historical Research* 17, no. 1 (2010): 175-210, 183.

¹⁴⁸ Richard A. Meckel, *Save the Babies: American public health reform and the prevention of infant mortality, 1850–1929* (Baltimore: Johns Hopkins University Press, 1990); Simon Szreter, "The importance of social intervention in Britain's mortality decline, c. 1850–1914: a re-interpretation of the role of public health," *Social History of Medicine*, 1, no. 1 (1988): 1-37. David Hirst, "The growth of treatment through the School Medical Service, 1908–18," *Medical History*, 33 (1989): 318–42.

¹⁴⁹ Alan Prout, "Children's participation: control and self-realisation in British late modernity," *Children & society* 14, no. 4 (2000): 304-315, 306

¹⁵⁰ Shiyung Liu, 2018.

transformation of family structure in the early-20th century United States.¹⁵¹ According to sociologist Chris Jenks, it was the modern structure of the family that enabled the nation-state to invest in “futures” through the economic and cultural construction of children.¹⁵² Children’s health has become a major public health concern for the Japanese empire throughout the 19th and the first-half of the 20th centuries, and so far most of the historical investigations on Taiwanese children’s health also focus on Colonial Taiwan.¹⁵³ The literature on colonial Taiwan provides this chapter with a solid background for examining the continuity and changes in children’s health programs and research from colonial Taiwan to postwar period.

Beyond the co-production of nationhood and childhood, postcolonial scholars further dissect the parallels between orientalism and childhood, colonialism and parenthood, superiority and inferiority.¹⁵⁴ As anthropologist Karen Valentin and Lotte Meinert have argued, “the idea of civilizing “the savages,” today's South, through children has continued in the post-colonial era

¹⁵¹ The literature on children’s health have expanded to several prevalent topics such as (1) the rise of pediatrics and its relation to public health, child patients, and their family; (2) the establishment of children’s hospitals and individual institutions (2) the quantification and the standardization of child growth and development (4) the development of treatments, preventive methods, policy regarding common childhood diseases, see Stern and Markel eds., 2002; Aimee Medeiros, *Heightened expectations: The rise of the human growth hormone industry in America* (University of Alabama Press, 2016); Elena Conis, *Vaccine Nation* (Chicago: University of Chicago Press, 2015); Leslie J. Reagan, *Dangerous pregnancies: Mothers, disabilities, and abortion in modern America* (Berkeley: University of California Press, 2012); Elena Conis, Sandra Eder, and Aimee Medeiros, eds. *Pink and Blue: Gender, Culture, and the Health of Children* (New Brunswick: Rutgers University Press, 2021).

¹⁵² Chris Jenks, “The postmodern child,” in *Children in Families: Research and Policy*, Brannen J, O’Brien M ed., chapter 4 (London: Routledge: 2002).

¹⁵³ Fann, 2005 and 2008; Shih-Yuan Hsien, “Zhimin zhuyi yu tiyu rizhi qianqi (1895-1922): Taiwan gongxiao jiao ticaoke zhi yanjiu (1895-1922): taiwan gongxuexiao ticaoke zhiyanjiu (Colonialism and Sports during the Early Japanese Colonial period (1895-1922): Gymnastics in the Public School of Taiwan),” Master thesis, National Central University, 2002. Ming Chun Lu, “riben lingtai shiqi de weisheng zhengce gongxiao jiao weisheng jiaoyu (School Hygiene, Health Education, and Health Policy in Public School during Japanese Colonial Taiwan),” Master thesis, Soochow University, 2002.

¹⁵⁴ Karen Valentin and Lotte Meinert, “The adult North and the young South: Reflections on the civilizing mission of children’s rights,” *Anthropology Today*, 25 no. 3, (2009): 23–28. Perry Nodelman, “The Other: Orientalism, Colonialism, and Children's Literature,” *Children's Literature Association Quarterly* 17, no. 1 (1992): 29-35. doi:10.1353/chq.0.1006; M. Daphne, Kutzer. *Empire's children: empire and imperialism in classic British children's books*. Routledge, 2002. Roderick McGillis, *Voices of the other: Children's literature and the postcolonial context* (New York: Routledge, 2013); Kinga Varga-Dobai, “Gender Issues in Multicultural Children's Literature—Black and Third-World Feminist Critiques of Appropriation, Essentialism, and Us/Other Binary Oppositions,” *Multicultural Perspectives* 15, no. 3 (2013): 141-147.

with the development of mass-schooling systems and various child-focused development projects.”¹⁵⁵ Indeed, both colonial regimes and the international organizations after WWII both recognized former colonized countries and people as “childlike,” and thus in need to be modernized, and children, as the nation’s future, would be a great tool to achieve the goal to civilization.¹⁵⁶

In the case of Taiwan, in her article “Colonial Medical Police and Postcolonial Medical Surveillance Systems in Taiwan, 1895-1950s ,” historian Hsien-Yu Chin elaborates how the Japanese and Chinese Nationalist governments both shared a similar concern about children’s health in Taiwan which perceived children as the key to a strong state/empire; historian Sue-Ching Chang zooms into the school health programs in Taiwan during the 1950s–1960s; and sociologist Pei-Chia Lan analyzed the changing images of children on newspaper throughout the second half of 20th century Taiwan.¹⁵⁷ The entangled relationship between children, nationalism, and (post)colonialism deserves more attentions from contemporary researchers in Taiwan, Asian, and even wider Global South Studies.

More recently, scholars point out that the attentive notion of children’s health and children’s rights in the 20th century U.S. history was highly racialized. The fact that it was only white children have been associated with social vulnerability that has results in the rising concern about providing curative treatment and preventive measure for the common diseases within the children population. Although the rising concern about “protecting the vulnerable

¹⁵⁵ Valentin and Meinert, .23.

¹⁵⁶ Erica Burman, “Innocents abroad: Western fantasies of childhood and the iconography of emergencies,” *Disasters*, 18 no. 3 (1994): 238–253. doi:10.1111/j.1467-7717.1994.tb00310.x

¹⁵⁷ Chin, 1998; Chang, 2010; Pei-Chia Lan, “A Sociological Analysis of Childhood: from Nation’s Main-Character to the Subject of the Consumerist-Welfare State,” *Streetcorner Sociology*, Apr 4, 2015, accessed January 18, 2023, https://twstreetcorner.org/2015/04/04/lanpeichia-2/#_edn3.

(White) children” has resulted in the rapidly postwar vaccine development and mandatory vaccination policy, it also contributed to the racial disparities in health and healthcare.

For instance, the vaccine hesitancy by minority groups, particularly African American communities is a resistance to political and medical authorities has strong historical roots in the racial disparities in the U.S. healthcare system and racial injustice in the U.S. medical research misconduct.¹⁵⁸ To apply the transnational approach, this paper reveals the racialized agenda of trachoma control behind the U.S.-led international health campaign, as of the fruitful literature of certain diseases and their regulations and controls embedded in the forms of colonial expansion.¹⁵⁹

The School Children as Imperial Targets: Two Colonial Roots in Global Health’s “School Health” Program for Trachoma Control in Postwar Taiwan

There are two colonial roots in U.S. led- global health campaign’s decision on targeting children and centering school as the major site for trachoma control in postwar Taiwan. One comes from the direct colonial lineage between Taiwan and Japan from 1895 to 1945, and the other is about the public health program on trachoma control within the U.S. started in the early-1930s. Japan’s colonial rule on postwar Taiwan has a cultural impact on establishing personal and school hygiene among Taiwanese people. In the postwar period, the American researchers and officers attempted to expand their former public health programs from domestic to foreign

¹⁵⁸ Amelia M. Jamison, Sandra Crouse Quinn, and Vicki S. Freimuth, ““You don’t trust a government vaccine”: Narratives of institutional trust and influenza vaccination among African American and white adults,” *Social Science & Medicine* 221 (2019): 87-94. Conis, 2015; Guenter B. Risse, *Plague, Fear, and Politics in San Francisco’s Chinatown* (Baltimore, MD: Johns Hopkins University Press, 2012).

¹⁵⁹ White, 2023; Anderson, 2006; Rogaski, 2014; Bashford, 2004.

societies. In the early 1950s, Taiwan thus became a perfect fit to launch this trachoma control program which targeted school children and operated on school sites.

During the Japanese colonial period, trachoma was referred to as a “school disease” because it was most common among schoolchildren in Taiwan. Although the Japanese colonial regime had already identified trachoma as a prevalent and crucial infectious disease in Taiwan, trachoma was not yet under control until the arrival of postwar U.S. technical assistance and international health interventions in Taiwanese society.¹⁶⁰ As Wakana Ikeda and Hung-Chieh Chen have both identified in their masters theses, the progress made by the Japanese government, instead of investing colony-wide in water infrastructure or accessible and affordable medical treatment, was much more significant in the area of health education, such as the introduction of knowledge about personal and school hygiene to 1920s Taiwanese society, especially among schoolchildren.¹⁶¹

Converging with the already well-accepted personal and school hygiene habits, a range of new school health implementations started by the time a national school health committee (學校衛生委員會) was created in the October of 1951. The postwar school health was funded by non-governmental and often foreign agencies, authorized by the Department of Education (省教育廳) and the Health Administration (衛生處) on the level of national government. The services and measures ranged from equipping a student health center, clean water, sink, sewer, and

¹⁶⁰ Lin-keng Wang, “The Discuss of Trachoma Prevention in Taiwan in Japanese Ruled Period,” *Gua Shan Shih Hua* 4 (2011): 61-103, and her Master thesis in 2011.

¹⁶¹ Wakana Ikeda, “Trachoma investigation and prevention under Japanese rule. A case study of school sanitation,” Master thesis, National Taiwan Normal University, 2014; Hung-Chieh Chen, “A Study on the Prevention of Schoolchildren Trachoma in Taiwan under Japanese Colonial Rule - School Physical Examination System, Sanitary Water and Affordability of Medical Resources as Analysis Fields,” Master thesis, National Central University, 2015.

bathroom infrastructure in each public elementary school, conducting physical exams and the follow-up treatment including trachoma.¹⁶²

Historian Sue-Ching Chang, points out that colonial health education in Taiwan actually contributed to postwar trachoma control in schools through effective hygiene and health practices. Many frontline Taiwanese school health instructors despised and distinguished themselves from the recent Chinese migrant teachers from the mainland at that time through the standard of their good hygiene habits.¹⁶³ While the Japanese government seemed to fail to immediately lower the trachoma prevalence in colonial Taiwan, historians have recognized that the colonial efforts in launching eye exams and eye health education and hygiene practices in schools during the 1920s and 1930s had a subtly long-term effect on trachoma control in postwar Taiwan.¹⁶⁴

Both historians and biomedical researchers working on the history of trachoma in the U.S. have agreed upon that, the Indian boarding schools were specially targeted during the trachoma surveys because their conditions inseparable from institutional life are so favorable to the public health researchers.¹⁶⁵ A series of trachoma survey conducted on Native American children could even be traced way back to 1910s.¹⁶⁶ According to a PHS Doctor Joseph W. Schereschewsky on *JAMA* on September 27, 1913, the Indian boarding schools were associated with both the prevalence of trachoma and civilization-- the PHS engaged with controlling

¹⁶² Yen-Chiou Fann, *yi lan xian yi liao wei sheng shi (Yilan County's History of Medicine and Public Health) (Yilan: Institute of Yilan County History, 1997)*, 659.

¹⁶³ Chang, 2010, 103 and 116.

¹⁶⁴ Lin-keng Wang, 2011; Chang, 2010, 125-129.

¹⁶⁵ Howard Markel, "'The Eyes Have It': Trachoma, the Perception of Disease, the United States Public Health Service, and the American Jewish Immigration Experience, 1897-1924," *Bulletin of the History of Medicine* 74, no. 3 (2000): 525-60; Shannen K. Allen and Richard D. Semba, "The trachoma 'menace' in the United States, 1897-1960," *Survey of ophthalmology* 47, no. 5 (2002): 500-509.

¹⁶⁶ Allen and Semba, 2002.

trachoma among Native American children, just as similar as the federal government as “the chief agency in raising the Indian’s plane of civilization and fitting him for citizenship.”¹⁶⁷

The systematic trachoma research in the U.S. had been established in boarding schools on the Apache Indian Reservation at Fort Apache, Arizona, since the early 1930s.¹⁶⁸ According to Dr. Thygeson who worked for multiple trachoma studies at boarding schools, “the good environment of the boarding-school was so overwhelming as to obscure possible differences between the drug and placebo groups that might have been noticeable in another environment more suitable for trachomatous activity.”¹⁶⁹

As the trachoma treatment program and research on Native American children in boarding schools had contributed to the early establishment of Francis I. Proctor Foundation (Proctor Foundation) for research in ophthalmology, the study of trachoma virus isolation from Apache children also influenced on the formation of the WHO’s International Reference Centre for Trachoma (Centre). On September 1, 1965, the WHO’s International Reference Centre for Trachoma began its operations in the laboratories of Proctor Foundation at UCSF.

¹⁶⁷ J. W. Schereschewsky, “Trachoma among the Indians,” *AMA*, 1913, 61 (1): 1113-1116, 1114.

¹⁶⁸ Phillips Thygeson and Chandler R. Dawson, “Trachoma and follicular conjunctivitis in children,” *Archives of Ophthalmology* 75, no. 1 (1966): 3-12, 10

¹⁶⁹ Phillips Thygeson, *External Eye Disease and the Proctor Foundation*, 1988; An oral historical interview Conducted by Sally Smith Hughes on 1987; Ophthalmology Oral History Series, A Link With Our Past, Regional Oral History Office, University of California, Berkeley in cooperation with The Foundation of the American Academy of Ophthalmology, 226.

Children as Experimental Subjects: School Eye Exams, Treatment, Quantification, and Health Education before 1957

In postwar Taiwan, trachoma control programs were funded and encouraged by both the WHO and UNICEF, as they were part of their expansive international health agenda for many “developing” countries.¹⁷⁰ In the late 1950s, WHO estimated there were 500 million people, one sixth of the world’s total population, mostly living in geographical areas labelled “underdeveloped” or “developing” who were afflicted with trachoma.¹⁷¹ Rather than simply managing trachoma between Japan and Taiwan on the colonial scale, the scope of the postwar trachoma control program in Taiwan was beyond the purview of the nation state. Taiwan was one of the experimental sites for the WHO and UNICEF trachoma control programs.¹⁷²

The first trachoma survey in Taiwan since the end of WWII justified global health agencies’ hypothesis that Taiwan was a trachoma-endemic island. As part of a collaboration with WHO, the Nationalist Chinese government and the National Taiwan University College of Medicine began in September of 1952, sent three dispatches to six public schools in Taipei for examination. Out of the total 7,113 students examined, 50.94 percent were found to be infected with trachoma, while 75.59 percent were found to have pink eye (see Table 3.1).¹⁷³ The students enrolled were in two age groups: as three of the schools consisted of elementary students aged 6-

¹⁷⁰ WHO and UNICEF Trachoma mass campaign, community campaign, and the fellowship to Middle East (health services) and the US (training), see “Estimated Government Contribution for TA Programme (1956-1961)” and “WHO regular program and budget (1966)” in WHO Technical Assistance Program (11-11-09-08-003); Chen-Wuin Chen, “the WHO fellowship, 1955-1958 (11-11-09-08-001)”, Ministry of Foreign Affairs Archives, Institute of Modern History, Academia Sinica.

¹⁷¹ Grayston, et al., 1964.

¹⁷² Before Taiwan became one of the selected research sites in 1954, the earliest area was located in Morocco and run by the French government and UNICEF since 1952.

¹⁷³ Tse-Chiu Hsu, “sha yan fang zhi (Trachoma Control)” in *sha yan fang zhi jiao cai* (Trachoma Control Teaching Material), Taiwan Health Administration ed. (Taipei: Wun-Ruei’ s Stationery Publishing, 1955), 21.

15, while the other three schools were teacher colleges with students aged 15-20. Eventually, students with trachoma recovered at 89.3 percent, while students with pink eye recovered at 95 percent. As part of the second phase of this experimental program, the WHO offered free ointment treatment to all students who were infected with trachoma and pink eye.

Table 3.1: A statistic table from the trachoma control trial began in 1952.

校 別	檢查人數	砂眼患者	%	結膜炎患者	%	合計	%
北師附小	1,700	682	40.1	548	32.2	1,230	72.3
女師附小	2,422	1,310	54.1	707	29.2	2,017	83.3
烏來國校	232	171	73.7	33	14.2	204	87.9
臺北師範	857	459	53.6	194	22.6	653	76.2
臺北女師	898	527	58.7	132	14.7	659	73.4
師範學院	1,004	475	47.3	140	13.9	615	61.2
總 計	7,113 人	3,624 人	50.94	1,754 人	24.65	5,378 人	75.59

This 1952 survey and trial in six schools of Taiwan was later honorarily referred by the Government Information Office (行政院新聞局) in the *Almanac of the Republic of China* (中華民國年鑑) in 1955, as a major public health initiative since the Nationalist Chinese government relocated to Taiwan.¹⁷⁴ To argue for Taiwan's suitability as a site for a global trachoma campaign, global health experts and Chinese Nationalist bureaucrats relied on an extrapolation of trachoma prevalence rates from the six schools included in the 1952 epidemiological study to the island's entire student population. After the success of the first small-scale trial during 1952, later in March of 1954, the Nationalist government, WHO, and UNICEF together launched an island-

¹⁷⁴ Government Information Office, *Zhong hua min guo nian jian* (The Almanac of the Republic of China) (Taipei: the Government Information Office, Republic of China, 1955), 252.

wide trachoma control programs which, targeting 1.2 million students in elementary and middle schools for over a decade, ranging from county and city-level programs to regional and national ones.¹⁷⁵ According to Dr. Tse-Chiu Hsu (許子秋, 1920–1988), the director of Taiwan Health Administration (THA, 台灣省衛生處) from 1962–1970,¹⁷⁶

“We need a target audience for our trachoma control, and the target audience should be the group of patients with the highest infection rate.....According to the experts, 80 percent of trachoma transmission occurs from children to children in elementary schools. They were more likely to be highly contagious because the close contact of school life. While this kind of collective life becomes an advantage for us to provide treatment, so our trachoma control program should focus on students.”¹⁷⁷

Schools required K-12 student participation. By December of 1954, a detailed instruction for middle school/health station partnerships was launched by the Department of Education. This trachoma control program was followed by a series of public health and school programs, and it also led to the establishment of the Taiwan Trachoma Control Committee (砂眼防治委員會) and the Taiwan Trachoma Control Center (砂眼防治中心) established under the THA.¹⁷⁸

¹⁷⁵ “Waging the War on Trachoma.” *New York Times* (1923-Current file); Sep 12, 1954; ProQuest Historical Newspapers: The New York Times pg. SM66.

¹⁷⁶ Tse-Chiu Hsu (許子秋), 1920-1988. Hsu received his M.D. degree from Kyoto Imperial University in 1943 and then came back Taiwan working on several public health affairs including trachoma. Hsu was assigned for the first director of the Taipei Public Health Teaching Demonstration Center (台北公共衛生教學示範中心), and he became the THA director during 1962-1970. By 1970, WHO recruited Hsu to its West Pacific office, particularly for family planning, maternal and child health missions, see Jing-jing Lin, *Lin, Jing-jing. zhuang zhi yu jian chi: xu zi qiu yu tai wan gong gong wei sheng (Ambition and Commitment: Tse-Chiu Hsu and Public Health in Taiwan)* (Taipei: John Tong Foundation, 1999).

¹⁷⁷ Hsu, 1955, 25.

¹⁷⁸ For instance, the school doctors and nurses in middle schools were required to receive the WHO-UNICEF trachoma control training which was actually provided by the Taiwan Trachoma Control Center. Taiwan Health Administration, Staff Quota of Taiwan Health Administration, A375000000A/0043/012.1/17/1/005 / (Taipei: Taiwan Health Administration, Taiwan Province, Sep 15, 1944); Taiwan Health Administration, “Appendix:

According to the Proposal for Trachoma Control in Taiwan Province (台灣省砂眼防治實施計劃),

“Our goal is to provide students in Taiwan with information about trachoma and health, including the mechanisms of trachoma transmission and preventive measures. Health education will enable students to expand their knowledge to influence their families and other members of society.”¹⁷⁹

Thus, school children were indeed the focus of the local authority's trachoma control agenda in Taiwan. However, this decision was more based more on the school being a convenient site and expected students' compliance, than school children perceived vulnerability to trachoma.

The Taiwan Trachoma Control Committee and Taiwan Trachoma Control Center were also designed to manage foreign fund distribution and to provide guidance and administrative orders to the different executive branches¹⁸⁰ In general, both the members and the staff of the Taiwan Trachoma Control Center and Committee were assigned by Tsun-Huei Yen (顏春輝), the THA director at that time. The Taiwan Trachoma Control Center was responsible for training local trachoma control teams, including one doctor and one public health nurse as a team, who were working at the front line community health stations.

Trachoma Control Program of Taiwan,” in *sha yan fang zhi jiao cai* (Trachoma Control Teaching Material), Taiwan Health Administration ed. (Taipei: Wun-Ruei’ s Stationery Publishing, 1955), 28.

¹⁷⁹ Taiwan Health Administration, 27.

¹⁸⁰ Taiwan Health Administration, Staff Quota of Taiwan Health Administration [衛生處員額編制], A375000000A/0043/012.1/17/1/005 / (Taipei: Taiwan Health Administration, Taiwan Province, Sep 15, 1944) Taiwan Health Administration, 1955, .28.

During the early stages of this process, the Chinese Nationalist State acted like a broker negotiating between global funding providers and the trachoma control exercises in the local schools. Financially, before 1958, the Chinese Nationalist government completely relied on WHO and UNICEF, including funding for professional training and free medication covered by the campaigns. Within 18 months of the beginning of the first program, the WHO and UNICEF had provided \$50 million U.S. dollars to provide free treatment with tetracycline compounds for infected children.¹⁸¹

The ultimate goal was the standardization of diagnosis and treatment of school children in Taiwan. According to the THA's statement on training trachoma professionals in every city and county, "it's important to standardize the diagnosis and treatment, to synthesize the re-examination and documentation, to implement every tasks."¹⁸² By the end of 1955, the Taiwan Trachoma Control Center planned to complete a one-week training session for 356 trainees from both local schools and health stations (see Table 3.2):¹⁸³

¹⁸¹ Taiwan Provincial Consultative Council, Council Record on Jun 27, 1955. Taipei: Taiwan Provincial Consultative Council Archive Records, 002-02-03OA-02-6-2-0-0007; George E. Shambaugh, "Medical and Sanitary Data on Taiwan," *Journal of Formosan Medical Association* 59 (1960): 775-827, 780.

¹⁸² Yen-Shen Kim, "jing pei de xiao zhang he lao shi men (Dear School Principals and Teachers)," in *sha yan fang zhi jiao cai (Trachoma Control Teaching Material)*, Taiwan Health Administration ed. (Taipei: Wun-Ruei's Stationery Publishing, 1955), 1.

¹⁸³ Taiwan Health Administration, 32-33; Kim, 1.

Table 3.2: The proposed one-week training sessions for trachoma control staff

A. For Doctors	
Day 1 Morning (3 hrs)	The diagnosis and differentiation between trachoma and pink eye
Day 1 Afternoon (3 hrs)	How to document diagnosis and treatment guidance
Day 2- Day 5 (3 hrs)	Field work guidance
Day 6 Morning (3 hrs)	Lecture on the trachoma control plan and conduct
Day 6 Afternoon (3 hrs)	Statistic and report guidance
B. For Nurses	
Day 1 Morning (3 hrs)	Diagnosis and urine testing
Day 1 Afternoon (3 hrs)	How to document testing results
Day 2- Day 5 (3 hrs)	Field work guidance
Day 6 Morning (3 hrs)	Lecture on the trachoma control plan and conduct
Day 6 Afternoon (3 hrs)	Statistic and report guidance

The newly trained school doctors and nurses collaborated with their local health stations for medication supplies and the required forms of documentation and assessment. The school authority, usually the homeroom teachers, needed to submit their documentation and evaluation to their partnered health station on the 16th of every month, and then the health stations organized school data and reported it to the THA.¹⁸⁴

In contrast to the homeroom teachers working at their school sites, the health trainers from the Taiwan Trachoma Control Center worked in a highly mobile way, because they needed to provide trainings at schools across the island, including parts that were difficult to access. According to Dr. Jhen-Wu Chen (陳振武, 1923-2014) a prestigious ophthalmologist working for

¹⁸⁴ Department of Education, Taiwan Province. Policy No. 62987. Taipei: Department of Education, Taiwan Province, Dec 29, 1944.

the Taiwan Trachoma Control Center, he drove a Jeep sponsored by the U.S. in order to reach the more remote areas.¹⁸⁵ Along with the geographical obstacles in promoting the international health agenda, the Taiwan Trachoma Control Center also competed with the fact that citizens preferred traditional eye remedies that might consequently trigger secondary infections. One such remedy was an unauthorized practice called “si-yen-jin” (洗眼睛), these Taiwanese folk medicine practitioners claimed that by using silvery needles to irritate the eyelids, the dirt and pollutants would simply come out and the eyes would then be healthy and clean.¹⁸⁶

From data located in the trachoma report (1954-1955), the training process among cities and counties demonstrates the ethnic and rural-urban disparity in postwar healthcare services, as the last three counties (S, T, and U) to receive trachoma professional training among the islands were the offshore island and the mountain areas where the majority of the indigenous population were located (see Table 3.3).¹⁸⁷

Table 3.3: Training activities in trachoma report (1954-55), from Health Statistics, 1955

(二一) 本省砂眼防治工作 (1) 民國四十三年九月十六日至四十四年六月十五日 Trachoma Report For Fy-1955 (From 16 Sept. 1954 to June 15, 1955) 1 訓練情形 Training Activities						
縣 市 鄉 County & Municipal	預 定 目 標 Target as scheduled	完 成 No. of items finished			參加訓練之學校校長數 No. of school Principals attended training course	
		計 Total	衛生所 Health Station	學校 School		
總 計 Grand total	257	246	215	71	1,088	
基隆市	10	10	10	0	42	
新竹市	10	10	10	0	37	
臺中市	10	10	10	0	46	
嘉義市	10	10	10	0	39	
台南市	10	10	10	0	23	
高雄市	10	10	10	0	47	
屏東縣	10	10	10	0	77	
花蓮縣	10	10	10	0	83	
台東縣	10	10	10	0	1,088	
澎湖縣	10	10	10	0	16	

¹⁸⁵ After WWII, Jhen-Wu Chen came back from Japan and kept receiving education in ophthalmology under Dr. Yen-Fei Yang's guidance at the National Taiwan University. In 1957, Dr. Chen went south establishing the first ophthalmology department at Kaohsiung Medical College. Meanwhile, he had been serving at the Taiwan Trachoma Control Center providing training and health education for the communities across Taiwan. See Sho-Mei Lin, *Chong qi linghun zhi chuang: chenchenwu yiliao fengxian zhilu* (Reopen the Window of the Soul: The Medical Path of Dr. Jhen-Wu Chen) (New Taipei City: Vista Publishing, 2014).

¹⁸⁶ Ibid.

¹⁸⁷ Taiwan Health Administration, "Training Activities Report," in *wei shengtong jiyaoan (Health Statistics)* (Taipei: Taiwan Health Administration, 1955), 76.

Government agencies considered health education to be “the most fundamental tool for controlling trachoma.”¹⁸⁸ In February 1955, a health education program for school teachers was co-designed by the Department of Education and the Taiwan Health Administration. Drafted by several Taiwanese ophthalmologists from the Taiwan Trachoma Control Center, it was distributed by health stations and the local governmental sector of education, and delivered by schoolteachers in classrooms or morning assemblies.¹⁸⁹ The Ministry of Education inaugurated the health education program on trachoma with one standardized teaching material in Mandarin and different protocols for all public kindergartens, elementary, middle, and high schools. A total of 28,798 pamphlets were delivered to every classroom in all cities and counties by 1955.¹⁹⁰ College is also listed on one column on the trachoma control monthly report form (see Table 3.4).¹⁹¹

¹⁸⁸ Kim, 1.

¹⁸⁹ Besides Jhen-Wu Chen we mentioned before (see Lin, 2014), a few key members such as Rong-Mao Chang (張榮茂), 1923-1978. Dr. Chang graduated from Taihoku Imperial University in 1945 and then joined the department of ophthalmology at National Taiwan University till 1977 when he was diagnosed colorectal cancer. He passed away a year after his cancer diagnosis. See Hao-Chi Chang, “zhangrongmao jiaoshou jinian yanjiang ganyan (Memorial Lecture on Professor Rong-Mao Chang,” *Jing-Fu Bulletin* 25, no. 9 (2008):19; Jhen Kun Shih (施振坤, 1922-present) was a lecturer at the department of ophthalmology at National Taiwan University. After receiving a doctoral degree by studying trachoma, Dr. Shih has started an eye clinic at *Daqiaotou* (臺北大橋頭) in old town Taipei which has been very well-known within Taiwanese society. See Zih-Jhe Wang, “bainianlai lukang chusheng de jingfuren (Jing-Fu Folks from Lu-Kang Area in the 20th century),” *Jing-Fu Bulletin* 33, no. 11(2016): 24. Tse-Chiu Hsu (許子秋), 1920-1988. Hsu received his M.D. degree from Kyoto Imperial University in 1943 and then came back Taiwan working on several public health affairs including trachoma. Hsu was assigned for the first director of the Taipei Public Health Teaching Demonstration Center (台北公共衛生教學示範中心), and he became the THA director during 1962-1970. By 1970, WHO recruited Hsu to its West Pacific office, particularly for family planning, maternal and child health missions, see Jing-jing Lin, Zhuangzhi yu jianchi: xuziqiu yu taiwan gonggong weisheng (*Ambition and Commitment: Tse-Chiu Hsu and Public Health in Taiwan*) (Taipei: John Tong Foundation, 1999).

¹⁹⁰ Taiwan Province, “Quansheng gexian shiju geji xuexiao peifa shayan fangzhijiaocai shuliang fenpei biao (Quantity Allocation of Trachoma Educational Materials for All Levels of Schools in Each County/City of the Province).” *Taiwan Province Gazette*, Spring 24, 1955.

¹⁹¹ The trachoma monthly report form is attached in the teaching material released by THA. See Taiwan Trachoma Control Center, *shayan fangzhi jiaocai (Trachoma Control Teaching Material)*, Taiwan Health Administration ed., (Taipei: Wun-Ruei’s Stationery Publishing, 1955).

Table 3.4: Trachoma Control Monthly Report Form, 1955

The form is titled "砂眼防治月報表" (Trachoma Control Monthly Report Form) and includes the following sections:

- Header:** 月份 (Month), 縣市區 (County/City), 衛生所 (Health Center), 防治隊醫師 (Prevention Team Doctor), 護士 (Nurse), 填表者 (Form Filler).
- Table Structure:**
 - Section 1 (Left):** 總檢査 (General Inspection) with columns for 學生總數 (Total Students), 受檢人數 (Number Inspected), 男女 (Gender), 砂眼 (Trachoma), 眼翳 (Pterygia), 眼痛 (Eye Pain), 眼癢 (Eye Itch), 眼紅 (Eye Redness), 眼腫 (Eye Swelling), 眼淚 (Eye Tears), 眼屎 (Eye Discharge), 眼痛 (Eye Pain), 眼癢 (Eye Itch), 眼紅 (Eye Redness), 眼腫 (Eye Swelling), 眼淚 (Eye Tears), 眼屎 (Eye Discharge).
 - Section 2 (Middle):** 第 次 復 査 (No. X Re-inspection) with columns for 學生總數 (Total Students), 受檢人數 (Number Inspected), 男女 (Gender), 砂眼 (Trachoma), 眼翳 (Pterygia), 眼痛 (Eye Pain), 眼癢 (Eye Itch), 眼紅 (Eye Redness), 眼腫 (Eye Swelling), 眼淚 (Eye Tears), 眼屎 (Eye Discharge).
 - Section 3 (Right):** 第 次 復 査 (No. X Re-inspection) with columns for 砂眼 (Trachoma), 眼翳 (Pterygia), 眼痛 (Eye Pain), 眼癢 (Eye Itch), 眼紅 (Eye Redness), 眼腫 (Eye Swelling), 眼淚 (Eye Tears), 眼屎 (Eye Discharge), 判定 (Judgment), 需要 (Need), 治療 (Treatment), 人數 (Number of People).
- Bottom Section:** 校名 (School Name), 學校種類 (School Type), 總計 (Total) with columns for 人數 (Number of People) and 百分比 (Percentage).

Opening with a “Dear Teachers” chapter, this pamphlet translated the international health authorized knowledge of trachoma into Mandarin. Written by members of the Taiwan Trachoma Control Committee, the chapters included the WHO-UNICEF version of the definition of trachoma, as well as information about the danger, transmission, treatment, and prevention.¹⁹² According to Department of Education administrators, teachers in every grade had to give a weekly fifteen-minute lecture on trachoma based on these teaching materials. They recommended that for middle schools, the lecture should be part of the morning assembly schedule and for elementary schools, the fifteen minutes should be withdrawn from the total thirty-minute course on health.¹⁹³

This health education program also attempted to standardize trachoma treatment within the schools. As Dr. Jen-Kun Shih (施振坤) has elaborated upon in the teaching materials meant for teachers, school nurses, and finally to students. He stated that every member of the school community had their responsibilities and official instructions to follow. Below the middle school

¹⁹² Taiwan Health Administration (ed.), 1955.

¹⁹³ Taiwan Province, Taiwan Province Order, Education and Health (44), No. 9007, Feb 2, 1955. *Taiwan Province Gazette*, Spring 1955, no. 24.

level, the ointment should be applied twice a week and preserved by the homeroom teachers, who would be assisted by school nurses and health mentors. For facilities above the middle school level, students should handle the treatment by themselves, but a “health patrol” should be set up in every class to file treatment records.¹⁹⁴

Government officials suggested that trachoma treatments and exams at school should be continued even during the summer and winter breaks, and could only operate in the schools.¹⁹⁵ The Nationalist government was concerned that the students wouldn’t be able to regularly apply treatments during the breaks, and the state requested that the schools preserve the medications



Figure 3-2: The Cover of Trachoma Control Teaching Material, 1955

properly. In order to maintain the WHO-UNICEF experimental program, the authority asked the students to keep coming into the schools for medication and diagnosis, and for those who could not participate during the breaks, a special guideline for calculating their treatment sessions was launched.

¹⁹⁴ Jen-Kun Shih, “Trachoma Treatments,” in *shayan fangzhi jiaocai (Trachoma Control Teaching Material)*, Taiwan Health Administration (ed), (Taipei: Wun-Ruei’s Stationery Publishing, 1955), 12.

¹⁹⁵ Department of Education, Taiwan Province. Taiwan Province Order, Education and Supervise (44), No. 179, Jan 18, 1955. *Taiwan Province Gazette*, Spring 1955, no. 24, 162.

While the time and labor consuming strategies delineated above demonstrate the government's public health concern about trachoma control in schools, it also was politically concerned. The Chinese Nationalist government cared a lot about its reputation in the international community, since the funding and resources for public health reconstruction in Taiwan mostly relied on the U.S. and international health organizations. In 1955, the Department of Education officially reacted to several incidents about the trachoma ointment for schoolchildren being stolen by announcing:

“It is the responsibility of the school authority to keep track of the supplies and make sure that every student receives the full course of treatment, uninterruptedly. Otherwise, it would impede the progress of the WHO-UNICEF trachoma control program, and most importantly, it would damage our nation's reputation in the international society.”¹⁹⁶

The Chinese Nationalist government's diplomatic concerns in the case of trachoma control, really speaks to, as articulated by Singaporean historian Wayne Soon, the larger concern and ambition of the Chinese Diaspora to bring in foreign financial and professional assistance to sustain public health reform and establish new initiatives in postwar Taiwan.¹⁹⁷ A few months after this experimental program launched in Taiwan, several congressmen asked the THA during the meetings if this program could expand to the wider population, either for the entire population of Taiwan or for the specific coastal population who were at a higher risk in terms of suffering from eye diseases.¹⁹⁸ But the THA officers honestly replied that it was less possible,

¹⁹⁶ Department of Education, Taiwan Province, Taiwan Province Order, Education and Supervise (44), No. 1081, Mar 28, 1955. *Taiwan Province Gazette*, Summer 1955, no. 2.

¹⁹⁷ Soon, 2020.

¹⁹⁸ Taiwan Provincial Consultative Council, Council Record No.1, on Jan 5, 1955. Taipei: Taiwan Provincial Consultative Council Archive Records, 002-02-02OA-02-6-2-0-00088; Taiwan Provincial Consultative Council, Council Record No.1, on Jun 27, 1955. Taipei: Taiwan Provincial Consultative Council Archive Records, 002-02-03OA-02-6-2-0-0007.

since “all the plans, medication, and funding for professional training all come from UNICEF.”¹⁹⁹ The THA director Yen explained that

“except for the schoolchildren, there are almost half of the population in Taiwan, about three to four million trachoma patients in our society need to be cured, the estimate cost would be too huge to afford [by the Chinese Nationalist government itself].”²⁰⁰

In those politicians’ views, since THA director Yen was good at seeking U.S. aid, they believed that he could request for a higher budget in order to expand the existing trachoma program from the 1.2 million schoolchildren to the entire population of Taiwan if the central government couldn’t afford it. Yen did not make any promises, but he responded at a meeting of congress that future and further foreign aid in trachoma control depended on the results of the current three-year school program.

An expanded trachoma control program for adults and an epidemiological survey followed. In 1957, WHO extended the trachoma control program to the adult population as a means to provide medical treatment for the general public and to address a continuous international health concern about preventing schoolchildren from being reinfected by their family members.^{201 202} Thus, according to “The Instruction of Trachoma Control on the General Public in Taiwan, Phase 1” (台灣省一般人民砂眼防治工作第一期實施辦法), only the family

¹⁹⁹ Taiwan Provincial Consultative Council, Council Record No.1, on Jun 28, 1954. Taipei: Taiwan Provincial Consultative Council Archive Records, 002-02-01OA-02-6-2-0-00099.

²⁰⁰ Ibid.

²⁰¹ Taiwan Province, Taiwan Province Order, the Department of Health (45), No. 248, January 10, 1956 Taiwan Province Gazette, Spring 1956, no. 12.

²⁰² Taiwan Provincial Consultative Council, Council Record No.1, on Mar 15, 1957. Taipei: Taiwan Provincial Consultative Council Archive Records, 002-02-06OA-09-3-8-00-00528; Taiwan Provincial Consultative Council, “Council Record No.1, on Nov 21, 1960. Taipei: Taiwan Provincial Consultative Council Archive Records, 003-02-02OA-04-1-2-04-00088.

members of 11- to 12-year-old schoolchildren were eligible to join, and their conditions needed to be continuously documented and reported. The program operated on a community level, since the village/town/district was designed to be the work unit of the program. Beyond merely providing medical treatment, there were several requirements for this expanded program: one treatment session was five months long, there were a maximum 3000 adult subjects, and the adult participants needed to be examined four times during the session.²⁰³

Indeed, it was those children-focused school health programs that provided the groundwork for the possibility of island-wide trachoma control in late 1950s. Although the school children were placed at the center in those early school programs on trachoma control, most of the instructions were designed and given to other adult members around them such as teachers, principals, school doctors and nurses, as well as health station staff. During the 1950s, school children were chosen for the trachoma control program for to several reasons. First, the pilot studies demonstrated a high prevalence and recovery rates among children. Besides, schools were an excellent site where public health programs could be managed as there was authoritarian rule and compliant teachers and students. In addition, the authorities expected schoolchildren to pass on their knowledge about trachoma control that they gained from school health programs to their families so that the adults could benefit as well.

²⁰³ Ibid.

Children as Active and Responsive Subjects: The Youth Mobilization in Trachoma Control for Families, Nation, and Global Reputation

By the time the adult patients enrolled in this expanded trachoma control campaign, the role of schoolchildren in the campaign had changed. By 1957, Children were no longer just the treatment recipient, but rather they were also becoming the treatment provider. Other school actors such as the staff, principals, and teachers were recruited into this expanded trachoma control program. School administrators were responsible for creating the patient list and collaborating with the local health stations in every district, while teachers had to communicate with parents and collect the reports from the students' families. And in addition to these parts of the work, the students were anticipated to be the primary treatment providers for trachoma patients in their families by learning through their own experiences and with assistance from those staffing health stations.

Except for the eye exams that continued to be conducted by the physicians and nurses who had completed the WHO trachoma training at the health stations, healthcare work - such as applying eye drops, performing observations on a daily basis, and documenting and reporting the eye condition to the school teachers - was officially assigned to those adult patients' schoolchildren to accomplish at home. According to "The Instruction of Trachoma Control on the General Public in Taiwan, Phase 1," the trachoma treatment would be guided by the doctors from the local health station but actually conducted by the equipped students—not medical students, but rather the students who lived in the same household as the patient.²⁰⁴

²⁰⁴ Taiwan Provincial Consultative Council, Mar 15, 1957; *The Temporal Taiwan Provincial Consultative Gazette*, vol 9, no.15.

11 and 12-year-old schoolchildren, as the patient's family members, would be trained by the doctor at the health station on how to provide treatment of trachoma at home, as well as given relevant information such as the medication usage and its preservation. Rather than developing a standardized training course for the students, the Chinese Nationalist government only required the doctors at the health stations to demonstrate the treatment procedure to the students assigned to be the primary healthcare givers of the expanded trachoma control program in Taiwan.

Table 3.5: Trachoma control program family member treatment record.

By reading the information shown on the trachoma control program family member treatment record card (砂眼防治計畫家屬治療卡) (Table 3.5) preserved by a local health station of Tainan county in southern Taiwan, we are able to reconstruct how the program actually operated between the family and health authority.²⁰⁵ Firstly, the health station would conduct the ointment distribution based on how many family members on the list required trachoma treatment. The person (usually the family members who were still in school) in charge

²⁰⁵ Po-Shun Chen, Ji jiyi zhenjian: shayan fangzhi jihua jiashu zhiliaoka (Memories Collection: Trachoma Control Program Family Member Treatment Record), Taiwan Cultural Memory Bank Database, accessed October 25, 2021, https://memorybank.culture.tw/event/zh-tw/event_109/1080

of medical treatment for the family member had to sign for it, since the treatment took place within the domestic area. Even the follow-up examinations conducted by the local health station staff members were still household-based. During these house visits, staff members would document their evaluation of the trachoma status as well as medication storage and the usage.

By mobilizing schoolchildren in Taiwan, international health organizations were able to test the efficiency of the medical treatment and disease-focused programs outside North America and Western Europe. The schoolchildren became the actual caregivers within the international health program, providing medical treatment and recording the conditions properly and regularly in the domestic space. Again, it shows how children and childhood were looked at differently in postwar Taiwan as compared to those needed to be protected fragile white skins growing up in U.S. nuclear families at the same time.

The schoolchildren contributed with unpaid care labor for their roles in this public health campaign. Even though without statistical data, the high labor participation among Taiwan's children population can be demonstrated through the oral historical stories told by the Taiwanese now in their sixties, seventies, or eighties (especially growing up from rural Taiwan), how it was common for young children to work outside schools (or even drop off from schools, usually the daughters) in different ways to support the families. In Taiwan, the work and employment of the minors under age of 15 labor were not legally regulated until 1984 when the Labor Standards

Act (勞動基準法) was first established to proactively ensure the rights of health, education, and development for the youth.²⁰⁶

Robert L. Heilbroner, a UNICEF officer, has documented his observations while checking on a UNICEF-aided program in Taiwan during Fall 1958. Although “expecting to find a harassed teacher and squalling children,” the UNICEF observer was eventually very impressed by the children’s participation in the trachoma school campaign:

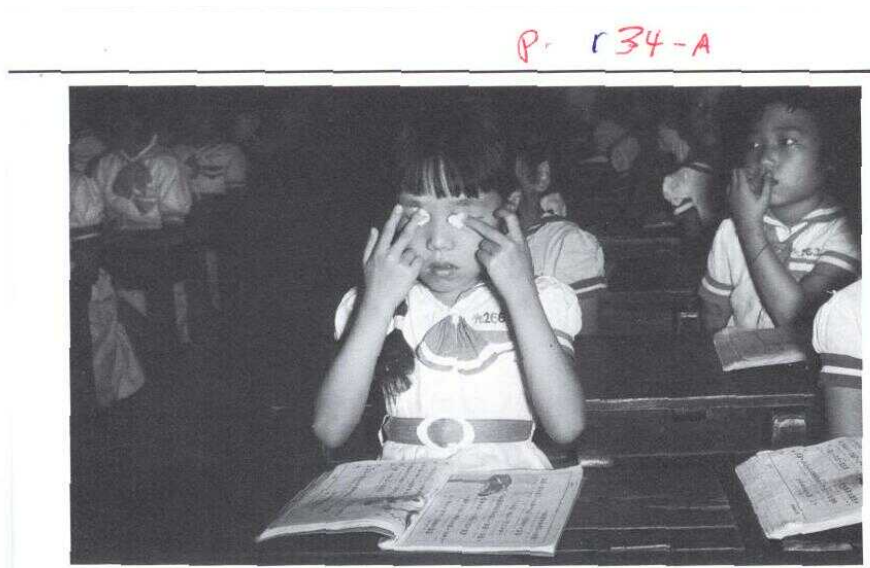


Figure 3-3: A schoolgirl rubbing her eyelids with medication in Taiwan, 1950s. UNICEF Records, Archives & History Development site.

“The teacher gave the signal for the drill to his fifty children. At once all the children put on their armbands, each with a number. One child produced a list of children to be treated. Another manned the wash basin, for hands must be clean. Another issued numbered tubes of antibiotic ointment and saw to it that each child got his own. Then the queue formed, and the teacher drew down the lower lid of each eye and applied the ointment. Still another youngest handed out two small squares of tissue paper for each

²⁰⁶ The legislative history of Labor Standards Act in Taiwan, see Laws & Regulations Database of The Republic of China (Taiwan), accessed January 10, 2023, <https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=N0030001>

child to lay on his eyelids while he gently rubbed them to spread the ointment. Then the tubes were collected, and the children returned to their seats. Time elapsed: five minutes.”²⁰⁷

Meanwhile, schoolchildren were assigned to fund, financially support this national trachoma control program.²⁰⁸ Continuing to receive eye exams and trachoma treatments with the new adult counterpart enrolled since 1962, the elementary school children were now required to do even more by paying the “trachoma control fee” at the beginning of every academic year in order to support the cost of the national trachoma program. From 1962 to 1969, Schoolchildren except the students in remote areas were required to contribute \$1.5 New Taiwan dollars every academic year.

The Nationalist government of China's approach to compensate for the decreasing foreign fund for trachoma control was not a singular incident. The Nationalist China launched national movement in financial allocation from citizens as a response to the decrease in foreign technical and military aid since the 1960s. Using a developmental sociology lens, Korean scholar Joon Kim analyzes how both the states in Taiwan and South Korea launched a national movement that depended on household savings to support industrial transformation policies within the country.²⁰⁹ In the public health aspect, it was already an existing fee for parasitic disease control charged by the Chinese Nationalist government, but now the purpose had been transferred to use on cotton and rubbing alcohol in the trachoma control program. The educational branch of

²⁰⁷ Robert L. Heilbroner, *Mankind's Children: the Story of UNICEF*, No. 279 (New York: Public Affairs Committee, 1959), 10.

²⁰⁸ Based on the price level of the early-1960s Taiwan, An adult bus ticket costs \$1 New Taiwan dollars, and a miso-soup costs \$2 New Taiwan dollars.

²⁰⁹ Joon Kim, “Cold War-made Developmental States: Credit Mobilization and Allocation in Taiwan and South Korea, 1961-1978” (Master’s Thesis, National Taiwan University, 2021).

county and city governments was responsible for collecting fees from students and depositing the funds into a specific bank account at the Taiwan Bank (台灣銀行).²¹⁰

In order to meet the terms of the Chinese Nationalist government's contract with WHO, the Chinese Nationalists asked schoolchildren to pay for this recently defeated nation whose economy in the early-1960s was still in crisis. Additionally, this was a symbolic deposit on the health of the nation when the Chinese Nationalist was projecting its future vision onto the children in Taiwan.²¹¹ The total estimated amount of deposits collected from all schoolchildren over eight years would be approximately \$1,926,283.33 in U.S. dollars (\$19,250,000 New Taiwan dollars), which would exceed the WHO's budget of \$10,501,000.²¹² The schoolchildren in the 1960s as a social collective were assigned to further participate financially in this expanded island-wide trachoma control program, but not in an embodied nor a demonstrative way.

Along with collecting funding from schoolchildren, by 1963, the local governments were encouraged to self-allocate funds for this national trachoma control program because “it is international health collaboration.”²¹³ According to the central government's announcement, by 1963,

“the effectiveness of trachoma control program does not only link to the population health of the people in Taiwan Province, but also affect our nation's name in the international society. In order to effectively promote this program, both

²¹⁰ Taiwan Province, Taiwan Province Order: Education and Health, Health and Administration no. 1894, launched in 1962.

²¹¹ A sociological analysis of the changing meanings of childhood in Taiwan since postwar please see Lan, 2015.

²¹² Taiwan Province, 1962.

²¹³ Taiwan Province, Taiwan Province Order Financial (3) Health and Trachoma (1) no. 1499, launched in 1963.

town/district/village offices as well as local counties and cities should operate the plan and further arrange the annual budget (\$ 0.1 New Taiwan dollar per person) for the trachoma control program.”²¹⁴

Just as the central government had planned, the budget would be used on half of the cotton and rubbing alcohol fees, 20 percent of the health education printing and the advisors’ traveling expenditures, and 10 percent of the delivery costs. Similar to what was identified in the former WHO-UNICEF trachoma programs during 1950s, the Chinese Nationalist government in the 1960s still recognized that building a good reputation in international relations was their primary concern when promoting international health affairs in Taiwan.

Quantifying the Child Subject: The Standardization of Local Data for International Health

In order to transform the local condition into numbers and to present the statistics to the international community, the quantitative method played a crucial role in Taiwan’s trachoma control program. The messiness of health issues become numbered, comparable, and empirical accurate during the quantification process. An abundant literature has identified that the use of quantitative method is crucial for nation states and colonial empire building.²¹⁵ Since the early 17th century, the governmental and academic institutions in Western Europe have gradually established specific agencies and field of study for vital statistics—by the time as an instrument

²¹⁴ Ibid.

²¹⁵ John Eyler, *Sir Arthur Newsholme and State Medicine, 1885–1935* (Cambridge: Cambridge University Press, 1997); Andrea A. Rusnock, *Vital accounts: quantifying health and population in eighteenth-century England and France* (Cambridge: Cambridge University Press, 2002); Ted Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton: Princeton University Press, 1995); Ian Hacking, *The Taming of Chance* (Cambridge: Cambridge University Press, 1990); Alain Desrosières, *The Politics of Large Numbers: A History of Statistical Reasoning* (Cambridge, MA: Harvard University Press, 1998), and Ian Hacking, “Kinds of People: Moving Targets,” *Proceedings of the British Academy* 151 (2007): 285–318. For a more technology-oriented book see Geoffrey C. Bowker and Susan Leigh Star, *Sorting Things Out: Classification and its Consequences* (Cambridge, MA: MIT Press, 1999).

of measuring births, lives, and deaths. By accumulating individual's living conditions driven by the government's concern about nation building, the notion of population and the aspiration of population health have both emerged.²¹⁶ Since the late 17th century, the calculation of infectious disease such as plague and smallpox provided tools for public hygiene within the nation-state governance.²¹⁷

Along with the method of statistics, quantitative thinking and practices also directed the establishment of sanitary programs and discipline of epidemiology over the 19th century which Foucault has described as “the science of the state”.²¹⁸ As Ian Hacking has written, “the collection of statistics has created, at the least, a great bureaucratic machinery. It may think of itself as providing only information, but it is itself part of the technology of power in a modern state.”²¹⁹ For instance, the 1940 U.S. population census has addressed the application of birth statistics in designing infant and maternal health programs for protecting children's health.²²⁰

The application of quantitative methods facilitated imperial expansions. Ted Porter's work illustrated how quantitative method created a shared format to reduce the burden of communications between differences and often at great distance. It makes comparison possible, and it transforms the remote uncivilized into governable numbers for the postwar U.S.-led international health as well. As the existing scholarship has illustrated, through quantitative

²¹⁶ Richard H. Shryock, “The History of Quantification in Medical Science,” *Isis* 52, no. 2 (1961): 215–37. <http://www.jstor.org/stable/228680>. Alison Bashford, *Imperial Hygiene: A Critical History of Colonialism, Nationalism and Public Health* (Hampshire: Palgrave Macmillan, 2004).

²¹⁷ *Ibid.*

²¹⁸ Michel Foucault, ‘Governmentality,’ in *The Foucault Effect*, Graham Burchell, Colin Gordon, and Peter Miller eds., chapter 4 (Chicago: University of Chicago Press, 1991), 96.

²¹⁹ Ian Hacking, ‘How Should We Do the History of Statistics?’ in *The Foucault Effect*, Graham Burchell, Colin Gordon, and Peter Miller eds., chapter 4 (Chicago: University of Chicago Press, 1991), 181-196 (Chicago: University of Chicago Press), 181.

²²⁰ Robert D. Grove and Forrest Edward Linder, *Sixteenth Census of the United States: 1940: Vital Statistics Rates in the United States, 1900-1940*. (United States: U.S. Government Printing Office, 1943).

surveying colonial authorities collected information about new territories, which defines and facilitate the governance of colonial subjects, through disciplines of knowledge, and created hierarchical categories to maintain colonial legitimacy.²²¹

Many Taiwan specialists have claimed that Taiwan might be one of the colonies that has been surveyed the most and produced the sophisticate quantitative knowledge.²²² Demographers Mau-Shan Shi et al. have traced the systematic statistical reports conducted by Japanese colonial officials from 1897 to 1943. By counting the economic, trade, health, legal, and educational activities, the *Governor Statistics* (總督府統計書) represents the sophisticate colonial governance in Taiwan.²²³

Regarding the dimension of health, the colonial health reports have been classified by historian Ya-wen Ku into four categories. As compared to the first two ‘standardized vital statistics’ and ‘standardized patient records’ were on an island-wide scale and annually updated, the ‘non-standardized disease surveys’ often came along with colonial government’s public health policy, and the rest of the ‘small-scale statistics’ were documented by individual health officers, physicians and researchers.²²⁴ In Chia-san Shen’s historical investigation of bacteriological laboratory stations in colonial Taiwan, she demonstrates that the technical

²²¹ Cohn Bernard, *Colonialism and Its Forms of Knowledge: The British in India* (Princeton, Princeton University Press, 1996); Loveman Mara, “The Modern State and the Primitive Accumulation of Symbolic Power,” *American Journal of Sociology* 110 (2005): 1651-83. Shryock, 215-37; Bashford, 2004.

²²² George Barclay, *Colonial Development and Population in Taiwan* (Princeton: Princeton University Press, 1954), p. x; Ya-wen Ku, “The Health Investigation and Disease Statistics in Colonial Taiwan: Using GIS in Historical Research of Disease,” *Baisha Journal of GeoHistory* 14 (2012): 203-253, 204.

²²³ Shi Mau-Shan, Chien-Heng Chen, Yen-Hao Huang, and Min-Shing Huang, “A Conversion of Population Statistics of Taiwan at the sub-provincial Layer: 1897-1943,” *Journal of Population Studies* 40 (2010): 157-202.

²²⁴ Ku, 2012.

infrastructure construction planned in a stationary size was essential for conducting bacteria diagnosis that making disease survey possible.²²⁵

The cases of patients, health professional trainees, and facilities were calculated and reported annually since 1954, when the first experimental program started. Before the WHO's epidemiological research in Taiwan was launched in September 1960, the Chinese Nationalist government had begun to prepare an island-wide trachoma survey in 1956. The local civil servants in town/district/village offices, health stations, and police stations were all deployed in the survey data collection. This echoes to Mark Harrison's statement that on the local scenes of colonies, the medical and sanitary interventions were often modified and led to a self-policing conduct that colonized subjects recruited in the information gathering process and transformed into quantified subjects.²²⁶

As the Provincial Governor of Taiwan, Yen Chia-kan (嚴家淦, 1905-1993), announced: "The officers at town/district/village offices, health stations, and police stations should all engage in conducting the task on surveying trachoma prevalence in Taiwan." The eye exams for the community should be conducted by qualified doctors at health stations who had already received the WHO trachoma training. People who did not show up for these eye exams would receive a warning from civic officers and police because "the whole survey process has been delayed due to the individual no-shows."²²⁷ Those who did not participate in the survey might be punished, but the official announcement did not standardize the penalty that would be incurred.

²²⁵ Chia-sen Shen, "Preliminary History of 'Bacteriological Laboratories' in Taiwan during the Japanese Ruling Period," *Bulletin of Taiwan Historical Research*, NTNU 7 (2014): 5-46.

²²⁶ Mark Harrison, *Public Health in British India* (Cambridge: Cambridge University Press, 1994), 85.

²²⁷ Taiwan Provincial Health Administration, *Wei sheng tong ji yao lan* (1955 Annual Report by Tawian Provincial Health Administration) (Taipei: Taiwan Provincial Health Administration, 1956), 123.

Postwar Taiwan's extensive local networks and social mobilization, which have been developed for authoritarian purposes, definitely influenced the WHO epidemiological survey. In ironic ways, the trachoma control program succeeded partly because of the Chinese Nationalists' multidimensional surveillance of workplaces, neighborhoods, and schools.²²⁸ According to historian Kun-hung Hou, during the period of martial law in Taiwan, there were about 300 million secret informants deployed in every institution, organization, and social group. In addition to the 50-60 million official agents, such as military, police, and military instructors in the schools, others were civilian informants with special tasks located everywhere from cities to villages, from schools to factories, from temples to churches.²²⁹

In both 1960–61 and 1968–69, two WHO medical officers and one health statistician stationed in Taiwan conducted an island-wide survey to evaluate the trachoma control program. This survey project was also influenced by the results produced from the Taiwan Census in 1958 and 1959, such as the total population estimate and the basis of the sampling fraction.²³⁰ Before it began, the Taiwan Provincial Government made an announcement about assigning officers at health stations and local governments from specifically 125 towns/districts/villages in a total 22

²²⁸ To both groups of historians concerned with the political history and the history of global health in Taiwan or East Asia, this project bridges the two. This work might extend the existing historical literature on medicine and healthcare in Taiwan, which mainly focuses on the positive U.S. impacts during the postwar period. See Wen-Hua Ku, "How to Write a History of Public Health under U.S. Aid in Taiwan: A Critical Review," *Taiwan Historical Research* 17, no. 1, (2010): 175-210.

²²⁹ Hou, p.148. According to Taiwanese researcher Bo-Chow Lan, Nationalist China implemented a national intelligence agency divided into several branches that were monitoring and competing with each other, see Bo-Chow Lan, *Ereba ji wuling niandai baisekongbu minzhongshi* (二二八暨五〇年代白色恐怖民眾史) (Kaohsiung: The Government of Kaohsiung County, 1997), 23-24; Bo-Chow Lan, *Baise kongbu (White Terror)* (Taipei: YANG-CHIH BOOK CO., LTD., 1993), 41-42.

²³⁰ Fakhry A. Assaad, T. K. Sundaresan, C. Y. Yang, and L. J. Yeh, "Clinical evaluation of the Taiwan trachoma control programme," *Bulletin of the World Health Organization* vol 45, no. 4 (1971): 491 - 509. <https://apps.who.int/iris/handle/10665/262701> Fakhry Assaad was a medical officer at the Division of Communicable Diseases, World Health Organization. T. K. Sundaresan was a statistician specialized at the field of health statistical methodology. He worked for division of Health Statistics, World Health Organization helping with WHO training course for epidemiologists in sampling techniques. See World Health Organization, *Educational Handbook for Health Personnel* (Switzerland: WHO, 1998), pp. 340-358.

counties of Taiwan, selected by the project to provide relevant assistance for the WHO trachoma epidemiological study in Taiwan.²³¹ Eventually, the WHO team selected the *lin* (鄰), the smallest administrative unit of about 125 persons, as the sampling unit. This random sampling survey covered 36,507 persons in the 9 domains of the original 351 sample *lins*.²³²

The process of conducting the epidemiological survey also involved the work of drawing up ethnic boundaries. They drew upon the bigger picture of ethnic demography and population density and ultimately decided to focus only on the group labeled “Taiwanese.” According to the method section of the survey report, the WHO researchers applied the *three-ethnic-group* framework to their research design, which refers to the aboriginals, Taiwanese, and Mainland Chinese. Since the Mainland Chinese and aboriginals were only seen and predominant in specific 12 and 10 *lins*, this survey decided to focus only on Taiwanese, because this group consisted of 90 percent of the island’s population.

When the WHO chose the three-ethnic group framework instead of the Chinese label on Taiwanese, they unintentionally contradicted the goal of the Chinese Nationalists to unite the people on this pre-Japanese-ruled island. Among the relevant WHO articles and reports, the terms Taiwanese and Taiwanese Chinese were sometimes used to refer to the 17th-19th century Chinese immigrants and their descendants in Taiwan. WHO trachoma survey reveals the ethnic ambiguity of people born and raised in postwar Taiwan. Moreover, it sheds light on overlooked facts such as intragroup ethnic differences, social conflicts, and Chinese Nationalist suppression of Taiwanese identity formation.

²³¹ Taiwan Province, Taiwan Province Order, Health and Trachoma, No. 2052, Oct 24, 1960. *Taiwan Province Gazette*, Winter 160, no. 27, p.352.

²³² According to the Taiwan Census 1959, the total population estimate is 10,431,341.

International health agencies were able to evaluate the results of previous experimental programs and the feasibility of the next 8-year trachoma control program through the research design and data collection. From 1954 to 1961, the trachoma control programs achieved significant progress. As the survey showed, the decrease in the prevalence of trachoma in Taiwan was from about 40 percent to 18 percent. Within the experimental research design created by the WHO team, the 351 sampling lines of Taiwan were grouped by the active trachoma prevalence rate in the 1960-1961 survey and three implementation cycles.²³³

On September 10, 1962, the Taiwan Province Government officially instituted the next trachoma control program, nationwide with all populations included, using the WHO survey project to map geographic variations in trachoma severity.²³⁴ In addition, previous fieldwork on trachoma treatment and documentation established a multi-branched local network. The local health station became the primary administrator, coordinating with foreign advisers and school administrators to conduct the national trachoma prevention program.

As compared to the treatment for children that followed the academic calendar of the school year (from September to August), the operation on the general public, as the government suggested, “had to coincide with the busy farming and fishing seasons.”²³⁵ According to the program schedule launched by the Taiwan Province Government, for those highly endemic areas in the Category B, the trachoma treatment was given without diagnosis. The residents of

²³³ Fakhry A. Assaad, T. K. Sundaresan, C. Y. Yang, and L. J. Yeh, “Clinical evaluation of the Taiwan trachoma control programme,” *Bulletin of the World Health Organization* 45, no. 4 (1971): 491-509.

²³⁴ Fong Ming Guo and Pei Ping Hsieh (eds.), *Zhonghuaminguo shishi jiyao gangwen beilan di qiceshang: minguo 51 nian zhi minguo 55 nian (Historical Summary and Tsunabun, 1962-1966, vol.7-1)* (Taipei: Academia Historia, 2002), 96.

²³⁵ Taiwan Province, Taiwan Province Order, *Taiwansheng shayan changqikuo dazhiliaojihua gongzuo yaodian (The Key Elements of Trachoma Control Long Term Plan in Taiwan Province)*, 1962.

Category B live in Pin-Hu, Chia-Yi, and Yun-Lin counties, which are considered the most severe trachoma areas in Taiwan due to their coastal climate.²³⁶

Aside from areas in Category B, all other cities and counties in Category A required residents to test positive before receiving treatment. In order to launch a paired experimental observation each year, this program combined one county/city from each Category A and one from Category B into three annual treatment cycles from 1962-1966. During 1966-1968, 36 towns/districts/villages were selected from Categories A&B to form a control group.

Conclusion

Throughout tracing changing role of Taiwanese children in the local implementation of the global health trachoma program, this chapter demonstrates that global health is always situated; it could never reach the standardization of knowledge and treatment. As one of multi-sites of the WHO-UNICEF campaign against trachoma, the postwar case of Taiwan was closely tied to the quantification of school children into epidemiological numbers, and the use of children as reliable and unpaid healthcare workers, which justified as a must-act for the new nation in crisis.

Although this legacy received less attention as other campaigns happened simultaneously such as malaria and tuberculosis control, it functioned as a crucial indicator in the late 1960s for both the American and Chinese bureaucrats and researchers to demonstrate the positive impact of U.S. Aid in Taiwan.²³⁷ The government's official account fails to mention that Taiwanese

²³⁶ Jhen-Wu Chen, "What is Trachoma," in *Shayan fangzhi jiaocai (Trachoma Control Teaching Material)*, Taiwan Health Administration (ed) (Taipei: Wun-Ruei's Stationery Publishing, 1955), 4.

²³⁷ Taiwan Health Administration. *Taiwan's Health, 1964-1965*. Taichung: Dept. of Health, Taiwan Provincial Govt., Republic of China, 1963.

children were also required to contribute financially to alleviate the state's financial burdens, which served as a social experiment in mobilizing Taiwanese children for the Nationalist government's vision of eventually reclaiming Mainland China. Therefore, I am asking: how do we better situate children as the subject that navigated the history of global public health and if it is possible?

The photos of children are sometimes displayed in publications and archives as a kind of historical record of those glorified stories. They might be sitting in the classroom, posing for photographers, or receiving an eye exam or treatment at the scene. Whatever the situation, the legacy does not seem to center on these children, despite the fact that trachoma control in postwar Taiwan was primarily executed by them. The emphasis on children went beyond the aim of enhancing their well-being. Instead, children were viewed as instrumental in nation-building endeavors, which were closely intertwined with international health campaigns led by external multilateral agencies. Taiwan's children transitioned from being treatment receivers to care givers, health trainees, and financial donors in this almost two-decade long international health campaign against trachoma. The desires among Chinese Nationalists to make this campaign also work for their own political ends is clear.

Last, the trachoma program in postwar Taiwan seemed too succeeded and all too well. Of course, the foreign medical aid and professional supports were absolutely crucial, yet if this is the perfect model for trachoma, why it is still a crucial determinant for causing blindness in more than forty countries today?

Why the children in Taiwan just followed the order? This was deeply tied to the *Triple Imperial Complex*: the foreign assistance, the domestic authoritarian rule, and the personal and school hygiene cultivated by the Taiwanese society as a Japanese colonial heritage.

Global health was not just about technical issues, it has its own visions and various ideologies behind the campaign. In the next chapter, I will further examine the racialized and capitalist ideologies that enabled the global health campaign against trachoma. This will be accomplished by studying the experiences of Taiwanese children who participated in the global trachoma vaccine research and their interconnections with Apache children in the Native American Nation located in Arizona.

CHAPTER THREE

Children as Trial Subject: Global Trachoma Vaccine Network and Global Health Injustice

On the 52nd Annual Meeting of the Formosan Medical Association in 1959, when NAMRU-2 Commander Robert Phillips talked about the recent development on the trachoma vaccine, he gave credit to the teamwork between the American and the ‘Chinese’ medical scientists; but he elaborated more specifically on why Taiwan was crucial for international trachoma research:

“Taiwan is probably the best place in the world to study trachoma. There are a huge number of medical professionals and huge amounts of patients. Regarding the numbers of trachoma children population, they are so willing to work with researchers and be the human subjects for the trachoma vaccine trials”²³⁸

During the 1950s, NAMRU-2 studies would not have been successful without the cooperation of Taiwanese children. Although the effectiveness of the antibiotic treatment had been proven, the postwar international health campaign against trachoma still craved for a vaccine to be born. According to the WHO trachoma committee and researchers from a U.S. military medical branch in Asia-- the U.S. Naval Medical Research Unit 2 (NAMRU-2), the mass antibiotic campaigns exhibited success only “in the more developed countries.”²³⁹

²³⁸ United Daily, “yi xue xin you (New Medical Finding),” page 3. November 23, 1959.

²³⁹ J. Thomas. Grayston, Robert. L. Woolridge, San-Pin Wang, C.H. Yen, C. Y. Yang, K. H. Cheng and I. H. Chang, “Field studies of protection from infection by experimental trachoma virus vaccine in preschool-aged children on Taiwan,” *Proceedings of the Society for Experimental Biology and Medicine. Society for Experimental Biology and Medicine* 112 (1963): 589–595, 518.

NAMRU-2 had hoped for vaccine intervention since 1958. Rather than arriving in a well-arranged temporal order, these programs sometimes overlapped.

I had many questions while unpacking the production of postwar global health research on trachoma while noticing a global connection between two groups of children: one group living on the island of Taiwan; and the second group living on the Apache reservation in Arizona. As medical anthropologist Vincanne Adams has articulated, the idea of global in critical global health is a significant insight that “gets us beyond problems of geography.”²⁴⁰ Moreover, global health creates but also sometimes effaces health “in places both near and far as equally global phenomena.”²⁴¹ And this insight raises a key historical puzzle for this chapter: When we talk about the internationalization of science in the postwar period, what kinds of scientific internationalization received attention, and what types of research collaborations were remembered and inscribed in the historical narrative? This chapter starts with exploring NAMRU-2’s trachoma vaccine studies on Taiwanese children, and then scales up to another part of this global health research: the trachoma investigation of the UCSF researchers in the Native American Nation, the Apache reservation in Arizona.

There was a forgotten transnational connection between Taiwanese children and Native American children in the postwar history of *global* health research on trachoma virus and vaccine. I argue that a logic of postcoloniality with a racialized and capitalist agenda existed in the local histories of each overlooked community’s engagement in this eventually failed scientific ambition in creating a medical solution for trachoma elimination.

²⁴⁰ Adams, 2016, 191.

²⁴¹ Ibid.

Only through a transnational analysis can this chapter reveal the “various layers of silences,” as Michel-Rolph Trouillot calls them, to destabilize the known histories of trachoma control and describe the colonial and racial capitalist power structure of this scientific production. Historian Gabriela Soto Laveaga has proposed “connecting microhistories” to not only expand our understanding of an interconnected globe but also dislocate the history of science.²⁴² I aim to build on her approach by connecting the microhistories of marginalized scientific subjects. Soto Laveaga’s approach resonates with the goal of this chapter, since it deals with writing about marginalized subjects and understanding how they participate in science.²⁴³ Specifically, how marginalized communities were unintentionally connected, through the logic of coloniality, postcoloniality and a racial capitalist agenda, into the global health campaign against trachoma during the postwar period.

NAMRU-2’s Vaccine Field Trials on Taiwanese Children since 1959

Between 1959 and 1960, the first trachoma vaccine field trial was launched on the preschool-aged children in the rural area (three schools in Lung-ching and two schools in Ta-an) of Taichung, Taiwan.²⁴⁴ Meanwhile, the animal trials had still been going on. The vaccine trials aimed to prevent trachoma via children immunization. In this study, the experimental subjects were chosen from the siblings of the first-grade school children who were identified as active trachoma patients in the earlier trachoma survey conducted by the Chinese Nationalist government and WHO. The children tested were divided into two groups: the vaccine

²⁴² Gabriela Soto Laveaga, “Largo dislocare: connecting microhistories to remap and recenter histories of science,” *History and Technology* 34, no. 1 (2018): 21-30.

²⁴³ Anderson, 2014.

²⁴⁴ J. Thomas Grayston, Robert L. Woolridge, San-Pin Wang, C. H. Yen, C. Y. Yang, K. H. Cheng, and I. H. Chang, 1963, 589–595; Robert L. Woolridge, J. Thomas Grayston, I.H.Chang, C.Y.Yang, K.H.Cheng, “Long-Term Follow-Up of the Initial (1959–1960) Trachoma Vaccine Field Trial on Taiwan,” *American Journal of Ophthalmology* 63, no. 5, part 2 (1967):1650-1653.

inoculation group versus the placebo group. Relying on the existing trachoma control programs at schools, the vaccine study was able to continue to document changes in children infections for two and half years.

Some other trachoma vaccine trials on children and sight impaired youth (not due to trachoma) with similar research designs emerged in other parts of Taiwan.²⁴⁵ They were mostly led by NAMRU-2 scientists, and some projects were collaborations with other institutes such as NTU or National Defense Medical Center. However, after a series of the trachoma treatment experiments and vaccine trials of the school-children in Taiwan, it was shown that the current vaccine alone could not effectively prevent children from getting trachoma.²⁴⁶

The NAMRU-2 research team described their research subjects as “Chinese children,” probably reflecting a political label attached to Cold War geopolitics. In an official pamphlet published by the US government introducing NAMRU-2’s trachoma research, trachoma was described as

“anything but exclusively Asian although the dubious honor of suffering from the highest incidence of infection might be claimed by either the Far East or the Near East, is one of the major infectious diseases which have strongly resisted modern scientific techniques.”²⁴⁷

²⁴⁵ J. Thomas Grayston, San-Pin Wang, Yen-Fei Yang, Robert L. Woolridge, “The Effect of Trachoma Virus Vaccine on the Course of Experimental Trachoma Infection in Blind Human Volunteers,” *J Exp Med* 115, no. 5 (1962): 1009–1022.

²⁴⁶ Robert L. Woolridge, J. Thomas Grayston, I. H. Chang, C. Y. Yang, K. H. Cheng, 1967; Robert L. Woolridge, K. H. Cheng, I.H. Chang, C.Y. Yang, T.C. Hsu, J.T. Grayston, 1967.

²⁴⁷ United States Information Service, *NAMRU-2 Outpost against Disease; U.S. Navy Medical Research in the Pacific* (Taipei: United States Information Service, 1961), 15.

In another article of *Free China Review* published in 1966, the NAMRU-2's work on trachoma vaccine was directly described as a group of men against "Asian diseases."²⁴⁸ In this context, we found the racial category of Asian for NAMRU-2 researchers seemed to be represented as culturally opposite to modernity and science.

According to a paper on JAMA by Grayston et al., the NAMRU-2 researchers first collected and stored the trachoma virus from 150 frozen eye specimens which developed from 116 trachoma-infected human—mostly the first-grade school children.²⁴⁹ In addition to exclusively using the "TW-29"—the isolated trachoma virus strain collected from Taiwan's children patient, this NAMRU-2 and NIH research obtained the samples of trachoma sera outside the border of Taiwan which included places associated with the US military: Cairo (NAMRU-3 location), Maryland (Walter Reed Army Institute of Research) and the PHS of the U.S. as well.²⁵⁰

Dr. San-Pin Wang and Dr. J. Thomas Grayston conducted the isolation process of total 29 trachoma viruses collected within and outside Taiwan.²⁵¹ For the virus specimens collected in the schools of Taiwan, Wang and Grayston described them in detail and relabeled them with the locations where they were from on the county level. There were four specimens collected from Taipei, one from Miaoli, one from Hsinchu, one from Kaohsiang, and the greatest number was

²⁴⁸ F.C. Lu, "Men against Asian Diseases," *Free China Review* 19 (1969):14-17.

²⁴⁹ Grayston et al., 1960, 89-98.

²⁵⁰ Robert L. Woolridge, E. B. Jackson, J. Thomas Grayston, "Serological Relationship of Trachoma, Psittacosis and Lymphogranuloma Venereum Viruses," *Experimental Biology and Medicine* vol. 104, no. 2 (1960): 298-301. The virus specimens from Egypt were obtained in cooperation with Dr. Abdel- E'attah Al. Mohamed at Memorial Inst. for Ophthalmic Research, Giza. Cairo. Psittacosis antisera from 3 cases diagnosed during 1959 were obtained from Dr. Helen L. Casey, Communicable Disease Center, U. S.

²⁵¹ San-Pin Wang and J. Thomas Grayston, "Classification of Trachoma Virus Strains by Protection of Mice from Toxic Death," *J. Immunol.* 90, no. 6 (1963):849-856. Three strains were isolated at NAMRU-2 from specimens collected in and near New Delhi, India, in March 1960.

fifteen virus specimens from Taichung.²⁵² Rather than informing their intention of scientific improvement to the school children and their family, these virus isolation studies came along with the national trachoma school health survey and education project launched by the WHO and the Chinese Nationalist authoritarian regime.

In Figure 4.1, the photo captured the scene when Dr. George Lee, a Medical Research Fellow from Taiwan and a public health nurse Martha Chen collected blood from an infant's toe during the NAMRU-2 trachoma vaccine research. According to NAMRU-2 description of this photo, "the child's grandmother looks on with apparent apprehension, although there is little if any pain connected with such collections."²⁵³



Figure 4.1: NAMRU-2 trachoma vaccine trial, unknown date (Box 38, Tillman Durdin Papers (MSS 0095), UC San Diego Archive).

²⁵² However, the PEB method was not applied to this study.

²⁵³ Tillman Durdin Papers (MSS 0095), UC San Diego Archive.

The Transnational Connections emerging from Global Health Research on Trachoma between the Marginalized Powerlessness

What happened to the Taiwanese and Native American children was not just a metaphorical parallel of imperialist encounter of two different local societies; instead, they are remarkably connected to each other throughout the international shipping of trachoma samples and intellectual exchange of research findings. For example, the common attention to scientific internationalization in the postwar period would describe the individual researchers and the institutional actors involved in the process.

Researchers at NAMRU-2 compared 29 trachoma virus strains isolated from six cities and counties in Taiwan with 9 other strains from other countries, including India, Gambia, Saudi Arabia, and the United States. Their aim was to examine the similarities and differences among trachoma vaccine strains isolated from Taiwan and other regions worldwide since the late 1950s.²⁵⁴ During this four-year research (1958–1961), the NAMRU-2 researchers tested the total 38 virus strains obtained from Taiwan and outside Taiwan in mice for cross-protection against intravenous toxicity.²⁵⁵

Two among the four virus strains collected from the U.S. came from Apache children in Arizona. This study found that all 29 Taiwan trachoma strains fell into one of two cross-protecting groups, designated as the TW-1 and TW-3 groups. While the total number of different groups of TRIC virus strains in the mouse toxicity prevention test were unknown, they found

²⁵⁴ San-Pin Wang and J. Thomas Grayston, "Classification of trachoma virus strains by protection of mice from toxic death," *The Journal of Immunology* 90, no. 6 (1963): 849-856, 854.

²⁵⁵ Wang and Grayston, 1963, 855.

that the two trachoma strains from Apache native children in Arizona cross-protected with the TW-1 group.

For this study, it would be the NAMRU-2 research team, Dr. San-Pin Wang and Dr. Thomas Grayston, and how they connected with scientists in different countries. For example, they took virus strains from Dr. Phillips Thygeson (1925–2002) and Dr. Ernest Jawetz (1916–2001) at University of California Medical Center (UCSF) in the United States. The UC research team also assisted with authorizing and exporting the trachoma virus strains isolated in their own laboratory outside Taiwan. Or should the focus be on the research itself, which was supported by multiple international sources, including funds under Public Law 480, Section 104(c) and the Office of Naval Research, contract Nonr-2121(07) with the University of Chicago, and partly by Research Grant B-3144 from the Institute of Neurologic Diseases and Blindness, National Institutes of Health, Public Health Service with the University of Washington.

This layer of scientific internationalization in the postwar period was happening in both the material and epistemological aspects. The health scientists in the 1960s referred to the trachoma vaccine studies on Taiwanese and Apache children as an excellent example of their optimistic belief of the near end of trachoma in human history. In his several articles on medical history of trachoma in the 1960s, Paul Tower, an M.D. from Southern California, praised the preliminary findings by NAMRU-2 in Taiwan along with the field trials with trachoma vaccine launched by the U.S. Public Health Service among 400 Native American school children in Phoenix.²⁵⁶ The field trials subsequently encouraged him, in 1963, to publish in *Archives of*

²⁵⁶ A series of Dr. Tower's other publications from 1950s to 1960s, mostly on *Archives of Ophthalmology*, include: Paul Tower. "Books that made ophthalmological history," *Archives of Ophthalmology* 64, no. 5 (1960): 771-785; "The Position of History in Ophthalmology," *Archives of Ophthalmology* 64, no. 5 (1960): 652-653; "Albrecht von Graefe: A Survey of His Correspondence," *Archives of Ophthalmology* 71, no. 5 (1964): 619-624; medical history

Ophthalmology that, “we are nearing the end of the road in our attempt to stop the spread of trachoma, it seems opportune to trace briefly the history of that disease.”²⁵⁷

The two groups of children in Taiwan and Arizona were politically marginalized and scientifically exploited, even while ironically giving hope to biomedical researchers. Through mentioning these two field studies, the trachoma researchers were able to demonstrate the power of scientific medicine, the confidence about producing vaccines for trachoma, and the promising future towards a (physically and metaphorically) bright vision of the world.

Dr. Phillips Thygeson’s Team and their Work on Native American Children

Earlier, we mentioned two UCSF ophthalmologists contributed to the global health study on trachoma virus and vaccine led by NAMRU-2 in Taiwan. However, this collaboration went beyond being just a modern scientific partnership between laboratories. It originated from the involvement of researchers promoting eye health within the Native American community in Arizona, which has a deep connection to UCSF, the Francis I. Proctor Foundation, and WHO’s International Reference Centre for Trachoma (Centre).²⁵⁸ In 1927, Dr. Francis Proctor (1864–1936) and his wife Mrs. Elizabeth Proctor (1882–1975) retired from Boston to Santa Fe, New Mexico, where he found out the trachoma was still prevalent among Native American population. Therefore, it was their hope to prevent the blindness and control the eye infections by creating a research laboratory in the region to study the causes and treatments for trachoma.²⁵⁹

on individual doctors and scientists see Tower, Paul. “Notes on the life and work of George Bartisch,” *AMA Archives of Ophthalmology* 56, no. 1 (1956): 57-70; “George Frick: Factors Influencing Early Nineteenth Century Ophthalmology,” *AMA Archives of Ophthalmology* 60, no. 6 (1958): 989-994; and “Carl Wedl: Histopathology of the Eye in the Nineteenth Century,” *AMA Archives of Ophthalmology* 63, no. 5 (1960): 756-760.

²⁵⁷ Tower, 1963, 123.

²⁵⁸ The Proctor Foundation see its official website: <https://proctor.ucsf.edu>.

²⁵⁹ Phillips Thygeson, G. Richard O’Connor, Chandler R. Dawson, John P. Witcher, and Emmett T. Cunningham, “The Francis I. Proctor foundation: the first fifty years,” *Survey of ophthalmology* 42, no. 6 (1998): 548-556, 548.

Their deep interest in Native American eye health led to his appointment to the Bureau of Indian Affairs as consultant on trachoma, and Dr. Proctor served in this capacity to the end of his life.

Before joining UCSF, Dr. Phillips Thygeson's early work on trachoma was already funded by the Proctor couple.²⁶⁰ Their collaboration started in 1929 in which Dr. Proctor would provide the fund, Thygeson the microbiology, and another scientist William C. Finnoff at University of Colorado contributed pathology knowledge.²⁶¹ In 1934, Proctor helped Thygeson organize a trachoma research laboratory at Fort Apache, Arizona; Thygeson and the Proctor couple also went on a research trip on trachoma in Egypt in November 1930. After Francis Proctor passed away in 1936, Mrs. Elizabeth Proctor endowed the work on trachoma. Recognizing the need for sustained progress, she followed Thygeson's suggestion to establish an independent laboratory affiliated with a university. After evaluating various options, the Francis I. Proctor Foundation was established in affiliation with UCSF on September 15, 1947, ensuring dedicated focus on trachoma research and development.²⁶² Dr. Thygeson served as the second director of the Proctor Foundation from 1959 to 1970.

According to Dr. Thygeson, back in the late 1920s, it was estimated that around 50 percent of the Native American population were affected by trachoma.²⁶³ Thygeson attributed the

²⁶⁰ Dr. Thygeson served in the Department of Ophthalmology of the University of Iowa between 1933 and 1936. In 1903, Dr. Thygeson was born in St Paul, Minnesota, and moved to Palo Alto, California. He went to Sanford University for undergraduate and medical degree. He interned at Colorado General Hospital and in 1930, Dr. Thygeson received his PhD degree in ophthalmology at the University of Colorado. See Beret E. Strong, *Seeking the Light: The Lives of Phillips and Ruth Lee Thygeson, Pioneers in the Prevention of Blindness* (Jefferson: McFarland, 2014). George M. Bohigian and Robert M. Feibel, "Francis I. Proctor, MD and his wife Elizabeth C. Proctor: Their lives and legacy," *Journal of Medical Biography* 28, no. 3 (2020): 135-139.

²⁶¹ Strong, 2014, 1025.

²⁶² Thygeson et al., 1998, 549.

²⁶³ Thygeson, 1988, 50. However, the estimate number is somehow questionable, since according to the review article by Dr. Shannen K Allen and Dr. Richard D Semba, there were at least 15 trachoma surveys on Native Americans (and three were conducted in boarding schools) from 1912–1915, but the prevalence rate varied widely from 10 percent to 92 percent. See Allen and Semba, 2002, 501.

progress made in trachoma research to the federal administration's intervention in the Indian Health Service (IHS), specifically through their trachoma surveys and public health programs. The IHS was always interested in funding from the NIH (namely, the U.S. Public Health Service, PHS) so that they could have specialists provide trachoma treatment in Apache reservations in the 1930s.²⁶⁴ In more than 350 pages of transcripts from interviews conducted in 1987, Thygeson demonstrated his strong belief in modern biomedicine and used it to explain the history of trachoma programs and research on the Apache community.



Fort Apache Trachoma Research Laboratory, 1935.
l to r: Dr. Thygeson, Clarence Brown, Dr. Proctor, Estelle Peterson, a nurse stationed at Fort Apache, Dr. Polk Richards, a trachoma physician who worked for the Indian Service, and the chief nurse stationed at Fort Apache who was nicknamed "Yazzi" by the Indians. This photo was taken after Mr. Brown was voluntarily inoculated.

Figure 4.2: Picture captured from Phillips Thygeson, MD: External Eye Disease and the Proctor Foundation, 1988, 63.

Dr. Phillips Thygeson and the research team assisted the NAMRU-2 researchers in Taiwan by providing them with trachoma virus strains collected from Apache children in Arizona. While Dr. Ernest Jawetz was the head scientist who collaborated with Dr. Thygeson for this trachoma virus isolation research, Miss Lavelle Hanna, a graduate research microbiologist at

²⁶⁴ Thygeson, 1988, 54. The early-20th century trachoma control campaign in Indigenous community also see Robert A. Trennert, "Indian Sore Eyes: The Federal Campaign to Control Trachoma in the Southwest, 1910-40," *Journal of the Southwest* 32, no. 2 (1990): 121-49. The history of IHS and the US healthcare policy, see Abraham B. Bergman, David C. Grossman, Angela M. Erdrich, John G. Todd, and Ralph Forquera, "A political history of the Indian Health Service," *The Milbank Quarterly* 77, no. 4 (1999): 571-604; How the U.S. scientists used the term "reservation" to describe both the land where laboratories were located and the Native Land where they conducted field research in the postwar period, see Laura Stark, "Reservations," *Isis* 113, no. 1 (2022), 128-136.

UCSF, had already done most of the work. Indeed, Thygeson called her the “super technician” who isolated the first trachoma agent in the United States and the first inclusion conjunctivitis agent in the United States, as part of his team.²⁶⁵

The two virus strains were produced during the two visits in the San Carlos Apache Indian Reservation, October 1959 and January 1960, with improvements in collection and shipping procedures.²⁶⁶ Their cooperation with IHS and federal administration marked that they always had the permission of the chiefs in the area and the cooperation of the medicine man as well as the school principals on the reservations.²⁶⁷ Yes, here we go again, the schools. We have been examining the school as the major site for trachoma program in Taiwan since the early 1950s. But the global health program might not just be a postcolonial invention but also colonial conduct from the trachoma studies set up by White scientists in the boarding schools on Native American children. In the early 1950s, Thygeson began travelling for the WHO in developing countries, given his previous experience with Indigenous children, helping to establish treatment programs for trachoma in countries such as Tunisia, Cairo, and Taiwan.²⁶⁸

Regarding the virus strains isolated from Apache Indigenous children, their eye scrapings were collected from either researchers’ encounter in systematic surveys of Native American reservations or referred by other local specialists after they received an ophthalmological examination. In other words, the children were patients or public health survey data before their

²⁶⁵ Dr. Thygeson described Miss Hanna as a “super technician,” even though she had never received a doctoral degree. Miss Hanna at first was in department of pathology at UCSF, and then they hired her to the trachoma virus research in the department microbiology. Thygeson, 1988, 96-97.

²⁶⁶ Lavelle Hanna, Ernest Jawetz, Phillips Thygeson, and Chandler Dawson. “Trachoma viruses isolated in United States. 1. Growth in embryonated eggs.” *Proceedings of the Society for Experimental Biology and Medicine* 104, no. 1 (1960): 142-145.

²⁶⁷ Thygeson, 1988, 225.

²⁶⁸ G. Richard O’Connor, “Obituary: Phillips Thygeson, MD,” *American Journal of Ophthalmology* 134, no. 6 (2002): 938.

eye infection samples contributed to the trachoma research of University of California, San Francisco. Of the Apache children who were in early infection, two were seven years old, one was ten, and one was four.

In February 1960, this finding was also pridefully reported in *Synapse*, the UCSF student newspaper. In the article entitled “Trachoma Virus Isolated Here,” the finding on trachoma virus strains provided hope because it “lead[s] to practical vaccines and improved diagnosis.”²⁶⁹ *Synapse* also highlighted the health disparity: “trachoma is now an uncommon disease among the White population in the United States, but is an important public health problem among the Indians of the Southwest.”²⁷⁰ Most importantly, Dr. Thygeson added, “while antibiotics can cure the infection, considerable eye damage often takes place before treatment begins. Moreover, treatment facilities are scarce in many countries. A vaccine could break the chain of transmission in populations where the disease is common.”²⁷¹

Among the four American virus strains received from the University of California Medical Center (UCSF), two other strains from Northern California—one strain named “BOUR” was isolated from a White American in San Jose, another IC-CAL-3 or “Brooks” was from a 12-day-old newborn baby in San Francisco—and the other two trachoma strains, AP-2 and AP-4, were isolated from Indigenous American children from the Apache reservation in Arizona. The two virus strains isolated from California, BOUR and Brooks, were separately described attentively in papers published in authoritative scientific journals such as *Science* (1959) and *American Journal of Ophthalmology* (1962).²⁷² The article describes it as collected from “a male

²⁶⁹ “Trachoma Virus Isolated Here,” *Synapse. The UCSF student newspaper*, 4 February 1960, 1

²⁷⁰ *Ibid.*

²⁷¹ “Trachoma Virus Isolated Here,” *Synapse. The UCSF student newspaper*, 4 February 1960, 2.

²⁷² *Ibid.*, see Hanna et al. 1959 and Hanna et al. 1962.

patient from South Bay,” which was also probably associated with Thygeson’s private practicing in San Jose where he practiced general ophthalmology mostly at O’Connor Hospital but also at San Jose Hospital. In the oral history interview, Thygeson said,

Then the private practice also furnished a lot of material for study. We had a big practice, and we saw a lot of unusual cases, and many of these were important in the university work It was the private practice in San Jose that enabled us to do special work on chlamydia and trachoma and herpes and adenovirus infection and soon, all because of the support of the private practice.²⁷³

Just as the UCSF research team (Dr. Thygeson, Dr. Jawetz, and Miss Hanna) was connecting their clinical work at San Jose to the laboratory work at San Francisco, they also went to Native American communities in Arizona to “get material and do therapeutic studies.”²⁷⁴ Contrary to the detailed description published in academic journals on the trachoma virus research process isolated from the Californian patients (although the articles make no mention of whether the patients gave consent to the research or treatment providers informed them of the research), the other two trachoma virus strains isolated from the Native American children in Arizona occupied little information among the scientific publications of this UCSF research team. Fortunately, we can still collect some pieces of this puzzle from materials outside journal articles.

The patients were children only, and they were recruited for experiments. According to Thygeson, they only targeted children because they have active trachoma compared with older

²⁷³ Thygeson, 1988, 223.

²⁷⁴ Thygeson, 1988, 152.

people who usually had milder ones. As such, “it was the children who were good subjects.”²⁷⁵ Throughout the early drug tests on native children, the first two experiments with sulfanilamide were conducted on native children at Fort Apache in the late 1930s by Fred Loe and then Dr. Proctor and Dr. Thygeson before he joined UCSF. Thygeson complimented the children subjects by saying that “the Indians were wonderful patients. They were stoic, and they never complained;” “the children very seldom cried. White children would have gone crazy.”²⁷⁶

When medical historians praise how oral sulfa antibiotics revolutionized the treatment of trachoma at the end of the 1930s, they do not often give credit to the Native American school children who participated in those trials. Recalling what they had done in the 1930s after almost five decades later, Thygeson was proud of their work: “this was a fabulous victory for sulfanilamide,” he said.²⁷⁷ In 1939, *Science* published the successful results of sulfanilamide treatment and how it might lead to its adoption in foreign countries where trachoma was more severe.²⁷⁸ When PHS researchers mentioned Indigenous children in the trials, however, they complained that they were less civilized in stating that one difficulty was in getting the Native Americans to take the medicine and the lack of sanitary facilities on the reservations. For some prestigious institutions, they could not be established without enrolling Indigenous children in trachoma studies, however. In 1987, Thygeson spoke about how the early stages of the Francis I. Proctor Foundation were oriented toward the Native Americans in Arizona.²⁷⁹ They collected scrapes from Apache children so the researchers could achieve their scientific agenda and could then write “we wish to report the first isolation of “trachoma viruses” from patients in the United

²⁷⁵ Thygeson, 1988, 61.

²⁷⁶ Thygeson, 1988, 60.

²⁷⁷ Ibid.

²⁷⁸ “Trachoma Eradication.” *Science*, 90, Issue 2346; 15 Dec 1939, 10.

²⁷⁹ Thygeson, 1988, 142.

States.” The research team listed all the sources of trachoma virus strains isolated in the United States in 1960 (see Table 4.1).

Table 4-1: Sources and Characteristics of Trachoma Viruses Isolated in United States (Hanna, Thygeson, and Dawson, 1960, 143).

TRACHOMA VIRUSES FROM UNITED STATES									
TABLE I. Sources and Characteristics of “Trachoma Viruses” Isolated in U. S.									
Strain	Age, yr	Patient's description			Specimen collected	No. egg passages needed for isolation		Max egg infectivity	
		Disease	Inclusions present	Serum (C:F) titer to psittacosis antigen		Elementary bodies	Deaths	Passage level	LD ₅₀ /ml
Bour	36	Acute florid trachoma	+++	1:64	San Francisco	2	3	10	6.4*
Asgh	29	Relapse of cicatricial trachoma, 20 yr duration	++	1:4	"	1	1	7	7.4
Apache #1	7	Early active trachoma	—	1:2	San Carlos, Ariz.	4	5	7	6.7
#2	7	<i>Idem</i>	—	ND	<i>Idem</i>	2	2	ND	ND
#3	4	"	—	"	"	3	3	"	"
#4	10	"	—	"	Bylas, Ariz.	6	6	"	"

* Negative log of dilution resulting in 50% death of eggs. ND = Not done.

The trachoma treatment program and research on Native American children in boarding schools and community day schools both contributed to the early establishment of the Proctor Foundation for research in ophthalmology. And the study of trachoma virus isolation from Apache children also influenced the formation of the WHO’s International Reference Centre for Trachoma (Centre).²⁸⁰ On September 1, 1965, the Centre began operations in the laboratories of Proctor Foundation at UCSF. Indeed, Dr. Thygeson was to be the Centre’s first director when he was already a consultant for the WHO Expert Committee on Trachoma.²⁸¹ But more importantly, the studies from different regions and the international collaborative research on the

²⁸⁰ In 1927 Francis Proctor retired to Santa Fe, New Mexico. There he and Mrs. Proctor developed an interest in health problems of Native Americans among whom blinding trachoma was then widespread. His deep interest in Native American eye health led to his appointment to the Bureau of Indian Affairs as consultant on trachoma, and he served in this capacity to the end of his life, the Proctor Foundation see its official website: <https://proctor.ucsf.edu>.

²⁸¹ World Health Organization. “Expert Committee on Trachoma [meeting held in Geneva from 29 August to 4 September 1961]: third report.” Geneva: World Health Organization, 1962.

isolation of trachoma virus strains was reported and labelled as recent advances in basic research to the problems of trachoma control by the WHO Expert Committee.

The series of studies on trachoma virus, along with the WHO's experience on one reference center for influenza, led to the birth of the Centre, which emphasized "collection of materials and data, the storage and distribution of reference strains, the production of anti-sera, the exchange of information and, later, the initiation of a collaborative research programme."²⁸² Dr. Robert L. Woolridge from NAMRU-2 introduced the Centre to Southeast part of the Asia-Pacific region, his article "The World Health Organization International Reference Centre for Trachoma" in the *Medical Journal of Australia*, since NAMRU-2 was a major research facility engaging in this type of global collaboration years before the official Centre was founded. According to Woolridge, in the Centre's first year, they expected to have a few trachoma virus strains for distribution. Those strains might have been those NAMRU-2 had used in the early 1960s. However, the Centre was expected to concentrate on determining the best conditions for storage and transport of trachoma virus strains and for producing specific anti-sera.

Since trachoma was no longer prevalent in most parts of the United States, "except on certain Indian reservations in the Southwest,"²⁸³ their scientific interventions in Native lands were justified more for their greater scientific advancement instead of for prioritizing the health of local communities. Were they good patients in the sense that they followed directions? In a surprisingly similar way, Thygeson described the Native American children in the same terms as

²⁸² Robert L. Woolridge, "The World Health Organization International Reference Centre for Trachoma," *The Medical Journal of Australia* 2, no. 8 (1966): 347-348, 347. The information on WHO Reference Center please see Thygeson, 1988, 232.

²⁸³ Lavelle Hanna, Ernest Jawetz, Phillips Thygeson, and Chandler Dawson. "Trachoma viruses isolated in United States. 1. Growth in embryonated eggs," *Proceedings of the Society for Experimental Biology and Medicine* 104, no. 1 (1960): 142-145, 142.

the NAMRU-2 commander for Taiwanese children. According to Thygeson's oral history interview published in 1987, "we worked mostly with children on the trachoma work, and they were very, very good."²⁸⁴ Ironically, when Thygeson discussed "racial antagonism,"²⁸⁵ he did not think about how the researchers' White presence symbolized the power imbalance; instead, he recalled that younger Indigenous people developed racial antagonism against their involvement later.

From a transformative justice and postcolonial perspective, it couldn't be more understandable that the local resistance emerged. However, Thygeson could not understand why the younger generation could not accept them, as their elders had. In the White researcher's memory, they "had very good cooperation with the Indian medicine men."²⁸⁶ Trachoma virus and vaccine research was only one of countless examples of how public health and scientific research has been part of U.S. colonialization through unethical biomedical testing on the Native American population. As current scholars have amplified, many American Indigenous elders' decisions about healthcare are influenced by personal or collective memories of discrimination, neglect, and abuse at the hands of the U.S. healthcare system.²⁸⁷

Furthermore, from the mid-1950s to the mid-1960s, the "immortal" HeLa cell lines were also applied to trachoma virus research and animal experiments in the NAMRU-2 laboratory and its collaboration with Dr. Howard M. Jenkin in Department of Preventive Medicine at the

²⁸⁴ Thygeson, 1988, 226.

²⁸⁵ Thygeson, 1988, 225-226.

²⁸⁶ Thygeson, 1988, 225.

²⁸⁷ Lawrence J. "The Indian Health Service and the sterilization of Native American women," *Am Indian Quart.* 24 (2000): 400-419; Walls ML, Gonzalez J, Gladney T, Onello E. "Unconscious biases: racial microaggressions in American Indian health care," *J Am Board Fam Med.* (2015) 28:231-39; Gonzales KL, Harding AK, Lambert WE, Fu R, Henderson WG, "Perceived experiences of discrimination in health care: a barrier for cancer screening among American Indian women with type 2 diabetes," *Women's Health Issues* 23 (2013):e61-67.

University of Washington. The research topics included the studies of serial cultivation of trachoma agents in HeLa cells and the response to stimulation in HeLa cells by a trachoma agent.²⁸⁸ The relevant research findings were not only published within academic circles, but also were circulating among the Naval research offices.²⁸⁹

The HeLa cell lines is one of the most well-known cases for racism and science happened in the latter half of 20th century U.S. history of science and medicine. Mrs. Henrietta Lacks (1920–1951) was an African American women born in Roanoke, Virginia. In 1951, she passed away during her cancer treatment at John Hopkins Hospital. However her cancer cells were taken without informed or permission by John Hopkin’s researchers, which later became the first immortalized human cell line and one of the most important cell lines in biomedical research after her death. HeLa cell was the first human cell to survive in vitro and being successfully cloned in 1953 and widely used within research in cancer, AIDS, vaccine, and numerous scientific topics including trachoma. As one significant ethically controversial example within the postwar scientific research, for several decades, injustice and racism continuously caused harm on Mrs. Henrietta Lacks and her family, while her story and her cells had a profound impact on numerous scientific advancements ranging from cancer, HIV/AIDS, genetics, and more recently COVID-19 vaccines. Here, HeLa cell was participated in this global health collaborative research on trachoma vaccine, in which the samples were extracted from children

²⁸⁸ Jenkin, H. M. and J. O'Donnell, “Continuous passage of agents of trachoma in cell culture,” *J. Formosan M. A.* 62 (1963):35; H. M Jenkin, “The continuous passage of agents of trachoma in cell culture: I. Characteristics of TW-3 and Bour strains of trachoma cultivated in HeLa 229 cells,” *J. Infect. Dis.* 116 (1966):390; J. Thomas Grayston, San-Pin Wang, and Paul B. Johnson, “Etiologic Studies of Trachoma on Taiwan,” *Proceedings of the Society for Experimental Biology and Medicine* vol. 103, no. 3 (1960): 596-599. The earlier HeLa cell technique development see Grayston et al., 1956.

²⁸⁹ “DTIC AD0608171: TRACHOMA VIRUS RESEARCH.” The Defense Technical Information Center (DTIC) Archive, accessed November 19, 2022, https://archive.org/details/DTIC_AD0608171

in Taiwan and children from the Apache reservation in Arizona in the 1960s, and also in experimenting in monkeys' eyes.²⁹⁰

Examining this layer of trachoma vaccine development in the immediate postwar period reveals that scientific internationalization not only generated social ties among scientists and global health researchers but also created global connections among marginalized communities—Taiwanese children, Apache children, monkeys, and other experimental animals, and Mrs. Henrietta Lacks. These communities are connected in the history of global health research when thinking through the questions of research ethics, postcolonial history, and the consequence of postwar scientific optimism. I argue that it was the logic of coloniality and racial capitalism that made these marginalized communities scientifically relevant to each other, and the scientists were the connecting factor.

Postcoloniality: Making Trachoma a Racialized Global Health and Economic Crisis

In this section, I will describe how trachoma became a global public health crisis because of the colonial and racial capitalist agenda. After the trachoma virus hypothesis was rejected by the scientific community in the mid-1970s due to the advancements in DNA and RNA techniques. It was proven that trachoma is actually caused by the infection with bacterium *Chlamydia trachomatis*. As a result, the Centre continued to operate by transforming itself into a Centre for the Prevention of Blindness, and its mission shifted from vaccine invention to therapeutic and public health interventions in the endemic communities.²⁹¹

²⁹⁰ H. M. Jenkin, "The Continuous Passage of Agents of Trachoma in Cell Culture. I. Characteristics of TW*3 and Bour strains of trachoma cultivated in serial passage in HeLa 229 cells," *NAMRU-2 Summaries of Research* 1 July-31 December 1965, number: MR005.09-0011.3.

²⁹¹ The current WHO campaign recommends a package of interventions known as the "SAFE strategy": Surgery and Antibiotics for trachoma infections, Facial cleanliness and Environmental improvement in access to water and

Global health research on trachoma during the postwar period illuminates the coloniality and racial capitalist vision. Taking Taiwan as a historical case, the discourses adopted by NAMRU-2 and WHO-UNICEF campaigns focused on protecting Free China's labor power and international health's racial distinction. The attempts to control trachoma through child subjects in Taiwan had been a world making project concerned with decreases in labor power within non-industrialized areas. The mortality rate of trachoma was significantly lower than infectious diseases such as malaria and tuberculosis during the 1950s–1960s.²⁹² However, the WHO experts emphasized that trachoma would lead to visual loss, and most importantly, it was a major cause of “economic blindness”.²⁹³ When reflecting on the international work they had done on trachoma, Thygeson was being very straight forward in asserting, “well, it's economic. Trachoma is a disease of poverty and also of climate.”²⁹⁴

In the postwar period, trachoma was amplified as an economic danger associated with industrialization, labor power of youth, and the future of underdeveloped countries. The NAMRU-2 research team has described “it is a disease that is particularly important in many of the underdeveloped countries where the incidence high and where the loss of sight in young adults causes a serious economic loss, and may play a role in retarding industrialization.”²⁹⁵ In addition to the correlation found in the international health discourses, trachoma controls link to

sanitation) to reduce transmission. “WHO Alliance for the Global Elimination of Trachoma by 2020: progress report, 2019,” *WHO Weekly Epidemiological Record* 30 (2020): 95, 349–360.

²⁹² See the yearly official data collected from the Ministry of Health and Welfare, Taiwan. The annual report of Taiwan Provincial Health Administration from 1956-1963, see Taiwan Provincial Health Administration. *Wei sheng tong ji yao lan (Annual Report)*. Taipei: Taiwan Provincial Health Administration.

²⁹³ Fakhry A. Assaad and F. Maxwell-Lyons, “The application of clinical scoring systems to trachoma research,” *Am. J. Ophth.* 63, no. 5 (1967):1327-1356.

²⁹⁴ Thygeson, 1988, 230.

²⁹⁵ J. Thomas Grayston, San-Pin Wang, Yen-Fei Yang, Robert L. Woolridge, “The Effect of Trachoma Virus Vaccine on the Course of Experimental Trachoma Infection in Blind Human Volunteers,” *J Exp Med* 115 no. 5 (1962): 1009–1022, p.1012

economic development also existed in its funding structure. For instance, the funding for Taiwan's professional training in trachoma control in the mid-1950s partly came from the United States's president's fund for Asian Economic Development.²⁹⁶

The NAMRU-2 team's statement provides an interesting perspective on the economic consequences of the trachoma epidemics, claiming that it might push current economic development back to a primitive stage of the ideal type of development. The endemic or epidemic areas mirrored the progress of industrialization. In the case of trachoma and postwar international health campaigns, the notion of area was thus epidemiologically and economically constructed. The developmentalism thinking provides societies not yet in the capitalist present the opportunity of "catching up" in the postwar period. Economic development was the most significant element for American investigators to evaluate their foreign aid programs among other countries in the early postwar period.

Intellectually, American modernists idealized the American form of society — industrialized, capitalist, and democratic — as the "normal" form of modernity, which the U.S. should help other recently decolonized countries achieve in contrast to the fascist form of anti-modern or the pathological form of modernity pursued by Russia and communist China. Politically, American modernists' focus on Asia was a strategic decision between rebuilding the civilization of old Europe and constructing the modernization of new Asia during the Cold

²⁹⁶ See "list of Regional Projects for Consideration under "The President's Fund for Asian Economic Development, revised on April 27, 1956." Ministry of Foreign Affairs Archives (11-07-02-19-01-030), Institute of Modern History, Academia Sinica.

War.²⁹⁷ However, as Kuan-Hsing Chen argued, “the Greater East Asia Co-Prosperity Sphere is an issue that has also prevented intellectuals from working through crucial cold-war concerns.”²⁹⁸

In the 1950s, Chinese Nationalists viewed trachoma as one of the most significant reasons for blindness. The consequence, according to the official Trachoma Control Teaching Material published in 1955, was not only at the individual level but “damaged the economy of the nation and the health of ‘minzhu’ (民族).”²⁹⁹ As historian Wen-Hua Kuo has argued (and I mentioned it in Chapter 1), the concept of minzhu (民族) might be more suitable for capturing how race and ethnicity operate in East Asia.³⁰⁰ In East Asia, the concept of “minzhu” blends the ideas of race, ethnicity, and nation-state, which was not given much attention by in the U.S. academia, but is widely understood in the East Asian region. Also, in *Trachoma Control Teaching Material*, ophthalmologist Jhen-Wu Chen listed the consequences of trachoma, including its impact on individual lives and educational opportunity, but this manual starts with “the crisis of decrease in labor productivity”: “In factories, trachoma would decrease work efficiency or labor productivity because the pains, sight loss, or sick leave. The factory cannot hire temporary workers to fill out the spots because the work requires trained people.”³⁰¹

As crucial as the labor force was, Chen also mentioned military force: “While military service physical exams, if the person who cannot enlist in the army because of having eyesight issues

²⁹⁷ Nils Gilman, *Mandarins of the Future: Modernization Theory in Cold War America* (Baltimore: The Johns Hopkins University Press, 2007).

²⁹⁸ Chen, 2010, 122.

²⁹⁹ Chen Chi Wun, “How to Prevent Trachoma,” in *Trachoma Control Teaching Material*, Taiwan Health Administration (ed.) (Taipei: Wun-Ruei’s Stationery Publishing, 1955), 14.

³⁰⁰ Wen-Hua Kuo, “Put Asia on the Map of Race; Put Race on the Map of Asia,” *East Asian Science, Technology and Society* 6, no. 3 (2012): 419–426; Wen-Hua Kuo, “East Asian Ethnicity in the Clinical Trial Studies,” in Shiyung Liu and Wen-Ji Wang (ed.) *A History of Healing in East Asia Colonialism, Gender, and Modernity* (Taipei: Linking Publishing, 2017), 303–320.

³⁰¹ Jhen-Wu Chen, “The Damage of Trachoma,” in *Trachoma Control Teaching Material*, Taiwan Health Administration (ed.) (Taipei: Wun-Ruei’s Stationery Publishing, 1955), 6.

caused by trachoma, it would decrease the military force of our nation. If soldiers need trachoma treatment during military services, it would increase the country's burden as well." The Chinese Nationalist state emphasized trachoma's negative impacts on the nation, which might harm the future of Free China. Chen even brought out the fact that in 1798, Napoléon's war with Egypt because too many French army suffering from trachoma.

For the Chinese Nationalist government, the youth mobilization was for both public health and political purposes. On the one hand, it eased the state's financial burden in training health professionals, while on the other hand, it functioned as a social experiment by connecting Taiwan's children from the community to the national levels for the Nationalists' future goal of taking back the territory of Mainland China from the Chinese Communist government.

From the U.S. standpoint, Taiwan's economic future was also entangled with the political future of Free China. As requested by the US government, a special committee published a "on-the-spot" survey report on the effectiveness of foreign aid programs in Korea, Japan, the Philippines, and Taiwan in 1957.³⁰² According to John A Hannah, the president of this survey team from Michigan State University, "the United States has only one real enemy in the world—international communism—and that aid is extended to foreign countries in support of a national policy, first, to halt the spread of communism, and second to bolster the internal strength of countries which stand with us as bulwarks against this menace to democratic ideals and world

³⁰² John A Hannah, *Korea, Japan, Taiwan (Formosa), and the Philippines Report on United States Foreign Assistance Programs Prepared at the Request of the Special Committee to Study the Foreign Aid Program* (Washington D.C.: US Governmental Printing Office, 1957).

peace.”³⁰³ It was assumed that the goal of anti-communism would be achieved by financially and technologically assisting the development of Far Eastern countries.

The international health campaign against trachoma was not only driven by humanitarian reasons but also rooted in the history of the fear and regulation of diseased immigrants from outside civilized Western society. As historian Howard Markel stated, “the immigrant groups stigmatized by trachoma during the Progressive Era included Greeks, Syrians, Italians, Mediterraneans, and Asians.”³⁰⁴ Between 1904 and 1909, more than a third of all Chinese and Japanese immigrants were denied to enter the U.S. due to a diagnosis of trachoma.³⁰⁵ Howard Markel’s work on the East European Jewish immigrant at Ellis island and similar facilities Historians demonstrates how the trachoma examinations of immigrants at the ports were strongly associated with the early-20th-century American Immigration Law.³⁰⁶ By drawing upon Chinese and Japanese immigrants’ experiences, historian Ji-Hye Shin argues that medical examination and deportation “shaped trachoma as an ‘Oriental’ problem in the American mind.”³⁰⁷ At the turn of the 20th century, immigrants and foreign visitors who had trachoma were not allowed to enter the United States. Between 1898 and 1905, only those exhibiting actual symptoms of trachoma were examined, but after 1905, all immigrants seeking entry to America received a medical

³⁰³ Ibid., 2.

³⁰⁴ Howard Markel, “‘The eyes have it’: trachoma, the perception of disease, the United States Public Health Service, and the American Jewish immigration experience, 1897-1924,” *Bulletin of the History of Medicine* 74, no. 3 (2000): 525–560, 527.

³⁰⁵ Ibid.

³⁰⁶ Markel, 2000.

³⁰⁷ Ji Hye Shin, “The ‘Oriental’ Problem: Trachoma and Asian Immigrants in the United States, 1897-1910,” *Korean J Med Hist* 23 (2014): 573-606, 576.

inspection for trachoma.³⁰⁸ Between 1906 and 1910, about 2,500 of the one million potential immigrants each year were excluded for trachoma.³⁰⁹

On the West Coast, examinations were conducted at Angel Island where new arrivals were quarantined, and anyone who was diagnosed with trachoma infection was sent back to their country.³¹⁰ Between 1899 and 1909, Asian immigrants processed in San Francisco were most frequently investigated for trachoma.³¹¹ In *Contagious Divides*, historian Nayan Shah identifies that several early-20th century U.S. health inspectors developed racial and racist explanations for Asian and trachoma; for example, Dr. Victor G. Geiser, chief quarantine officer in the Philippine Islands, argued that the “poor physical state of the average Oriental” was responsible for all kinds of inflammatory eye conditions.”³¹² Shah argues that, these theories of the “peculiar Asian susceptibility” and inheritance represent a racial hierarchy in the medical knowledge of trachoma.

Sociologist Alexandre I. R. White argues in his recent publication of history of international regulation and discourses surrounding infectious disease control that “epidemic Orientalism” has been functioning “as much as infectious disease control has been a project of protectionism, it has also been a project of defining difference for the purpose of control. This vision of the modern West exists by constructing a veil of difference between West and rest, with disease, differentials of political and economic power, and race operating as signifiers of

³⁰⁸ Markel, 2000, 534.

³⁰⁹ U.S. Bureau of Immigration, Department of Commerce and Labor, Annual Reports of the Commissioner General of Immigration to the Secretary of Commerce and Labor for the Fiscal Years Ended June 30 (Washington, DC: Government Printing Office, 1908-1914).

³¹⁰ The United Press, “Eye Disease Bars Japanese From U.S.,” 1935, Dec 20, *The Washington Post* (1923-1954); ProQuest Historical Newspapers: The Washington Post pg. 3.

³¹¹ Shin, 2014, 583.

³¹² Nayan Shah, *Contagious Divides: Epidemics and Race in San Francisco Chinatown* (Berkeley: University of California Press, 2001), 188.

difference.”³¹³ This newly developed concept helps explain how trachoma was racialized resulting in the targeted tactics taken to manage this disease on U.S. borders.

During the interwar period, colonial and racialized trachoma occurred with Asian immigrants coming from another continent *and* the Indigenous people in America, which led to the series of trachoma control programs and studies on school children on the reservations in Arizona.³¹⁴ Beyond the research and public health programs conducted on Indigenous children in boarding and day schools, several other field surveys and lab studies on trachoma were conducted on the Native American population and many of them prior to the increase in national budgets for school health and field and lab research initiated by President Woodrow Wilson in June 1913.³¹⁵

For example, Dr. Ida Albertina Bengtson (1881–1952), who was famous for being the first female scientist, who worked for the Hygienic Laboratory (now the National Institutes of Health) at the U.S. Public Health Service, conducting the trachoma project at the trachoma hospitals in Rolla in 1924, and in 1931 continued trachoma research and treatment in Bainbridge, Georgia. In Arizona and New Mexico in the 1920s, the prominent Japanese bacteriologist Hideyo Noguchi (1876–1928), who isolated the agent of syphilis in 1905, also collaborated with the U.S. Indian Field Service and U.S. Indian Medical Service for trachoma field research on the Native American community.³¹⁶

³¹³ White, 2023, 11.

³¹⁴ Alfred C. Reed, “Immigration and Public health,” *Popular Science Monthly*, 83 (1913): 313-338, 326.

³¹⁵ Allen and Semba, 2002, 500-509.

³¹⁶ See Hideyo Noguchi, “The Etiology of trachoma,” Baltimore, Md: Rockefeller Institute for Medical Research, 1928, and also Noguchi, “The Etiology of Trachoma,” *J Exp Med* 48, no. 1 suppl 2 (1928): 1–53. On the secondary sources, see Paul Franklin Clark, “Hideyo Noguchi 1876-1928,” *Bull Hist Med*, 1959, 33:1–20; Siang Yong Tan, and Jill Furubayashi, “Hideyo Noguchi (1876-1928): distinguished bacteriologist,” *Singapore medical journal* 55, no. 10 (2014): 550-1. The Macon Telegraph reported on February 10, 1931. Back to the early-20th century trachoma

The trachoma research on Native American school children has still been actively cited by scientists throughout the 20th and 21st centuries. For example, the controlled treatment trials of trachoma in day schools the UCSF-PHS team (led by Dr. Dawson and Mrs. Hanna) conducted.³¹⁷ This paper was treated as part of the scientific evidence for the scientific review on treatment and diagnosis of trachoma published in many well-known journals such as *Cochrane Library* and *Clinical Microbiological Review*.³¹⁸ It also appeared in discussions about the contributions of Native Americans to the global health research and infectious diseases control.³¹⁹ According to one of their publications in 2007, Dr. Mathuram Santosham from the School of Public Health at John Hopkins University along with other researchers mentioned that

studies within the U.S., monkeys had already been used for testing the trachoma strains isolated from the Native Americans and for the further observation of eye irritations. In Noguchi's project, the trachoma strains from Arizona were sent to the medical laboratory at Rockefeller Institute in New York for further observational experiments on monkeys. Also the *Kansas City Star* reported that Bengtson "made Rolla the chief American battle front in the war on" trachoma in her six years of working with over 1500 human patients and experimental animals including monkeys which she brought with her to the next work field at Georgia. The Macon Telegraph reported on February 10, 1931. Back to the early-20th century trachoma studies within the U.S., monkeys had already been used for testing the trachoma strains isolated from the Native Americans and for the further observation of eye irritations. In Noguchi's project, the trachoma strains from Arizona were sent to the medical laboratory at Rockefeller Institute in New York for further observational experiments on monkeys. Also the *Kansas City Star* reported that Bengtson "made Rolla the chief American battle front in the war on" trachoma in her six years of working with over 1500 human patients and experimental animals including monkeys which she brought with her to the next work field at Georgia.

³¹⁷ Chandler R Dawson, Lavelle Hanna, and Ernest Jawetz, "Controlled treatment trials of trachoma in American Indian children," *The Lancet* 290, no. 7523 (1967): 961-964.

³¹⁸ Solomon, Anthony W., Rosanna W. Peeling, Allen Foster, and David CW Mabey, "Diagnosis and assessment of trachoma," *Clinical microbiology reviews* 17, no. 4 (2004): 982-1011; Evans, Jennifer R., Anthony W. Solomon, Rahul Kumar, Ángela Perez, Balendra P. Singh, Rajat Mohan Srivastava, and Emma Harding-Esch, "Antibiotics for trachoma," *Cochrane Database of Systematic Reviews* 9 (2019). Regarding the topic of biomedical and research ethics, Elise Trott Jaramillo et al. mentioned this 1960s study in their paper on the healthcare and Native American elders. See Elise Trott Jaramillo, David H. Sommerfeld, Emily A. Haozous, Amy Brunner, and Cathleen E. Willging, "Causes and Consequences of Not Having a Personal Healthcare Provider Among American Indian Elders: A Mixed-Method Study," *Frontiers in Public Health* 10 (2022): 832626. Other medical and public health ethical issues and Native American Communities see "Lisa K Schuelke, "Nursing Reservations: White Field Nurses, Scientific Medicine, and Settler Colonialism, 1924-1955," ETD collection for University of Nebraska – Lincoln, 2017, AAI10271032; Thierry, Judith, George Brenneman, Everett Rhoades, and Lance Chilton. "History, law, and policy as a foundation for health care delivery for American Indian and Alaska Native children," *Pediatric Clinics* 56, no. 6 (2009): 1539-1559.

³¹⁹ Mathuram Santosham, Raymond Reid, Aruna Chandran, Eugene V. Millar, James P. Watt, Robert Weatherholtz, Connie Donaldson et al, "Contributions of Native Americans to the global control of infectious diseases," *Vaccine* 25, no. 13 (2007): 2366-2374.

“the lessons learned from these studies and their resultant prevention or treatment interventions have been applied around the world, and have had a major impact in the reduction of global childhood morbidity and mortality.”³²⁰

Their emphasis on the Native American community’s contribution to scientific advancement in history, especially its global impact, resonates with the current framing of the legacy of Mrs. Henrietta Lacks and HeLa cells. Particularly, in many cases like the history of trachoma vaccines, how do we evaluate history and scientific responsibilities when certain biomedical inventions that did not produce the expected result were then ignored by being recognized as certain failure or wrong doings among contemporary scientific perspectives?

In the mid-1970s, the failed attempt to produce a vaccine for trachoma and its etiology has reached the scientific consensus that trachoma is caused by the bacterium *Chlamydia* rather than virus infections. This part of history received less attention today among scientific and global health community. On the latest website on the impact of HeLa cells on biomedical Research designed by NIH, an interactive digital map entitled “HeLa Around the World” visualizes the number of publications involving HeLa cells in multiple disciplines on a global scale from 1953–2018. However, in the 366 scientific publications, I could not find the history of trachoma vaccine development, even though it existed and bridged several marginalized communities together throughout the history of global health.³²¹

³²⁰ Ibid, 2366.

³²¹ “Impact of HeLa Cells on Biomedical Research,” National Institute of Health. Accessed: October 20, 2022. <https://osp.od.nih.gov/policies/scientific-data-management-policy/impact-of-hela-cells-on-biomedical-research#tab2/>

Conclusion

By 1964, the NAMRU-2 team started to lose their confidence and admitted that they had difficulty in preventing experimental infections of humans or monkeys with a vaccine. They began to study the combined effect of a trachoma vaccine and antibiotic therapy on school children in three field trials located in Taichung and Chia-Yi county, in central and south central Taiwan.³²² The unpromising trial results on Formosa monkeys pushed the NAMRU-2 team to partly yield to its original optimism toward a global trachoma vaccination among children, as they turned to rely on the combination of antibiotic therapy and vaccination for children. However, in 1967, NAMRU-2 published their very detailed results on the low cure rate in field studies conducted between 1962–1964; in this case, the trachoma vaccine, combined with WHO and UNICEF eye ointment and administered to Taiwanese school children, eventually failed as an experiment.³²³

The history of trying to develop a trachoma vaccine is an often overlooked failure within the scientific community that deserves reconsideration. An examination of this failed endeavor reveals how children in Taiwan and the Native American Nation were engaged in this long-term health project that reproduced injustices including referring to Native Americans and individuals from East Asian countries as child-like. To highlight the role of children in a public health campaign with international ties also allows for a re-examination of their agency, as those,

³²² Grayston et al., 1964.

³²³ Robert L. Woolridge, KH Cheng, IH Chang, CY Yang, TC Hsu, and JT Grayston, "Failure of Trachoma Treatment with Ophthalmic Antibiotics and Systemic Sulfonamides Used Alone or in Combination with Trachoma Vaccine," *Am. J., of Ophth.*, 1967, 63(5): 551-557.

especially East Asians, who are the subjects of these global campaigns are often absent as marginalized and lack of power.

It is critically important to honor the contribution of marginalized populations to biomedicine and health sciences, yet it should not become an excuse for us to lose focus on scientific exploitation and dispossession in the history of global health, no matter the (often forced) participations did or did not result in the scientific “progress” or “advancement.” I thought about historian Susan M. Reverby’s work on syphilis study in Tuskegee and throughout the global South in the 20th century while writing the chapter.³²⁴ This has to be a transnational history since that was how global health trachoma research processed, it was through an incorporation of research subjects (marginalized children in the studies) and objects (marginalized children’s trachoma samples in the studies) across national borders.

For humanities, health practitioners and policy makers, I hope this chapter will raise awareness about research ethics and the scientific reckoning with the past, teaching us to care more than specifically about a few well-known cases on a national scale. That type of methodological assumptions (concern within nation-borders) might prevent us from finding that the interconnected injustices that happened in public health settings are embedded in a larger systematic context and on a global scale?

The transnational approach in historical analysis is helpful in shedding light on the shared logic of (post)coloniality and bridging the various forms of scientific engagement of different marginalized actors in collaborative global health research. The postwar history of trachoma virus and vaccine studies examined in this chapter is just one of countless historical examples;

³²⁴ Reverby, 2011, 8, and her *Examining Tuskegee* (Chapel Hill: University of North Carolina Press, 2009).

but it demonstrates the logic of coloniality behind rapidly scientific internationalization, which often represents a characteristic of the postwar period. As a result, the global collaborative research on trachoma facilitates many unexpected interconnections among marginalized communities across the regions in the postwar period. If a goal is to form a global solidarity that is justice-based, knowing this part of history is important. From knowing the shared oppression caused in past scientific practices, we might be able to reconcile history and make possible connections in the future.

CHAPTER FOUR

Indigenous Species for Imperial Sciences: The Past and Present Lives of Taiwan Monkeys and Coloniality

Introduction

Beginning in 1958, the *Paipai* ceremony, an annual religious ritual was held in the NAMRU-2 garden. It was hosted by a group of Taiwanese Buddhist monks, honoring the “soul” of the living things whose lives have been sacrificed for international health research at the NAMRU-2 laboratory.³²⁵ Rabbits, rats, mosquitoes, as well as the Formosa/Taiwan monkeys, were all considered living beings deserving of a Taiwanese type of official funeral, in NAMRU-2 commander Robert Phillips’s view, because they were sacrificed “in order that greater knowledge of the diseases which are a threat to mankind may be gained.”³²⁶

The ceremony to honor the sacrificed prompts interesting questions around the place of animals in biomedical colonial and postcolonial research. In its broader scope, it tells us what the recent humanitarian paradigm shift to animal-human relations is; in addition, it also tells us how history of science, medicine, and health campaigns in postcolonial Taiwan relate to this animal turn towards multispecies. In 2016, the American Historical Association (AHA) also acknowledged this paradigm shift to “escape the deified anthropocentrism that has undergirded the pursuit of history, a task requiring understanding in philosophy and critical theory.”³²⁷ The

³²⁵ For a detailed introduction to the history of NAMRU-2, see Chapter One.

³²⁶ “Letter to Mr. Tillman Durdin by Captain Robert Phillips.” 15 July 1961. Box 38, Folder 3, Tilman Durdin collection, UC San Diego Library.

³²⁷ Dan Vandermommers, “The ‘Animal Turn’ in History,” AHA Today, Perspectives on History, <http://blog.historians.org/2016/11/animal-turn-history/> (accessed Apr 16 2023). The early classic foundation see

paradigm shift pushes to diversify the narratives, and human beings are no longer considered to be the only major historical actors shaping the world.

Besides the role of the Taiwanese children that were examined in the previous chapter, another crucial actor in the global health campaign against trachoma deserves a similar amount of attention—the Taiwan monkey as a research subject. Without trials on monkeys, there would not be the stable purification of the viruses that was necessary for the next step of human trials when viruses could be reproduced and duplicated in the laboratory. .



Figure 5.1: The annual Buddhist ritual for honoring animal experimental subjects in the NAMRU-2 garden. Dr. Tien-Chen Kao, superintendent of the NTU hospital, was reading the dedication that Commander Robert Phillips on his left was listening; On the right side was Dr. San-Pin Wang (王三聘), a key Chinese trachoma specialist working closely with the U.S. navy in Taiwan.

The animal subjects were not merely monkeys living in Taiwan but specifically the “Taiwan monkey” or “Formosan rock-monkey,” the one and only indigenous monkey species that belongs to this island. The scientific classification of Taiwan/Formosan Monkey gave this

Haraway, 1989; Harriet Ritvo, *The Animal Estate* (Cambridge: Harvard University Press, 1987); Donald Griffin, *Animal Minds* (Chicago: University of Chicago, 1992). Also see footnote 36.

indigenous living species a western scientific name-- *Macaca cyclopis*. NAMRU-2's field work and laboratory studies on monkeys were not primarily motivated by the natural historical exploration as their earlier colonial counterparts in Taiwan, but by the goal to defeat tropical diseases and Asian diseases.

The history of experimental animals has drawn the attention of many historians, but it generally lies in the development of Western science and in a specific European context.³²⁸ In her excellent historiography on the animal history of Taiwan published in 2020, Taiwanese historian Li-Jung Cheng states that “the history of experimental animal in Taiwan, perhaps due to the expertise barrier, is almost empty and lack of historical discussion.”³²⁹ In the Euro-American context, a popular research topic in around the 2000s was to understand the roles of experimental animals in navigating the direction of the 17th century scientific revolution, the development of experimental physiology around 1800 and of bacteriology, the germ theory of diseases, and vaccine and sera production in the second half of the nineteenth century. Western medicine has become “modern” through its historical relations with experimental animals in laboratory.³³⁰ By

³²⁸ For example, the historians of science discussed about animal experiments in ancient European medicine back to the early observation of farm animals through which Hippocrates developed his thoughts on hysteria and the ancient Galenic medical knowledge that linked experimentation to nature by studying the results of human and animal vivisection and physiology, see Lloyd G. Stevenson, “Anatomical Reasoning in Physiological Thought,” in *The Historical Development of Physiological Thought*, Chandl Brooks and Paul F. Cranefield eds, 27-38 (New York: Hafner, 1959); William F. Bynum, “The anatomical method, natural theology and the functio brain,” *Isis* 64, no. 224 (1973): 445-68.; Anita Guerrini, *Experimenting with Humans and Animals: From Galen to Animal Rights* (Baltimore: John Hopkins University Press, 2003); Maehle A.-H., Tröhler U, “Animal experimentation from antiquity to the end of the eighteenth century: Attitudes and arguments,” in *Vivisection in Historical Perspective*, Rupke N.A. (ed) (London: Croom Helm, 1987).

³²⁹ Li-Jung Cheng, “taiwan dongwu shi shuxie de huigu yu zhanwang: yi jin er shi nian lai weizhu de tantao (The Review and Future towards Animal History of Taiwan in the Past Two Decades,” *Bulletin of History Department National Ch'eng Kung University*, no. 58 (2020): 233-251, 247.

³³⁰ The scholarship includes the examinations of the birds in Robert Boyle's air pump experiment, the dogs in Robert Hooke's open thorax experiment for a public audience and the Royal Society's medical education, and William Harvey's anatomic works on various species, including mammals, fish, reptiles, and insects. See Karen Rader, “Scientific Animals,” in *A Cultural History of Animals in the Modern Age*, Randy Malamud (ed.), 119-137 (London: Berg, 2007); Nuno Henrique Franco, “Animal Experiments in Biomedical Research: A Historical Perspective,” *Animals* 3 (2013): 238-273; Guerrini, 2003. During the second half of the nineteenth and the early twentieth centuries, experimental techniques were not only applied to vaccine production for human diseases by

tracing the nineteenth-century experimental work of scientists such as Robert Koch and Louis Pasteur on microbe and vaccines and the colonial expansion of laboratory science, historians and STS researchers have portrayed the changing relationship between species.³³¹

Following the gradually established knowledge of species category and the relations between humans, animals and microbes, historians working on twentieth-century experimental animals have often highlighted the construction of an “animal model” during the process of standardization, which was coupled with the rise of statistics, selective and commercial breeding, and also with the development of new disciplines such as pharmacology, endocrinology, and immunology during the early twentieth century and what Ilana Löwy called biomedicalization in

using animal bodies but also provoked interspecies comparisons and discussions on the role of animals as human surrogates or experimental proxies in laboratories see William F. Bynum, “‘C’est une Malade!’ Animal Models and Concepts of Human Diseases,” *Journal of the History of Medicine and Allied Sciences* 45 (1990): 397–413; Guerrini, 2003; Franco, 2013.

³³¹ For instance, Michael Worboys (2000) reframes the famous Koch Postulate on bacteria although across species observation, through studying the tuberculosis transmission between humans, cows, and birds. Aro Velmet (2019) demonstrated that, between the late 19th and early 20th centuries, the Pasteur Institute built an empire that shaped the relation between humans and microbes by launching TB prevention and BCG vaccination within the French colonies from Indochina to West and North Africa. According to historian William Bynum (1990:403), “germ theory did inevitably require animals, and it linked human medicine inextricably with animals.” In fact, the first international consensus on the nature of microorganisms was achieved during the 1880s when bacteria was defined as one individual species, see Angela Cassidy, Rachel Mason Dentinger, Kathryn Schoefert, and Abigail Woods, “Animal roles and traces in the history of medicine, c.1880-1980,” *BJHS themes* vol. 2 (2017): 11-33. In regard to the definition of animals, some contemporary scholars also recognize microbes as research subjects when it comes to the history of experimental animals. Also see Bruno Latour, *The Pasteurization of France*. Translated by Alan Sheridan and John Law (Cambridge: Harvard University Press, 1988); Jonathan Simon, “Monitoring the Stable at the Pasteur Institute,” *Science in Context* 21 (2008): 181–200; J. Andrew Mendelsohn, “Message in a Bottle: Vaccines and the Nature of Heredity after 1880,” in *Heredity explored: Between public domain and experimental science, 1850–1930*, S. Müller-Wille and C. Brandt eds., 243-63 (Cambridge: MIT Press, 2016); Linda Nash, *Inescapable Ecologies: A History of Environment, Disease, and Knowledge* (Berkeley: University of California Press, 2006); Abigail Woods, “Doctors in the Zoo: Connecting Human and Animal Health in British Zoological Gardens, c.1828–1890,” in *Animals and the Shaping of Modern Medicine: One Health and Its Histories*, Michael Bresalier, and Rachel Mason Dentinger Angela Cassidy eds., 27-70 (London: Palgrave, 2017); Robert G.W. Kirk, “The Invention of the ‘Stressed Animal’ and the Development of a Science of Animal Welfare, 1947–86,” in *Stress, Shock, and Adaptation in the Twentieth Century*, D. Cantor and E. Ramsden eds., 241-63 (Rochester: University of Rochester Press, 2014); J. Andrew Mendelsohn, “Message in a Bottle: Vaccines and the Nature of Heredity after 1880,” in *Heredity explored: Between public domain and experimental science, 1850–1930*, S. Müller-Wille and C. Brandt eds., 243-63 (Cambridge: MIT Press, 2016); Gradmann Christoph, *Laboratory Disease: Robert Koch’s Medical Bacteriology* (Baltimore: Johns Hopkins University, 2009).

the post–World War II era.³³² According to Michael Lynch’s classic ethnographical description, rats in the laboratory setting, were “transformed by laboratory procedures to become a “bearer of a generalized knowledge.”³³³ Instead of focusing on well-studied laboratory animals, many recent historians now encourage researchers to expand the scale of medical history to other fields such as zoos, farms, museums, forests, hospitals, and international policy arenas, and to pay attention to more diverse species from cows, sheep, and zebu to rhinos, badgers, and monkeys.³³⁴

To expand the scale of animals in history of science and medicine is not just driven by intellectual interests but it could work as a radical expansion to deepen our understanding of colonial and postcolonial history. Let’s revisit Pan-Africanist Amilcar Cabral’s account in 1973: “man has never shown as much interest in knowing other men and other societies as during this century of imperialist domination. An unprecedented mass of information, of hypotheses and theories has been built up”³³⁵ This statement could be also applied to the human–animal colonial

³³² Cheryl Logan, “Before there Were Standards: The Role of Test Animals in the Production of Empirical Generality in Physiology,” *Journal of the History of Biology* 35 (2002): 329–63; Ilana Löwy, “The Experimental Body,” in *Companion Encyclopedia of Medicine in the Twentieth Century*, Roger Cooter and John Pickstone eds., 435–49 (London: Routledge, 2003) and also her “Historiography of Biomedicine: ‘Bio,’ ‘Medicine,’ and In Between,” *Isis* 102 (2011): 116–22; Rader, 2007; Franco, 2013. In the American context, some historians examined the history of standardization of experimental animals by tracing the development of institutions such as the Wistar Institute and Jackson Laboratory, or the works of the leading scientist C.C. Little, see Rader 2007; Logan, 2002. Others analyzed the postwar trend of selectively-bred mice in genetics, cancer research, and reproductive medicine, see Barbara A. Kimmelman, “Organisms and Interests in Scientific Research: R. A. Emerson’s Claim for the Unique Contribution of Agricultural Genetics,” in *The Right Tools for the Job*, A. E. Clarke and J. H. Fujimura eds. (Princeton: Princeton University Press, 1992); Adele E. Clarke and Joan H. Fujimura (ed.). *The Right Tools for the Job: At Work in Twentieth-Century Life Sciences* (Princeton: Princeton University Press, 1996), and Joan Fujimura, “Standardizing Practices: A Socio-History of Experimental Systems in Classical Genetic and Virological Cancer Research, ca. 1920-1978,” *History and Philosophy of the Life Sciences* 18 (1996): 3-54. In Cheryl Logan’s historical account, the standardization of animal experimentations also led to the epistemological discussion of scientific diversity and generality when it comes to selecting animals in the research of human diseases. See Logan, 2002.

³³³ Michael Lynch. 1988. “Sacrifice and the Transformation of the Animal Body into a Scientific Object: Laboratory Culture and Ritual Practice in the Neurosciences.” *Social Studies of Science* 18 (2): 265-89, p. 266.

³³⁴ Great animal history beyond laboratory at other social sites see Ritvo, 2018.

³³⁵ Amilcar Cabral, “Identity and Dignity in the National Liberation Struggle,” *Africa Today* 19, no. 4 (1972): 39–47, 40.

relation. In recent published volume *Animalia: An Anti-Imperial Bestiary for Our Times*, the authors collectively foreground “British Empire as a multispecies enterprise.”³³⁶

To scale down the wide subjects investigated by the 19th century colonial subject to animal species, Pratik Chakrabarti and Peter Hobbins provided a colonial critique on the role of experimental animals in the British Empire’s tropical research that not only established the scientific laboratory in colonial India and Australia but also transformed the colonies into a social laboratory for colonial interests.³³⁷ Postcolonial studies have its long and strong tradition in the Latin American academic society. By examining the role of animals in medicine and public health during the eighteenth to the twentieth centuries, Latin American historians demonstrate the convergence and conflict between indigenous and Spanish colonial knowledge of animals and microbe while disease epidemics often resulted from modernization projects—i.e., the regulation and control of animals, insects, and indigenous population.³³⁸

The postcolonial approach helps to situate the history of the naturalist investigations launched during the 19th century into a greater colonial expansion to Asia and Pacific islands.³³⁹

³³⁶ Antoinette Burton and Renisa Mawani “Introduction,” in *Animalia: An Anti-Imperial Bestiary for Our Times* (Durham: Duke University Press Books, 2020), 1

³³⁷ Chakrabarti, 2010; Peter Hobbins, *Venomous Encounters: Snakes, Vivisection and Scientific Medicine in Colonial Australia* (Manchester: Manchester University Press, 2017).

³³⁸ Neel Ahuja dissected the American imperialist vision in modernizing Puerto Rico by controlling reproduction of primates and modeling the rhesus macaques of Indian origin for experimental medical research, see Neel Ahuja, “Notes on Medicine, Culture, and the History of Imported Monkeys in Puerto Rico,” in *Centering Animals in Latin American History*, Martha Few and Zeb Tortorici eds., 180-208 (Durham: Duke University Press, 2010).

³³⁹ Heather McCrea, “Pest to Vector: Disease, Public Health, and the Challenges of State-Building in Yucatán, Mexico, 1833–1922,” in *Centering Animals in Latin American History*, Martha Few and Zeb Tortorici eds., 149-179 (Durham: Duke University Press, 2010); Adam Warren, “From Natural History to Popular Remedy: Animals and Their Medicinal Applications among the Kallawayas in Colonial Peru,” in *Centering Animals in Latin American History*, Martha Few and Zeb Tortorici eds., 123-148 (Durham: Duke University Press, 2010); Ahuja, 2010; Ernest S. Dodge, *Islands and Empires: Western Impact on the Pacific and East Asia* (Minneapolis: University of Minnesota Press, 1978); Vicente Navarro, *Medicine under Capitalism* (New York: Prodist, 1976); Daniel R. Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (New York: Oxford Univ. Press, 1981); Roy MacLeod ed., *Nature and Empire: science and the colonial enterprise* (Chicago : University of Chicago Press, 2001); David Philip Miller and Peter HannsReill eds., *Visions of Empire : voyages, botany, and representations of nature* (New York : Cambridge University Press, 1996).

Under the gaze of empire, the animals and their specimens were part of the imperial knowledge production among European naturalists who might at the same time be a colonial officer, businessman, missionary, sailor, or traveler. It is necessary to address, first, the association between the global collection of species and colonial expansion; and second, how the role of animals in the colonial sciences was often specifically overlapped with racial classification and the imperial trade. In the article “Imperial Transgressions,” historian Sujit Sivasundaram examined the coproduction of racial knowledge and animality by dissecting European and American colonialists’ collections and scientists’ research of skulls and animal fossils in nineteenth-century New Zealand, India, and West Africa.³⁴⁰ In the late nineteenth century, the development of empire, international trade, railways, and steamships generated new opportunities for animals to perform as hosts and transmitters of infection to humans. Concurrently, the pathways through which these diseases were transmitted were elucidated by newly developed epidemiological and bacteriological methods.

As we mentioned at the beginning, AHA has recognized that animals have migrated into historical inquires and historians need to engage more with critical theories and other disciplines as well. Detouring from human-centricism, the recent scholarship in STS, ecological feminism, animal studies, and environmental humanities bring in human-animal relation as a conceptual tool to challenge the philosophical divide between humans and humanity, between human and animals, between culture and nature.³⁴¹ The significance of animals to the history of science and

³⁴⁰ Sivasundaram, Sujit, “Imperial Transgressions: The Animal and Human in the Idea of Race,” *Comparative Studies of South Asia, Africa and the Middle East* 1, no. 35, issue 1 (2015): 156–172.

³⁴¹ Haraway, 1989; Chakrabarti, 2010. Among many environmental historical works, Virginia DeJohn Anderson identifies the animals conceptualized as historical agents driving European colonialization, and Ann Norton Greene theorizes it through her work on how horses served as foreign imports in the Americas during European colonial expansion and as technology driving the process of American industrialization (see Ann Norton Greene, *Horses at Work: Harnessing Power in Industrial America* (Cambridge: Harvard University Press, 2008) and Virginia DeJohn Anderson, *Creatures of Empire: How Domestic Animals Transformed Early America* (New York: Oxford

medicine is more than merely the ways that they enhanced or challenged human's health by acting as experimental material or by transmitting diseases.³⁴² In fact, the feminist and STS works have demonstrated that this type of distinction is a male version of a world perspective instead of being an epidemiological assumption; and on the other hand scholars and activists in the field of race and animals confront the assumption of human and humanity "is not just about whether or not one belongs to the species homo sapiens,"³⁴³ but as a "conceptual way to mark the province of European whiteness as the ideal way of being homo sapiens" that always constructed along racial lines."³⁴⁴

Therefore, we need an epistemological reframing of human nature as an interspecies relationship, and it understands domination, oppression, and exploitation as an interlocking system involving species and categories of human beings who are not qualified to be "man"—those of particular gender, social class, racial and ethnic minorities.³⁴⁵ By breaking down the great divide, researchers have traced the encounters of where and when species meet intersectionally, adapt mutually, and live entangled in different historical or contemporary scenes.³⁴⁶ Indeed, the debate over historical agency lies in the discussion about different

University Press, 2004). In turn, animal bodies and behaviors shaped medicine. Rickety lions and monkeys informed the understanding of the pathology and epidemiology of rickets and its management in people, for example, and depressed marsupials influenced ideas of human psychiatric disease.

³⁴² This is a criticism raised by a group of British scholars in animals studies led by Cassidy et al. 2017, 13.

However, I think the development in the U.S. context, especially the contribution of STS extends the possibilities for conceptual and ontological revolutionary in humanities.

³⁴³ Aph Ko and Syl Ko, *Aphro-ism: Essays on pop culture, feminism, and black veganism from two sisters* (Lantern Publishing & Media, 2017), 20.

³⁴⁴ Aph Ko and Syl Ko, 2017, 23.

³⁴⁵ John McNeill, *Something New under the Sun: An Environmental History of the Twentieth-Century World* (London: Allen Lane, 2000); Tsing, 2012; Haraway, 2008; Nash, 2005.

³⁴⁶ Livingston and Puar 2011; Ritvo 2008; Haraway 2008. Scholars from or working in the global south and postcolonial studies also identify that the distinction is not universal either. For instance, Mahesh Rangarajan illustrates the blurred boundary between human and animals in South Asia by analyzing the changing symbolic values which the lions of Gir carried in Indian history, see Mahesh Rangarajan. 2013. "Animals with Rich Histories: The Case of the Lions of Gir Forest, Gujarat, India." *History and Theory* 52 (4): 109-27.

conceptions of animals, species, and other nonhuman creatures.³⁴⁷ As John Law and Annemarie Mol (2008) have suggested, it is more important to describe how animals act instead of imposing on them the Enlightenment figure of rational human actors because animals and other living things act in their own ways yet often affect human history in unpredictable ways.³⁴⁸

A logic of coloniality also functioned continuously during this period of knowledge production about Taiwan monkeys. In this chapter, I argue that Taiwan became a field for the colonial matrix of powers—Japan, Britain, and the U.S.—with their wider colonial and imperial expeditions having been ongoing since the mid-19th century. Walter D. Mignolo has theorized that the colonial matrix of power has two sides: one which is constantly celebrated just like the development of the modern sciences, with coloniality as the other side that is often ignored. A new global order -- “a polycentric world interconnected by the same type of economy,”³⁴⁹ as Mignolo has suggested – also operates in modern science.

Moreover, these different forms of scientific engagement with the Taiwan monkey shared the similar essence of coloniality. Through adopting the combination of postcolonial theory and transnational methodology, this chapter centers indigenous monkeys of Taiwan in the scientific exchanges and exploitation across nation borders whether for the colonial pride or the humanitarian flag weaved by the postwar global health campaigns. It is also about various social relations to the island. For instance, Pratik Chakrabarti and Peter Hobbins both provide a

³⁴⁷ Hilda Kean, “Challenges for Historians Writing Animal–Human History: What Is Really Enough?” *Anthrozoos* 25 (2002): 57–72; Vinciane Despret. 2016. *What Would Animals Say if We Asked the Right Questions?* Minneapolis: University of Minnesota Press; Susan Nance (ed.). 2015. *The Historical Animal*. New York: Syracuse University Press.

³⁴⁸ John Law and Annemarie Mol. 2008. “The Actor-Enacted: Cumbrian Sheep in 2001.” In *Material Agency Towards a Non-Anthropocentric Approach*, edited by Carl Knappett and Lambros Malafouris, 57-77. London: Springer.

³⁴⁹ Walter D. Mignolo, *the Darker Side of Western Modernity Global Futures, Decolonial Options* (Durham: Duke University Press, 2012), 7.

colonial critique on the role of experimental animals in the British Empire's tropical research that not only established the scientific laboratory in colonial India and Australia but also transformed the colonies into a social laboratory for colonial interests.³⁵⁰

Therefore, A central question asked in this chapter is what were the relationships between of colonial exploration, natural history, and the field and experimental scientific application surrounding the Taiwan Monkey from the most recent NAMRU-2 operation, to the earlier Japanese colonial investigations and the First British imperial voyages. I intentionally interrupt the chronological order, but taking my historical analysis started from the global health research of NAMRU-2 in the postwar period, and then back to the British and Japanese colonial investigation on Taiwan Monkey, in order to illustrate how it was the logic of colonial racial capitalism supports the establishment of the NAMRU-2 scientific utilization of the Taiwan Monkey and other animal species since the 1950s.

In this chapter, I argue that, the history of Formosa/Taiwan Monkey research, as a series of scientific missions, were carried out under and through the logic of coloniality and racial divide. It began in the late-nineteenth century with the Western exploration from the British empire, extending to the work of the early-twentieth-century Japanese colonial bureaucrats/naturalists and medical zoologists, and then culminating in the postwar U.S. naval medical research conducted in Taiwan. The Formosa/Taiwan Monkey was differentiated from other Asian monkeys within the colonial taxonomy described by Japanese naturalists and medical zoologists working on tropical diseases, and these studies also implied the Japanese

³⁵⁰ Pratik Chakrabarti. "Beasts of Burden: Animals and Laboratory Research in Colonial India." *History of Science* 48 (2010): 125–52; Peter Hobbins. *Venomous Encounters: Snakes, Vivisection and Scientific Medicine in Colonial Australia* (Manchester: Manchester University Press, 2017).

anthropologists' racial analogy between the species and the indigenous people of Taiwan. To extend the critique on colonial racial capitalism, I argue that the injustice, exploitation, and dispossession of science and biomedicine that emerged from the animal-human relation and the apparent dispensability of animal lives as a consequence of the colonial matrix that operated in Taiwan.

Therefore, this chapter examines the centrality of animal-human relations to sciences in Taiwan by examining the changing role of the Taiwan monkey as a research subject before the postwar U.S. naval medical research that took place in the early-20th century Japanese colonial sciences, and even earlier in the mid-19th century British exploration in the Far East. By tracing the Taiwan monkey in different research projects, this chapter illustrates the ways in which the knowledge production surrounding the monkeys in Taiwan began from the British and Japanese field explorations to the later laboratory experiments in the 1940s, yet this native species also acted as a methodological bridge that connected the laboratory and field studies during NAMRU-2 operations in postwar Taiwan.

The Postwar Encounters: The Taiwan Monkey at the Intersection of Field Studies and Laboratory Research in NAMRU-2's International Health Campaign

In contrast to the early-20th century, when the Taiwan monkey was used in the Japanese colonial sciences, the postwar deployment of several U.S. military medical research stations in Asia changed the existing research network that had been built by Japanese naturalists and medical zoologists. The colonial infrastructure functioned as a vessel for U.S.-led global health research in Asia and the Pacific Islands during postwar. This was likely due in part to the fact that after losing WWII, the former Japanese empire was taken over by the U.S. military.

Meanwhile, the Re-Sinicization of Taiwan also shows up in the fact that the shifting possession and ownership of the Taiwan Monkey—the Chinese Nationalist regime often gave out Taiwan monkeys as diplomatic gifts for foreign visitors during the early-postwar period (see Figure 5-2).³⁵¹ Both the former and current empires and its colony had now become semi-territories in the same “regional” category defined by America’s colonial racial capitalism, the Cold War version.



Figure 5.2: Taiwan Monkeys as Animal Diplomacy: Nationalist Chinese Government gave out Taiwan Monkeys to other countries, date unknown (“tai wan xin wen bao di pian dong wu lei, liu (Taiwan News Report Bottom Film - Animal Category, no. 6).” *Taiwan xin wen bao*. *Academia Historia*, 156-030201-0006-023)

In fact, it is the postcolonial history of Taiwan Monkey in the laboratories that demonstrates the animal knot that connected the colonial infrastructure and the U.S. naval operation together, both domestically and overseas, which made efforts to standardize international health research during the postwar possible. The note written by Yukimasa Nakaizumi (中泉行正, 1897–1978), the former president of the Japanese Ophthalmology Society, marks the start, as he was surprised by the fact that the infrastructure for experimental

³⁵¹ Monkey See, Monkey Bite, Brings Trouble All Around. (1952, Jun 16) *Newsday* (1940-); ProQuest Historical Newspapers: *Newsday* pg. 18; Bi-min Kagawa, “Jikken-yō saru no shiiku kanri ni tsuite (The Management and Breeding of the Experimental Monkeys),” *Bulletin of the experimental animals* 4, no. 5 (1955): 54-56. doi: <https://doi.org/10.14835/exanim1952.4.54>

animals in Taiwan had been greatly improved during his visit to NAMRU-2 and National Taiwan University (NTU) in November 1963:

The research scale, including the facilities and research methods in the current Taiwan, is better than that of our nation right now (editor: Japan). It is because of the huge financial support coming from the U.S...the animals are happy during the experimental process. It is a heaven for animals. The experimental monkeys have been healthy and living for more than five years, and this is the fundamental assumption for conducting great experimental research.³⁵²

NAMRU-2 maintained the experimental animal camp in a modern scientific way. A key component Dr. Nakaizumi highlighted during his visit was the “health management (健康管理),” such as the nutritional value of the food, the vitamin and mineral supplements, and the temperature and humidity controls within their living environment.³⁵³

Rather than giving all the credit to the NAMRU-2, the building of the infrastructure remained situated in a broader history of the foreign U.S.-led financing of medical and public health reconstruction in postwar Taiwan. In terms of the animal facilities and kinds of animals for research use at NTU where the NAMRU-2 stationed, the infrastructure related to research animals at NTU was funded earlier by other American organizations—governmental and philanthropic—the public health office of the U.S. Foreign Operations Administration (FOA) and the China Medical Board, Inc. (CMB), a Rockefeller affiliated American organization during the 1950s.³⁵⁴

³⁵² Yukimasa Nakaizumi, “Taiwan University and Trachoma Research,” *Japanese Journal of Clinical Ophthalmology* 18, no. 5 (1964): 659-662, 661.

³⁵³ Nakaizumi, “Taiwan University and Trachoma Research,” 659-662.

³⁵⁴ CMB records, SG 1, S1, box 5, folder 13.

This is a typical form of U.S. aid in the postwar Asia which clearly demonstrates the colonial racial capitalist agenda. The recipient nations and institutions often requested and received both governmental and non-governmental funds from multiple sources for one single health program or project. After 1949, CMB's geographical shift from Mainland China to East Asia resulted in the growing investment in Taiwan as well as the Sinicization of this island.³⁵⁵ According to the CMB records, the renovation plan for animal laboratory and housing was requested by the Dean of the medical college at NTU, "in the interest of economy and interdepartmental cooperation."³⁵⁶

As a medical specialty, ophthalmology in Taiwan had been through a transition from the Japanese to the American system started in the summer of 1950 when the NTU Hospital launched the American physician system, and the official written language of case reports switched from German to English.³⁵⁷ As historian Michael Shiyung Liu has stated, the "American medical models and professional practices eventually guided the medical reforms in Taiwan between 1952–1965, creating new professional standards for the post-war generation."³⁵⁸ Co-conducted by the NTU ophthalmologists and NAMRU-2 scientists, the trachoma vaccine development, as Dr. Nakaizumi had praised, is also a great example because it was situated in a wider global health research project against trachoma with the WHO, UNICEF, the Chinese

³⁵⁵ Hsieh, 2023.

³⁵⁶ CMB records, SG 1, S1, box 5, folder 13.

³⁵⁷ Chen Mui-shi, "Juangei yixuesheng dati jiepouxue shixi de liangshi dianfan: yangyanfei mingyu jiaoshou baisui danchen yixingyi," *NTU Alumni Biomonthly* 66 (2009):38-43.

³⁵⁸ Shiyung Liu, "From Japanese Colonial Medicine to American-Standard Medicine," in *Science, Public Health and the State in Modern Asia*, edited by Liping Bu, Darwin H. Stapleton and Ka-che Yip, 161–176 (Oxon: Routledge, 2012), 172. The systematic review on the U.S. aids in medicine and public health programs during postwar Taiwan, see Cuihua Yang, "U.S. Aid in the Formation of Health Planning and the Medical System in Taiwan," *Bulletin of the Institute of Modern History of Academia Sinica* 62 (Dec 2008), 91–139; Wen-Hua Kuo, "How to Write a History of Public Health under U.S. Aid in Taiwan: A Critical Review," *Taiwan Historical Research* 17, no. 1 (2010): 175–210. An introductory history of the U.S. aid in the postwar medical reform in Taiwan, see Wenhua Huo and shu-ching Chang, "Meiyuan yiliao," in *Taiwan yiliao sibainian* (Taipei: Rhythms Monthly, 2006), 142–166.

Nationalist government, the local schools and health stations in Taiwan since 1952 (see Chapter Two).

Instead of simply documenting his observations in Taiwan, Dr. Nakaizumi acknowledged the improvements there by comparing them to developments in Japan, Taiwan's former colonial mother country, which had seemed to lose its research advantage in the postwar era because of the reassemblage of geopolitics. He also identified the fact that the postwar policy in Japan banned free animal trade and importation so that scientists were not able to easily obtain experimental animals as compared to the pre-WWII era. In Dr. Nakaizumi's observation of NAMRU-2 in Taiwan, he twice emphasized the U.S.'s role in providing financial support for Taiwan's experimental studies on eye diseases and NAMRU-2's management of experimental animals, focusing in particular on monkeys. New concepts in laboratory animal science and medicine, especially regarding their management and use, were introduced to Taiwan through NAMRU-2 starting around late 1950. Although the U.S. did play a key role in shaping experimental animal research, we should realize that Dr. Nakaizumi's account also links these developments to Japan's reinforcement of bans on the monkey trade in the 1950s.

In 1959, *The New York Times* reported on the progress of a new vaccine for trachoma, and the Navy stated that Dr. San-Ping Wang's successful isolation of virus strains was due to the local Formosan monkeys in the experiments.³⁵⁹ According to Dr. Thomas Grayston and his NAMRU-2 team on JAMA, "so far the monkey eye is the only tissue of any laboratory animal that has been infected with the Taiwan trachoma viruses."³⁶⁰ This NAMRU-2 team inoculated

³⁵⁹ Raymond, J. (1959, Nov 24). New vaccine helps trachoma (NAMRU2). *The Province* (1956-2010); Vancouver, British Columbia [Vancouver, British Columbia], page 30.

³⁶⁰ J. Thomas Grayston, San-Pin Wang., Robert L. Woolridge, and Yen-fei Yang, "Trachoma Studies of Etiology, Laboratory Diagnosis, and Prevention," *JAMA* 172, no. 15 (1960): 89-98, 92.

several animals and birds with one of the Taiwan trachoma strains, yet no successful eye infection was detected among “adult mice, infant mice, mice after radiation with 400 r, guinea pigs, white rats, golden hamsters, rabbits, monkeys, and parakeets.”³⁶¹ While presenting their findings on the trachoma vaccine trials on Taiwanese monkeys at the 54th Annual Meeting of the Formosan Medical Association in 1961, the NAMRU-2 researchers were optimistic about the solid immunity they found in Taiwanese monkeys during repeated eye inoculations with live trachoma virus.³⁶²

From 1959 to 1965, a series of trachoma vaccine trials on monkeys was conducted by NAMRU-2 researchers.³⁶³ They were adult monkeys of either sex with a body weight of 1.5 to 3.5 kg, captured in the mountainous area of Taiwan, and kept in an individual cage during the experiments.³⁶⁴ The Formosa monkey species used in the trachoma vaccine trials had been the key in isolating the viruses by giving their “lives” to be reproduced, and giving scientists the “analogical” opportunity to observe the eye infections of other species. According to a research finding from the 1965 NAMRU-2 Summaries of Research, the HeLa cells only remained pathogenic for monkeys and were nonpathogenic for mice, which resulted in the following trachoma vaccine experiments on monkeys.³⁶⁵

³⁶¹ Ibid; Wang, San-Pin Wang and J. Thomas Grayston, “Pannus with Experimental Trachoma and Inclusion Conjunctivitis Agent Infection of Taiwan Monkeys,” *American Journal of Ophthalmology* 63, no. 2 (1967):107-119.

³⁶² San-Pin Wang, J. Thomas Grayston, A. F. Rasmussen, and Robert L. Woolridge, “Experimental Trachoma Vaccine Studies in Taiwan Monkeys.” Paper presented at the 54th Annual Meeting of the Formosan Medical Association, November 25 - 26, 1961. Taiwan: Taipei.

³⁶³ Wang and Grayston, “Pannus with Experimental Trachoma and Inclusion Conjunctivitis Agent Infection of Taiwan Monkeys,” 107-119; San-Ping Wang, J. Thomas Grayston, and E. Russel Alexander, “Trachoma vaccine studies in monkeys,” *Am. J., Ophth.* 63, no. 5(1967): Suppl:1615-1630.

³⁶⁴ San-Pin Wang and J. Thomas Grayston, “Micro-immunofluorescence antibody response to trachoma vaccines,” *International Ophthalmology* 12 (1988):73-80.

³⁶⁵ H. M. Jenkin, “The Continuous Passage of Agents of Trachoma in Cell Culture. I. Characteristics of TW*3 and Bour strains of trachoma cultivated in serial passage in HeLa 229 cells,” NAMRU-2 Summaries of Research 1, July-31 December 1965 (MR005. 09-0011. 3).

In seven years of animal experiments to develop the trachoma vaccine, 451 Taiwan monkeys were infected with the Taiwan trachoma strain in a variety of ways, and many of them were inoculated more than once. Different vaccines were developed and tested on monkey subjects to obtain not only effective but also reproducible results. In these experiments, there were 617 infections with the pathologic changes of experimental trachoma. According to this report, the severity and length of the disease varied. Some monkeys were mildly infected, and the disease lasted for less than one month; others endured more than five years of severe trachoma infection.³⁶⁶ Here the imperial violence exceeded outside humans, and it was framed as a necessary sacrifice for scientific process and medical advance. Taiwan monkeys' lived experiences of significant pain and discomfort were nonverbal but real. The use of Taiwan monkeys in trachoma vaccine experiments raises important ethical questions for historians. We must confront the fact that these animals suffered prolonged periods of pain, stress, and discomfort, and that their quality of life was significantly reduced as a result. We need to confront the ethical implications and incorporate the overlooked animals existence in the history of global health research or other topics within science and medicine we are examining.

NAMRU-2's trachoma vaccine project on Formosa monkeys was a randomized clinical trial in the form of a double-blind study experimenting with a preventive solution to one of the causes of blindness in developing countries. Although NAMRU-2's vaccine trials still focused on the observation of the experimental monkeys, as those conducted by the Japanese medical zoologists had, the number of monkey subjects was much larger, and so this was no longer a case study; also, they all transformed into a sequence of quantitative numbers that could be easily

³⁶⁶ Wang and Grayston, "Pannus with Experimental Trachoma and Inclusion Conjunctivitis Agent Infection of Taiwan Monkeys," 107-119.

used for measurement. This explains how we see the monkey “number 13” being inoculated, documented, and photographed with severe infections after several months.

Dr. Phillips Thygeson, as a core member of the WHO Trachoma International Committee, recalled his experiences for continuing trachoma and other eye-related diseases research by building a monkey colony at Iowa since around-1950.³⁶⁷ In contrast to the NAMRU-2 captured the indigenous monkeys on Taiwan, Thygeson and his contemporary U.S. researchers had to order them overseas, “they cost about twenty-five dollars a piece. Now they cost several hundred dollars a piece.”³⁶⁸ He remembered that they used mostly sphinx baboons because they were the easiest to obtain. “The baboon was much more susceptible than the ordinary monkey... The apes are much more susceptible than monkeys to all the chlamydia [trachoma viruses].”³⁶⁹ When the interviewer Sally Hughes asked Dr. Thygeson if he had any explanation for the difference in susceptibility, he gave a simple but interesting answer-- “No, I don't. I guess they're more like humans.”³⁷⁰ His answer shows that the scientific distance from different animals to human and the measurement of human-animal relation.

Regardless, the NAMRU-2 team started to lose their confidence after a few years conducting this project, and admitted that they had difficulty in preventing experimental infections of humans or monkeys with a vaccine. They began to study the combined effect of a trachoma vaccine and antibiotic therapy on school children in three field trials located in Taichung and Chia-Yi county, in central and south central Taiwan.³⁷¹ The unpromising trial

³⁶⁷ Thygeson, 1987, p.48.

³⁶⁸ Ibid.

³⁶⁹ Thygeson, 1987, p.49.

³⁷⁰ Ibid.

³⁷¹ Grayston, et al., 1964

results on Formosa monkeys pushed the NAMRU-2 team to partly relinquish to its original optimism toward a global trachoma vaccination among children, as they turned to relying on the combination of antibiotic therapy and vaccination for children. However, in 1967, NAMRU-2 published their very detailed results on the low cure rate in field studies conducted between 1962–1964; in this case, the trachoma vaccine, combined with WHO and UNICEF eye ointment and administered to Taiwanese school children, eventually failed as an experiment.³⁷²

The trachoma vaccine research was only one among several infectious disease studies that mobilized the Taiwan monkey. According to a NAMRU-2 review article published in 1968, the second largest number of the postwar studies on the Taiwan monkey falls into the disease category; and sixty-three scientific papers listed were in the fields of parasitology and virology.³⁷³ By capturing the monkey subjects to the laboratory, they were enrolled in the NAMRU-2 research projects, besides the trachoma vaccine trials, such as the disease development of filariasis and Japanese encephalitis, the observation of malaria parasites found on the monkeys, or the attempt to inoculate monkeys by the experimental infections of leishmaniasis.³⁷⁴ Indeed, the experimental techniques developed during the second half of the nineteenth and the early twentieth centuries, have not only applied to vaccine production for

³⁷² Robert L. Woolridge, K.H. Cheng, I.H. Chang, C.Y. Yang, and T.C. Hsu, "Failure of Trachoma Treatment with Ophthalmic Antibiotics and Systemic Sulfonamides Used Alone or in Combination with Trachoma Vaccine," *American Journal of Ophthalmology* 63, no. 5 (1967): 551-557. doi 10.1016%2F0002-9394%2867%2994150-5

³⁷³ William H. Pryor Jr. & Gilbert L. Raulston, "A bibliography on the Taiwan monkey (*Macaca cyclopis*)," *Primates* 10, no. 1 (1969): 81–89. doi/10.1007/bf01730811, 81.

³⁷⁴ John E. Bergner Jr. and A. Leo Jachowski, Jr. *The Filarial Parasite, Macacacnema Formosana from the Taiwan Monkey and its Development in Various Arthropods*. Taipei: Naval Medical Research Unit No.2 Technical Report, June 6, 1968 (MR005.20-0098.58); Francis M. Morgan, Raymond H. Watten, and Robert E. Kuntz, "Post-Kala-Azar Dermal Leishmaniasis: A case Report from Taiwan (Formosa)," *Journal of the Formosan Medical Assoc.* 61 (mar 1962) :282-291; George Chin-Yun Lee, J. Thomas Grayston, and San-Pin Wang, "Protective Studies in Mice and Monkeys with an Inactivated Japanese Encephalitisvirus Vaccine Grown in Hamster Diploid Cell Culture," *Proc. Soc.Exp. Biol. Med.* (current Experimental Biology and Medicine) 125, issue 3 (July 1967): 803-808.

human diseases by using animal bodies but also provoked interspecies comparisons and discussions on the role of animals as human surrogates or experimental proxies in laboratories.³⁷⁵

Experiments, as Roger Cooter emphasized, have marked the character of modern medicine, and experimental animals have become a much-studied field that reveals the logic of modern science (Cooter 2011);³⁷⁶ and even if historically unacknowledged, experimental animals have actually contributed to the development of modern medicine.³⁷⁷

NAMRU-2's Boundary Work on Mapping the Taiwan Monkey: Identifying the Nativeness of *Macaca Cyclopis* through Text and Visual Materials

In contrast to many NAMRU-2 researchers who only briefly described the Taiwan Monkey in their method section, John E. Bergner Jr. and Leo A. Jachowski Jr. spent a whole 12-page section on the Taiwan Monkey/*Macaca Cyclopis* in their technical report to NAMRU-2.³⁷⁸ To introduce the characteristics of the Taiwan Monkey, the authors reviewed the scholarly literature in the areas of natural history and zoology. They cited general description of the Genus *Macaca* from the huge volume *The Mammals of China and Mongolia* that discussed the Central Asiatic expeditions and was published by the American Museum of Natural History in 1938, written by Glover Morrill Allen (1879-1942), a curator at the museum of comparative zoology at

³⁷⁵ William F. Bynum. 1990. "‘C’est une Malade!’ Animal Models and Concepts of Human Diseases." *Journal of the History of Medicine and Allied Sciences* 45 397–413; Jessica A. Bolker. 2009. "Exemplary and Surrogate Models: Two modes of representation in biology." *Perspectives in Biology and Medicine* 52 (4): 485–499.

³⁷⁶ Roger Cooter. 2011. "Medicine and Modernity." In *The Oxford Handbook of the History of Medicine*, edited by Mark Jackson, p5 of 22 (New York: Oxford University Press, 2011), 5. Doi: [10.1093/oxfordhb/9780199546497.013.0006](https://doi.org/10.1093/oxfordhb/9780199546497.013.0006)

³⁷⁷ Rachel Mason Dentinger and Abigail Woods. "Introduction to Working across Species." *HPLS* 40, 30 (2018), <https://doi.org/10.1007/s40656-018-0197-y>

³⁷⁸ John E. Jr Bergner and Leo Jr A. Jachowski. The Filial Parasite, *Macacacnema Formosana* from the Taiwan Monkey and its Development in Various Arthropods. Taipei: Naval Medical Research Unit No.2 Technical Report, June 6, 1968 (MR005.20-0098.58).

Harvard University. The NAMRU-2 researchers thus situated the Taiwan Monkey in the broader genealogy of Asian monkey species:

“Rather heavy-bodied monkeys, with short stout limbs, and variable tails, usually less than the length of head and body, but sometimes reduced to a mere stump. The nostrils open slit-like and downward. There is a pair of conspicuous callosités on the buttocks. These monkeys have cheek pouches in which food may be temporarily stored. The eyebrow ridges in the skull are very heavy, giving the face a beetling brow; the canines in the males are long, sharp, and strong with a groove on the outer face.”³⁷⁹

The NAMRU-2 researchers also attempted to demonstrate that the Taiwan Monkey/*Macaca Cyclopis*, as one of the *Macaca* family, is different from the “old world monkey,” representing the monkey species living in Asia, which is considered to be the new world. In order to do so, Bergner and Jachowski referred to the chapter “Old World Monkeys, Tailed Monkeys” by Johnson T. F. Chen (陳兼善, 1898-1988), a Chinese zoologist who arrived Taiwan in October 1945 with the Nationalist Chinese army and served as the chief-director (1945-1955) of the previous museum of natural history (Taiwan Governor's Palace Museum, 台灣總督府博物館) established by the Japanese colonial government in 1899.³⁸⁰

Furthermore, the NAMRU-2 researchers emphasized that “*Macaca Cyclopis* is the only monkey native to Formosa[Taiwan].”³⁸¹ While it is categorized under *Macaca* family tree, as

³⁷⁹ Glover Morrill Allen, *The Mammals of China and Mongolia* (New York; The American Museum of Natural History, 1938), 282.

³⁸⁰ Johnson T. F. Chen, “Old World Monkeys, Tailed Monkeys,” *A Synopsis of the Vertebrates of Taiwan*. Taipei: The Commercial Press, 1955), 537-543; Allen, “*The Mammals of China and Mongolia*,” 620. This colonial museum was renamed as Taiwan Province Museum (台灣省博物館).

³⁸¹ Bergner and Jachowski, “The Filial Parasite, *Macacanema Formosana* from the Taiwan Monkey and its Development in Various Arthropods,” 9.

they cited from the Chinese zoologist Johnson T. F. Chen that, “it is sufficiently different from other species of *Macaca* that occur in Japan, the Philippines, and mainland China to justify current status as a distinct species.”³⁸² To justify the uniqueness of the Taiwan Monkey, the NAMRU-2 researchers highlighted the unique physical traits with text and visual aids. The technical report attached a photo of one female Taiwan Monkey numbered FP-232 (see Figure 5.3), along with referencing a paragraph from Dr. Chen’s article:³⁸³

”The front limbs are longer than the rear. That it has a simple round stomach and a rather long, tough tail (300mm.). The Taiwan macaque has a round head, flat face, projected forehead, and dark, scarf-shaped moustache. It has long rather soft-wave like hair of dark slate brown color and very thick hair on the limbs which is almost black. The skin of the face and buttocks are light purple-greyish, the belly is white- greyish.”³⁸⁴



Figure 5.3: A picture of a female Taiwan Monkey captured and numbered as FP-232 by the NAMRU-2 research team (Bergner and Jachowski, 1968: 9).

³⁸² Chen, “Old World Monkeys, Tailed Monkeys,” 537.

³⁸³ A few Taiwan monkey pictures were attached in this NAMRU-2 technical report. However, except for the picture of the female monkey FP-232 (Figure 5-3), other pictures were all taken when the monkeys were being experimented.

³⁸⁴ *Ibid.*

Rather than illustrating monkey habitats and traps in Taiwan, the information NAMRU-2 provided was focused on mapping the distribution of certain parasites on the island. This NAMRU-2 technical report illustrated the geographical location of each single monkey trapped in Taiwan between July 1962 to May 1964, and specifically divided the total 277 monkeys by their filaria-positivity.³⁸⁵ The Taiwan Monkeys here in this study were considered as the hosts of tropical diseases rather than the research subject. The mapping of the distribution of the Taiwan Monkey was intended to visualize the distribution of the parasite for the scientific community.³⁸⁶

In 1969, a bibliography of *Macaca cyclopis* published by two NAMRU-2 veterinary scientists, William H. Pryor, Jr. and Gilbert Raulston, included a long list of studies related to the Taiwan Monkey, “the primate species in common research use.”³⁸⁷ To study and create a database for Taiwan Monkey studies, the NAMRU-2 had been collaborating with the National Taiwan University Medical School by developing the joint venture “Taiwan Monkey Center,” and also received assistance from the University of Washington Primate Information Center.³⁸⁸

In this review article, Taiwan Monkey studies are categorized into the areas of anatomy (72), diseases (63), physiology (17), and miscellaneous, such as review articles, and very few social behavioral studies (23). The papers cited in the bibliography include researchers and institutes ranging from the U.S., Japan, and Taiwan. While the NAMRU-2 researchers Pryor and Raulston covered works published during the postwar era (1955-1968), the earlier stage of the

³⁸⁵ In this research report, the authors further argued a sex difference between monkeys and their parasite positivity, while they did not explain why the trapped female monkeys would be easier to identified filaria than their male counterparts. The study also continued to examine if the possible mosquito species act as vectors by conducting experimental infections on monkeys.

³⁸⁶ Bergner and Jachowski, “The Filarial Parasite, *Macacanema Formosana* from the Taiwan Monkey and its Development in Various Arthropods”, 10.

³⁸⁷ Pryor and Raulston, “A Bibliography on the Taiwan Monkey (*Macaca cyclopis*),” 81.

³⁸⁸ *Ibid.*

colonial gaze on the Formosa/Taiwan Monkey before the postwar period are absent. There seems to be an intentional line drawn by the NAMRU-2 to separate itself from the former Japanese colonial sciences in Taiwan (1895-1945) and the much earlier British colonial exploration that “discovered” and “named” the Taiwan Monkey. In the next section, I will revisit the colonial essence of the scientific collection, naming, and writing practices regarding the Taiwan Monkey from the mid-19th to the mid-20th centuries.

The mid-19th century Encounter: Robert Swinhoe’s Imperial-Naturalist Collection and the Nineteenth Century British Discovery of the Taiwan Monkey

The works on history of the 19th century Western naturalists’ encounter with Asia help this chapter to contextualize the dominant naturalist thoughts and practices behind the animal investigators and collectors. It was a global travel that linked knowledge and materials, intellectual and the economic interests, the colonizers and the colonized, humans and animals. Fa-ti Fan’s pioneering book *British Naturalists in Qing China: Science, Empire, and Cultural Encounter* is one of the very early historical projects, that examined the “contact zone” and “borderland” in the 19th century Asia where the scientific collaboration emerged with the rise of global trades between British naturalists and local Chinese assistants in the influential European colonial power in both the political, economic, and intellectual dimensions.³⁸⁹

The process of how certain plant or animal species were “discovered” through the gaze of western world becomes an important topic for many Taiwanese historians. Some authors focus more on analyzing the indirectly colonial power operating during the naturalist scientific

³⁸⁹ Fa-ti Fan, *British Naturalists in Qing China: Science, Empire, and Cultural Encounter* (Cambridge: Harvard University Press, 2004).

practices, some trace the specific Western travelers, for example, the history of Robert Swinhoe and Li Xiande (李仙得, Charles William Le Gendre), and their naturalist writings, drawings, and photographs about Taiwan.³⁹⁰

Robert Swinhoe (1836–1877) was the British naturalist who “discovered” the Taiwan Monkey. He was also a Victorian colonial official who had been stationed at a treaty port in China from 1854 to 1873, and showing a great interest in zoology, ethnology, and natural history. As the historian Fa-ti Fan has illustrated, many nineteenth century British naturalists in Asia served as colonial officials for the empire.³⁹¹ As other contemporary British naturalists experienced, Swinhoe was able to conduct his 17 years of field work until 1874 during his colonial mission in different towns and cities, including places such as Hong Kong, Amoy, Shanghai, Hainan Island, and Taiwan. In March of 1856, Swinhoe took his first two-week trip to Taiwan, cataloging at least 93 new birds and 17 new mammals. Later, from June to July of 1858, he was assigned to serve as the British Empire’s interpreter in the search for two missing sailors in Taiwan. Regardless of the failed governmental mission, Swinhoe was still able to successfully record and collect many new specimens. For these European collectors, the colonial regimes helped individuals and collectives to accumulate economic wealth, colonial trophies, the pride of Western culture and scientific knowledge of the new colonial lands.

³⁹⁰Yu Jun Chien, “Revisit Contact Zone: Reviewing 19th century Taiwan from the interpretation of western travelers (1860-1885).” Master’s Thesis, National Chiao Tung University, 2012; Yui-tan Chang, “ying guo bo wu xue jia shi wen hou zai tai wan de zi ran shi diao cha jing guo ji xiang guan shi liao (The Natural History Survey of Taiwan by British Biologist Robert Swinhoe: Research Process and Relevant Historical Materials),” *Taiwan Historical Research* 1, no. 1 (1994): 132-151; An-Li Chang, “hsün ho (Robert Swinhoe, 1836-1877) ji qi bo wu xue yan jiu (Robert Swinhoe (1836-1877) and His Studies on the Natural History).” Master’s thesis, National Taiwan Normal University, 2020.

³⁹¹Fan, 2004.

An unequal but mutual interaction emerged between colonial empires and all the species, including humans, that were encountered in the colonies. For European collectors, the colonial regimes helped individuals and collectives to accumulate economic wealth, colonial trophies, the pride in Western culture, scientific knowledge, and understanding of the new colonial lands, and even the lands outside their colonial territory. This was during Swinhoe's visit in the 1850s, for instance.³⁹²

After officially being appointed the first British official in Taiwan in 1860, Swinhoe went on an animal specimen collection through the whole westside of the island, and this was only his third visit to Taiwan.³⁹³ From July to November of 1861, he stayed in the southwestern part of Taiwan, mostly in or near the city of Taiwanfoo (the current Tainan); later, he moved north to Tamsuy (the current Tamsui), a northwestern port city of Taiwan, where he stayed from December to May of 1862.

In his 1862 article "On the Mammals of the Island of Formosa (China)," Swinhoe reported that as far as he was aware, there was only one monkey species on the island of Formosa.³⁹⁴ It was during this third visit of Swinhoe's that the Formosan rock monkey was documented and named *Macaca cyclopis*. He had also presented a pair of Formosan monkeys to

³⁹² Colonial explorations see Keith Thomas, *Man and the Natural World: A History of the Modern Sensibility* (New York: Pantheon, 1983); Randy Malamud, *Reading Zoos: Representations of Animals and Captivity* (New York: New York University Press, 1998); Kathleen G. Dugan, "The zoological exploration of the Australian region and its impact on biological theory," in *Scientific Colonialism: A Cross-Cultural Comparison*, Nathan Reingold and Marc Rothenberg eds., 79-100 (Melbourne: Smithsonian Institution, 1981). During the process of species collections, some European settlers also encountered local menageries developed in ancient China, Egypt, India, and Central and South America, see Nigel Rothfels, *Savages and Beasts: The Birth of the Modern Zoo* (Baltimore: The Johns Hopkins University Press, 2002).

³⁹³ Before 1862, Swinhoe had already visited Taiwan twice. The first time was in March 1856 and a second time on a voyage of discovery which lasted a month. Robert Swinhoe, "Letter from Mr. Swinhoe," *Ibis* 4 (1862): 363-365.

³⁹⁴ Robert Swinhoe, "On the mammals of the island of Formosa (China)," *Proc. Zool. Soc. London* 42 (1862): 347-365.

the Society's Gardens, explaining that the Formosan species was physically distinct from the *Macaca rhesus* in India and the Assamese rhesus in Nepal due to features like its fur color, facial structure, and the length of its tail. According to Swinhoe, the Formosan monkey was different "from anything I can meet with in the British Museum,"³⁹⁵ further stating the following:

"[F]or I have frequently seen a Monkey seated on a rock by himself, chattering and crying merely for his own amusement and gratification. Whatever Mr. Waterton may say of the tree-loving propensity of Monkeys in general, it is very certain that this species shows a marked reference for bare rocks, covered only with grass and bush."³⁹⁶

According to the catalog of primates in the British Museum published in 1976, there were specimens collected from one female adult, one female juvenile, and two male juvenile Formosan monkeys that were officially archived between 1866 and 1868.³⁹⁷ The specimen includes samples of the monkeys' skin, skulls, skeletons, penises, and baculums. Historians have demonstrated that the European history of animal collection and its global trade had become more and more science-driven.³⁹⁸ European nations had shifted from royal and private menageries to scientific uses within the animal collections in the seventeenth and eighteenth centuries and the later emerging notion of the zoo, zoological garden and park since the beginning of the nineteenth century. Between European colonial powers and their Asian and African colonies, the explorers, travelers, scientists, colonial officials, and later the professional

³⁹⁵ Swinhoe, "On the mammals of the island of Formosa (China)," 1862, 350.

³⁹⁶ Swinhoe, "On the mammals of the island of Formosa (China)," 1862, 351.

³⁹⁷ P. H. Napier, *Catalogue of primates in the British Museum (Natural History)*. London: British Museum (Natural History), 1976.

³⁹⁸ Vernon N. Kisling, *Zoo and Aquarium History: Ancient Animal Collections to Zoological Gardens* (Boca Raton: CRC Press, 2001).

commercial entrepreneurs had become engaged and enrolled into the collection and trade in exotic species.³⁹⁹

In the summer of 1862, Swinhoe went back to England to work with the naturalists at the Ethnological Society of London, the British Association, and the Royal Geographical Society, and he was excited to share his Formosan “discovery” at the first meeting of Zoological Society in the coming November of 1862.⁴⁰⁰ In the China and Japan section of the World Exhibition of 1862 in London, an award-winning “Formosan Booth” was organized by Swinhoe based on his field work and specimen collections in Taiwan.⁴⁰¹ During the British colonial period, the Victorian Zoological Society of Australia developed a strong tie with the Zoological Society of London by sending local animals to England for research (de Courcy 2001:198). In southern and Southeast Asia, British colonial heritage was inscribed in the architectural design of the zoo facilities built in nineteenth century India, Nepal, and Myanmar (Burma) (Mullan and Marvin 1987; Walker 2001). Similar exploitative forms of trade in wild animals happened in other places as well, such as with Indochina and France and Java and the Dutch (Walker 2001).

³⁹⁹ Paula Findlen, *Possessing Nature: Museums, Collecting, and Scientific Culture in Early Modern Italy* (Berkeley: University of California Press, 1994); Martha Chaiklin, Philip Gooding, and Gwyn Campbell, eds., *Animal Trade Histories in the Indian Ocean World* (London: Palgrave Macmillan, 2020). The institutional historical works on zoos are sometimes criticized by being lack of critical analysis, see Erica Fudge, “A Left-Handed Blow: Writing the History of Animals,” in *Representing Animals*, Nigel Rothfels ed., 3-18 (Bloomington: Indiana University Press, 2002), and Rothfels, 2002, 18. Instead, critical historians contextualized the relationship between political power, cultural assumption, and academic constitution and specific historical individuals and organizational actors such as Carl Hagenbeck’s zoo empires, the San Diego Zoo, and the Zoological Society of London that developed from the early nineteenth century, see Lisa Uddin, *Zoo Renewal White Flight and the Animal Ghetto* (Minneapolis: University of Minnesota, 2015) and Adrian Desmond, “The Making of Institutional Zoology in London 1822–1836: Part I,” *History of Science* 23, no. 2 (1986): 153-85.

⁴⁰⁰ Philip B. Hall, “Robert Swinhoe (1836-1877), FRS, FZS, FRGS: A Victorian naturalist in treaty port China,” *The Geographical Journal*, 153, no. 1 (1987):37-47; Sophia Su-fei Yen, *Taiwan in China's foreign relations, 1836-1874* (Hamden: Shoe String Press, 1965).

⁴⁰¹ Official Catalogue of the Industrial Department - International Exhibition 1862 by International Exhibition on Industry and Art (London, 1862), 168. <https://www.bie-paris.org/site/en/1862-london>

The fact that ethnicity is an ongoing formation also resonates with the scientific work of these natural history scholars on various monkey species in Asia as an analogical reasoning to the ethnic boundaries and affinity. Unlike his colleagues in geography, Swinhoe was not fully convinced that the species in Taiwan were more like those in the neighboring islands of Japan and the Philippines; instead, he believed that there were similarities between the features of these species and con-generic Chinese forms. Swinhoe emphasized how the animals were brought to Taiwan through the human migration of the Chinese colonists, maintaining that of the Formosan rock monkeys “found on some of the small groups of Chinese islands, we shall find them identical.”⁴⁰²

The Eastern Empire Encounter: the Taiwan Monkey in the Japanese Medical Zoology and Racial/Ethnic Analogy, 1895–1945

In contrast to the U.S. diplomat and explorer James Wheeler Davidson (1872–1933) bestowed high praise for Robert Swinhoe’s research on the mammals of Taiwan 1903. He claimed, by contrast, that since Japan took over Taiwan, no zoological investigations had been launched on the island.⁴⁰³ While the first article published by Japanese zoologists about animals in Taiwan can be traced back to the year 1895, when Japanese colonialization first started. Indeed, this article was primarily a summary of Robert Swinhoe’s previous work in Taiwan. In an article, entitled “The Report of the Animals on Taiwan, the New Territory of the Japanese Empire,” which was published in the *Journal of Japanese Zoological Society* and written by Motokichi Namie (波江元吉, 1854–1918), there is documentation of 43 mammals, 177 birds, 45

⁴⁰² Swinhoe, “On the mammals of the island of Formosa (China),” 1862, 351.

⁴⁰³ James Wheeler Davidson, *The island of Formosa past and present* (Place of publication not identified: Macmillan, 1903), apx p. iii.

butterflies, and 171 mollusca in Taiwan.⁴⁰⁴ Namie also appreciated the previous work on Taiwan conducted by Swinhoe, which created a general framework from which the Japanese empire could further understand its colony and conduct additional scientific investigations on Taiwan. On this point, Namie stated the following:

The lights of the new academia and science will illuminate our empire; thus, we should make every effort to work on academia and science because it is such a huge mission.....I hope everyone will devote themselves to zoological studies, for building the empire and the academia as well.⁴⁰⁵

Namie's statement signifies the paradigm shift in the field of natural history from the Eastern tradition to the Western scientific system, which was imported in the nineteenth century into Japan after the country went through its "civilization" process of the Meiji Restoration. According to the historian NISHIMURA Saburō, the year 1868 marks the beginning of both the Meiji Restoration and contemporary Japanese natural history.⁴⁰⁶ The Meiji administration established not only government-owned institutions for the collection of natural history, but also implemented a higher educational system modeled after those of the European countries, with Germany having the most influence in this respect.

Compared to the existing research on European colonial naturalists' activities in Asia, there has been growing interest among Taiwanese and Japanese historians since the late 1980s in

⁴⁰⁴ Motokichi Namie, "Mika doku nishinri youchitaiwandoubutsuihou (The Report of Animals in Taiwan, the New Territory of Empire)," *Dobutsugaku Zasshi (Zoological Magazine)*, 82 (1895): 265-298.

⁴⁰⁵ Namie, 1895, 266. In this section, I have translated all the quotations from Japanese into English.

⁴⁰⁶ Saburō Nishimura, *Bunmei no naka no hakubutsugaku: Seiō to Nihon* (Tōkyō: Kinokuniya Shoten, 1999). Also see the introduction of Nishimura's work from Yen-Chiou Fann, "Taiwan Natural History Society in the Early Period of Japanese Colonial Rule — Japanese Naturalist and Construction of Taiwan Natural history," *Bulletin of Taiwan Historical Research* 5 (2012):3-39.

studying Japan's role as a rising empire in the mid-nineteenth century. Japan, guided by the concept of scientific colonialism, focused on collecting, studying, and classifying life forms in its overseas colonies.⁴⁰⁷ As those works focus on the Western travelers' traces in written or visual forms on Taiwan, many share the similar approach in examining the characteristic of Japanese naturalists and colonial government and their relation to the Western natural history, the former Japanese view on natural history, and the tropical colony Taiwan.⁴⁰⁸ Wen-Chi Chen illustrates the passion of Japanese naturalists about bringing practical modernization plans for the colony. By unpacking the institutionalization of the Natural History Society of Formosa in the early 20th century Japanese ruled Taiwan, Yen-Jui Fan demonstrated that the institutionalization of museums, research institutes, and academic society and journals, was a crucial historical shift of Japan during the 1868 Meiji Restoration from its traditional herbology to the Western form of natural history.⁴⁰⁹

Among several topics that Japanese naturalists were interested in, Taiwanese historian Li-Jung Cheng focuses on Japan, as an empire, its animal trade, collections, circuses, zoos, and zoological gardens in colonial Taiwan in the early 20th century.⁴¹⁰ She states that while there

⁴⁰⁷Wen-hsing Wu, "dong jing di guo da xue yu tai wan xue shu tan jian diao cha zhi zhan kai," *tai wan shi yan jiu yi bai nian: hui gu yu yan jiu (100 Years of Taiwan History Research: Review and Study)*, Huang Fu-san Huan, Wei-ying Gu, and Chai-Hsio Tsai (eds.), 23-40 (Taipei: Institute of Taiwan History, 1997); Sayaka Shimoinaba and Masatoshi Yasuda, "The first mammalogical society in Japan and the two pioneer mammalogists, Nagamichi Kuroda and Kyukichi Kishida," *Honyurui Kagaku (Mammalian Science)* 58, no. 1 (2018):161-174.

⁴⁰⁸ Wei-chi Chen, 1998 and 2009; Yong-Hua Wu, *Bei yi wang de ri ji tai wan dong wu xue zhe (The Forgotten Japanese Researchers of Taiwan Animals)* (Taipei: Morning Star, 1996); Ming-Sheng Lin, "On the Naturalist of Taiwan Governor-General's National Language School," *Taiwan Natural Science* 35, no.1 (2016): 6-19; Hirotsugu Ono, "Revision of spider taxa described by Kyukichi Kishida: Part 1. Personal history and a list of his works on spiders," *Journal of Arachnology* 33 (2005): 501-508.

⁴⁰⁹ Yen-Chiou Fann, "Taiwan Natural History Society in the Early Period of Japanese Colonial Rule — Japanese Naturalist and Construction of Taiwan Natural history," *Bulletin of Taiwan Historical Research, NTNU*, no. 5 (2012): 3-39.

⁴¹⁰ Li-Jung Cheng, *Wenming de yeshou: cong yuan shan dong wu yuan jie du jin dai tai wan dong wu wen hua shi (The Civilized Beast: Interpreting Modern Taiwan's Animal Culture from the Perspective of the Yuan-Shan Zoo)* (Taipei: Walker, 2020), and her "kuahai yanchu: jindai taiwan de maxituan biaoyanshi (1900~1940 niandai) (Cross-

were a few Western investigators who came to Taiwan conducting zoological documentation or animal collection, they were usually driven by personal interests. In contrast, the later Japanese colonial government had shifted the investigation of Taiwan from the earlier stage of those single projects conducted by British and American individuals and their informal connection to the locals into a stage of systematic, government-directed plans launched by the Japanese colonial government. Cheng points out another crucial feature of Japanese colonialism and its development of zoology is that, the colonality is always combined with hierarchy. In the case of Japan's animal collections in colonies such as Korea and Taiwan, the collected animal specimens often sent back to the western museums or research institutes.

In the summer of 1899, another famous Japanese zoologist by the name of IIJIMA Isao (飯島魁, 1861–1921) travelled to the southern part of Taiwan to collect specimens of animals, including buffalo, birds, butterflies, and Formosan monkeys. Iijima had presented his findings at their annual meeting held at Tokyo Imperial University in the fall of 1899. On this occasion, Iijima talked about the similarity between the species in Taiwan and those found on the islands of Okinawa, Japan. Regarding the Formosan monkey he encountered during the trip, Iijima wrote the following:

“In the southern part of Taiwan, the aborigines drew a bow to capture the Formosan monkeys (*Macacus cyclopis*), which lived collectively on the Banyan branches and showed up as a group. The monkeys escaped and ran so fast that we could barely

Sea Performances: A History of Circus Performances in Modern Taiwan (1900-1940s),” *National Central University Journal of Humanities*, no. 43 (2010): 1-46.

recognize them because we only saw their shadows and heard the sounds while they escaped.”⁴¹¹

Along with Iijima’s field report, there were a few other Japanese investigations and review articles about Taiwan before and during the early colonial period that tangentially addressed the Formosan monkey as well. These investigations are known for helping the Japanese empire to understand the island it won from China after the First Sino-Japanese War in 1895. They were published in different forms, such as articles, reports, books, and academic speeches. Although they were not specifically written for the purpose of colonial science, many authors did also have a scientific background or interest in introducing Taiwan’s physical geography of the late nineteenth century, including its topography, plants, and animals. For instance, UENO Senichi (上野専一, unknown birth and death year), a diplomat of the later Consul-General of the Japanese Empire beginning in 1908. In Ueno’s field report, it was written that Formosan monkeys were often observed in the mountain, along with other “beasts,” such as bears, wolves, and lepers. In general, the authors argued that the animals in Taiwan were different from those in China as a result of geological separation from Mainland China.⁴¹²

Instead of documenting or reporting with words, some Japanese zoologists began their scientific work with collecting animal specimens for Westerners. By December of 1919, Yoneraro Kikuchi (菊池米太郎, 1869–1921) had collected the skull of a Formosan monkey from the Puli village of Nantou, which is surrounded by mountains in the central part of Taiwan.

⁴¹¹ Tōkyō Dōbutsu Gakkai, “Tōkyō dōbutsu Gaku-kai kiji (The Notes on Tokyo Zoological Society),” *Dobutsugaku Zasshi (Zoological Magazine)* 11, no. 133 (1899): 325-327, 327.

⁴¹² Nekketsu Takei, *Honori Hanshouki*. (Japan: Honju Shinjudo, 1911), 13. Kanpō (Japanese government gazette) Aug 7, 1908; June 14, 1913; Sep 21, 1912. Tokyo, Ōkurashō Insatsu-kyoku (National Printing Bureau, Ministry of Finance). Digital collection at National Diet Library, Japan.

Kikuchi was not just a zoologist and colonial officer in Taiwan; he was also the collector working for Alan Owston, a famous British merchant, animal specimen collector, and dealer who lived in Yokohama, Tokyo, during the Meiji Restoration from 1868 to 1915.⁴¹³ The monkey skull, which was already dried, was finally bought back to the Japanese naturalist community in the early 20th century and documented by KURODA Nagamichi (黒田長禮, 1889–1978) in 1925.⁴¹⁴

The 1920s signified a much more fruitful era for Japanese zoologists. These Japanese zoologists also benefited from Japan being the most powerful empire in the early twentieth century Asia during its ongoing military intervention in Siberia and the Russian Far East.⁴¹⁵ Between 1922 and 1927, KISHIDA Kyukichi (岸田久吉, 1888-1968) had regularly published articles on the introduction of current animal research in Japan in the journal of the Zoological Society of Japan (動物學雜誌, Zoological Magazine, aka Dobutsugaku Zasshi).⁴¹⁶ Kishida's review reveals how Japanese researchers gradually came to, not just citing the works from western naturalists, but to be able to systematically document a bibliography by their own collection, identification, and taxonomy of animal species from Hokaido to Okinawa and from Korea to the southern edge of the empire in Taiwan.⁴¹⁷ Research on animals in Taiwan spanned

⁴¹³ Shin-ichiro Kawada, "Biographic Review of Alan Owston," *Journal of the Yamashina Institute for Ornithology* 47 (2016): 59-93, 59; Shin-ichiro Kawada and Masatoshi Yasuda, "The relationship among the collector, merchant and collection owner, puzzling out the specimen tags," *The Mammal Society of Japan* 52, no. 2 (2012): 257-264, 257.

⁴¹⁴ Nagamichi Kuroda, "Description of a New Species of the Genus *Mus* from Formosa," *Dobutsugaku Zasshi (Zoological Magazine)* 37, no. 435 (1925):1-16, 15-16.

⁴¹⁵ Nagamichi Kuroda, "Nippon ho ni yuudoubutsumanabu no ranshou naminienkaku," *Dobutsugaku Zasshi (Zoological Magazine)* 54, no. 11 (1942): 442-453, 445.

⁴¹⁶ According to Kishida's documentation, there were 533 research papers and governmental reports on the animal species within the territory of Japan. Most of the studies were released during the 1920s and conducted by Japanese scholars.

⁴¹⁷ For Japanese mammal research, 1910 was already breakthrough year. The beginning of Japanese mammalogy can be dated back to several articles on translating the current Western understanding of mammals and the discussion about the collection of mammals in Japan and its distant territories. Animal research in the areas of Okinawa and

the fields of anthropology and ethnology, natural history, agriculture, and medical science during the 1920s.⁴¹⁸

The Racial/Ethnic Analogy Embedded in the Japanese Field Observations of Formosa/Taiwan Monkeys

In the ethological and anthropological works, the Formosa/Taiwan monkey was applied as a racial analogy for the characteristics of the indigenous people in Taiwan. In the Taiwan Tsushin (台灣通信), the 19th report on the field trip on Taiwan published in the *Journal of Tokyo Anthropology* (東京人類學會雜誌), INO Kanori (伊能嘉舉) documented his field work in October 1896. On October 18, Kanori moved south, close to a mountain near the Su'ao Pier, which was known for having fierce aboriginal tribes on the other side among Chinese immigrants who had gone into the forest to cut wood for a living. Based on his Chinese informants' account, the tribes that had attacked and killed outsiders coming into the forest were “strong like monkeys, fast like monkeys.”⁴¹⁹ Under the gazes of both the Chinese and Japanese colonizers, the native tribe people in Taiwan were associated with monkeys, which indicated that

Hokkaido represented the border of the Japanese empire and echoed those colonial investigations conducted in Taiwan and Korea. Some pioneering research includes field studies on the impact of the introduced mongoose in the subtropical Okinawa islands by WATASE Shozaburo (渡瀬庄三郎, 1862–1929) and the Japanese wolf collection in the Subarctic Hokkaidō area by HATTA Saburo (八田三郎, 1865-1935). See Shozaburo Watase, “Tonakijima no 'Mangūsu' Hansho kusu,” *Dobutsugaku Zasshi (Zoological Magazine)* 23, no. 269 (1911): 109-110; and Kayo Umeki, “A Study of Wolf Hunting by Hokkaido Ainu,” *Hokkaido Journal of Ethnology* 16 (2020): 39-57.

⁴¹⁸ Throughout the more than 500 publications reviewed by Kyukichi Kishida in the 1920s, there are 94 articles and reports about animals in Taiwan published by mostly Japanese scholars and a few Western naturalists in the colonial governmental reports or academic journals of Taiwan, Japan, U.S., and Germany. Among these different fields of studies conducted by Japanese researchers, the scientific observation has played a crucial role. Indeed, the most frequently seen investigations were conducted by naturalists who documented, drew, named, and categorized the new species they found. The species varied from fish, birds, insects, to mammals, and were collected from different parts in Taiwan extending from its coast to the mountains. Regarding agricultural reports, in general, the researchers observed the damage of insects on colonial economic plantations and farming.

⁴¹⁹ Kanori Ino, “Taiwan Tsushin, No.19,” *Journal of Tokyo Anthropology* 12, no. 137 (1897): 415-426, 422.

they were culturally closer to animals instead of humans because of their characteristic of being “uncivilized,” and the uncivilized were also connected to the diseased.

Another Japanese anthropologist, TORII Ryūzō (鳥居龍藏), published his field survey on seven aboriginal tribes on the east coast of Taiwan, whom he had observed from August to December of 1896. This was a task that was assigned by the Imperial University (帝国大学, Taikoku) of Japan. By studying aboriginal cultures, rituals, and physiques, the Japanese anthropology study aimed at identifying “the hierarchy of the civilization level” (開化の位置) among the tribes.⁴²⁰ Before describing how the tribal individuals were often comfortably naked or wore clothes made and woven by plants that were often comparatively revealing, the author began by tracing the biological connection and cultural similarity between tribe folks (土人) and apes (人類猿), which was attributed to their nudity. It seems that the indigenous people in Taiwan were considered to be culturally and biologically much closer to monkeys and apes, and thus less relevant to the Japanese or Chinese colonizers as a result.

In May, 1907, the Japanese magazine, *World of Adventure* (探險世界) published an article “The Language of Animals” which described how five Japanese monkeys (日本猿) and one Formosa/Taiwan monkey (臺灣猿) teamed up to fight against a new monkey resident (新入猿) in the zoo located in domestic Japan.⁴²¹ In contrast to the Japanese monkeys are portrayed as timid and physical small. The Formosa monkey is described as physically huge, violent, and wild. In this article, the author mentions they did not get along until a new monkey came, while

⁴²⁰ Ryūzō Torii, “Toubu taiwan shiyobanzokunishute,” *Journal of Geography (Chigaku Zasshi)* 9, no. 9 (1907): 397-491.

⁴²¹ Yoshitarō Kurokawa, “Dōbutsu no gogon (The Language of Animals),” *Tanken sekai (World of Adventure)* 3, no. 3 (1907): 178-179.

the further information of this newcomer was not provided. The article describes the unification of the Japanese and Formosa monkeys, and how they organized as a family together throughout the fierce fight. This story illustrates not only the association between Monkeys and human in different ethnic categories but also the early-twentieth century Japan's goal for building a strong empire through unifying the uncivilized but tough population on its colonies.



Figure 5.4: “Formosa Monkey and Japanese Monkeys together attacking the New Monkey resident (臺灣猿日本猿聯合して新人猿を攻撃す), Korokawa, 1907, p.178.

Later in 1929, a field study on the distribution and habits of mammals in Taiwan was published by Japanese naturalist TADAO Kano (鹿野忠雄, 1906–1945) based on his three-year field work on the whole island, especially the mountainous part, where he spent time hunting and living with the indigenous tribe people.⁴²² Among the 26 species in Tadao's paper, the first is the Formosan monkey; he had encountered five or six of them playing together on the branches of

⁴²² Kano Tadao, “Taiwan-san honyūru no bunpu go u shūse (The Distribution and Behavior of the Mammals of Taiwan),” *Dobutsugaku Zasshi (Zoological Magazine)* 41, no. 489 (1929): 332-340.

tropical trees on the East Coast, and another time, he bumped into a group of fifty Formosan monkeys with a tribe in Southern Taiwan. Along with Tadao's research interest in the indigenous cultures of Taiwan, the Formosan monkey was uniquely situated in relation to both the natural environment and human societies; the Formosan monkey could be a food resource, a clothing material, or a religious sacrifice to different tribes. The monkey was named differently as well, according to Tadao's observation; for example, the Formosan monkey was called "Yogai" by the Taiyal tribe, "Rungai" by the Sazekk tribe, and "Futton" by the Bunun tribe. The comparison of the civilized people and the "barbarian" others was not only revealed by the European colonizers' relation to their oversea colonies but also by the political contestation among European empires as well as how Japanese empire distinguished itself from other parts of Asia.

The medical studies that used Taiwan's animals in the 1920s were comparatively rarer compared to the former two types of works. Nevertheless, some of the medical and agricultural fields were launched by the Taiwan Government-Central Research Institute (Chūō kenkyūjo 中央研究所, 1909–1939). Although the medical studies seemed to no longer go into the "field," the experiments they conducted inside the laboratories were still significantly dependent on observation of the animals previously collected by the naturalists. The medical scientists documented their observations of the processes of an infectious disease developing or a parasite growing in experimental animals such as rodents and monkeys.

Medical research involving animal species in colonial Taiwan was intertwined with the development of parasitology and tropical medicine in the early-twentieth-century Japanese empire. In his investigation of the colonial laboratory of medical zoology (医動物学研究室) in Taiwan, historian Akihisa Setoguchi argues that prewar Japanese parasitology was part of

zoology rather than a medical discipline.⁴²³ By focusing on a 1920s research project on hookworm disease in Formosan monkeys conducted by MORISHITA Kaori (森下薫, 1896-1978), this chapter agrees with Setoguchi's statement and further suggests that it was animal species such as the Formosan monkey that demonstrated the intersection of the different academic disciplines. In December of 1923, Morishita left his research position at the Kitasato Institute (北里研究室), joining the laboratory of medical zoology founded by a former Kitasato researcher Koizumi Makoto (小泉丹, 1882-1952) within the Taiwan Government-Central Research Institute in Taiwan.⁴²⁴ During their days at the department of zoology at Tokyo Imperial University, Koizumi and Morishita were both students of Iijima Isao (飯島魁, 1861-1921) who studied parasitology and morphology under Rudolf Leuckart (1822-1898) at the University of Leipzig.

In contrast to most Japanese naturalists who usually published their findings in journals in Japan or Germany, Morishita chose to share his observations of a species of roundworm from one Formosan monkey in the *Journal of the Formosan Medical Association* in Taiwan, which has been published since 1902. Although the scene had shifted from mountains to a lab, Morishita's method was still like that of his contemporary zoologists and agricultural animal researchers. That is, they all emphasized the significance of observation, and their research was usually based on a small number of cases, no matter whether it was the species they observed in

⁴²³ Akihisa Setoguchi, "Control of Insect Vectors in the Japanese Empire: Transformation of the Colonial/Metropolitan Environment, 1920-1945," *East Asian Science, Technology and Society: an International Journal* 1 (2007):167-181.

⁴²⁴ The Emeritus Committee for Professor Morishita Kaori (eds.), *Commemorative Issue In Honor of Emeritus Professor Morishita Kaori* (Osaka: The Emeritus Committee for Prof Morishita Kaori, 1961). Satoru Kamegai, "Morishita kaori sensei to meguro kise ichi yuukantokushuugou (Special Issue in Memorial of Dr. Morishita Kaori)," *The Meguro Parasite Museum News* 132 (1978): 1-16.

the field or in the lab, usually through texts or illustrations.⁴²⁵ This tendency might have been based on his academic training in medical zoology and the earlier parasitology at the Kitasato Institute after completing his degree in zoology at Tokyo Imperial University in 1921.⁴²⁶ In fact, the intestine of the Formosan monkey Morishita received was from Sadamu Yokogawa (橫川定, 1883–1956), the so-called founder of the colonial education of parasitology.⁴²⁷

Both Yokogawa and Morishita stayed in Taiwan, remaining in their teaching and research positions in the department of parasitology after WWII. In 1933, when Morishita went back to Japan for the 7th conference on Japanese microbiology as a representative of the Taiwan Government-Central Research Institute, he also shared his understanding of malaria parasites based on his observations of the Formosan monkey in Taiwan.⁴²⁸

Rather than simply taking a colonial diffusion approach, the social network of academia—which has involved competition and collaboration between historical actors within domestic Japan—might help us to reconsider the development of research using the Formosan monkey as an experimental animal in colonial Taiwan. By examining the competition between

⁴²⁵ In May 1912, Sadamu Yokogawa was appointed to assistant professor at Taiwan Medical College of the Taiwan Government General (臺灣總督府醫學校), the first medical training facility in colonial Taiwan created in 1899. The name had been changed in 1922 into Taihoku Medical College of the Taiwan Government General (臺灣總督府臺北醫學專門學校) until 1936, when it merged into the Medical School of Taihoku Imperial University and became was transformed into an affiliated medical institute of the Taihoku Imperial University (臺北帝國大學附屬醫學專門部).

⁴²⁶ Kamegai, 1978.

⁴²⁷ See Kaori Morishita, “Note on an Ankylostome Nematode (*Globocephalus asmilius*), from the Formosan Macaque,” *Journal of the Formosan Medical Association* 249 (1925): 1-5, and Jung, S.-M & Chang, S.-C., “Multum in parvo: The scientific practice and parasitology research by Sadamu Yokogawa in Taiwan,” *Chung-Hsing Journal of History* 29 (2014):63-92. Yokogawa’s lab had an English name “Department of Experimental Pathology and Parasitology” for the international scientific community. Yokogawa and his lab became the foundation of the parasitology department in the Taihoku Imperial University since 1936 the reformation of the educational system in the colonial Taiwan.

⁴²⁸ Anonymous, “Daishi chikai Rengō Bisei butsu gaku-kai yōshi nami mi tsuika tōron (The Summary of the 7th Meeting of the Japanese Bacteriology Society),” *Japanese Journal of Bacteriology* 447 (1933): suppl 588-597.

two prestigious research institutes in Japan from 1899 to 1914, the historian Shiyung Liu questioned the diffusionist approach, arguing that the development of colonial medicine in Taiwan was an unintended result of the 15-year rivalry with academia.⁴²⁹ Liu suggests that the early 20th-century Japanese medical society was not a cohesive community, but rather divided into two main groups: the Kitasato Institute network and Tokyo Imperial University. These groups competed with each other for limited resources within Japan. Eventually, Tokyo Imperial University emerged as the dominant force in the Japanese medical society. As a result, many medical scientists associated with the Kitasato Institute network relocated to Taiwan between 1899 and 1914. Many of them decided to move to Taiwan because they were close to the current governor Goto Shipei (後藤新平, 1857–1927), who was known for developing the rubric of scientific colonialism. Among those colonial researchers who moved to Taiwan, Takagi Tomoe (高木友知, 1885–1943) was a critical player in being fully authorized to design the medical institution, public health administration, and infectious disease prevention initiatives in colonial Taiwan.⁴³⁰ Tomoe was also the founder of the Formosan Medical Association and its journal, in which Morishita's Formosan monkey research, mentioned earlier, was published.⁴³¹ Moreover, Tomoe began to recruit former researchers from the Kitasato Institute to Taiwan to conduct research during the 1910s.

Along with Morishita Kaori's strong connection to the Kitasato Institute, one of his advisors, MIYAJIMA Mikinosuke (宮島幹之助, 1872–1944), was also an official director of several imperial field surveys overseas during 1904 and 1905 for projects such as malaria on the

⁴²⁹ Shiyung Liu, "The Ripples of Rivalry: The Spread of Modern Medicine from Japan to its Colonies," *East Asian Science, Technology and Society: an International Journal* 2 (2008):47–71.

⁴³⁰ Tsurumi Tasukuho, *Goto Shinpei* (Tokyo: Kubiso shoten, 1985), 361.

⁴³¹ Morishita, 1925, 1-5.

Malay islands, health and Japanese migration in Brazil, and tropical diseases in Taiwan, which were launched by the Committee on Taiwanese Endemic Diseases and Epidemics (台湾地方病及伝染病調査委員会) of the colonial government.⁴³² As a significant figure of the Kitasato Institute and the education on zoology and parasitology in Japan, Miyajima also moved to Taiwan during the conflict with Tokyo Imperial University.⁴³³ In the introduction of *Animals and Human Lives* (動物と人生) (1913), Miyajima writes about the intimate relationship between animals and humans when it comes to the aspect of health:

“Today, experimental medicine is able to achieve such a huge improvement, and we the humans should be thankful to the animals. The reason why the prevention and treatment of infectious diseases have been gradually available is because we are able to study the diseases by transferring the pathogens and viruses to the animals.”⁴³⁴

By combining his interests in parasitology and experimental animals, Miyajima was a pioneer researcher in his use of Formosan monkeys in the early twentieth century in the investigation of tropical diseases such as typhus, malaria, and trachoma.⁴³⁵ In 1909, Miyajima, with another researcher EGUCHI Tsu Chūzō (江口忠三) conducted an experiment on the transmission of trachoma among animals by observing the change of two types of monkeys—long tailed macaque of domestic Japan (日本尾長猿) and the Formosan monkeys—after

⁴³² Mikinosuke Miyajima. *The Tropical Diseases on Malay Peninsula Investigation* (Tokyo: Trade Policy Bureau, Ministry of Foreign Affairs, 1914).

⁴³³ Monaka Shimonaka, *Nihonjin Meidai jiten* (Tokyo: Heibonsha, 1979), 9-10.

⁴³⁴ Mikinosuke Miyajima, *Dōbutsu to jinsei (Animals and Human Lives)* (Tokyo: Nanzando, 1913), on introduction.

⁴³⁵ Mikinosuke Miyajima and Chūzō Eguchi, “The First Report on the Study of Trachoma Pathogen(トラホー ム病原ノ研究(第一報告)),” *Japanese Journal of Bacteriology* 178 (1910): 695-724; Kitasato Institute Alumni Association, “The Memo on the 17th Kitasato Institute Alumni Meet (第十七回北里研究所同窓會記事),” *Japanese Journal of Bacteriology* (1916): suppl 643-671; Mikinosuke Miyajima and Tachū Okumura, “Comparative study of red worms and chironomid species from Japan, Korea, and Taiwan.” *Japanese Journal of Bacteriology* 266 (1917): 893-908.

injecting them with the trachoma “virus” for nine days. The Formosan monkey was later discussed by Miyajima in the chapter on monkeys (猿之卷) in *Animals and Human Lives*. Here, Miyajima remarked that “the indigenous monkey species in Taiwan is smaller than the Japanese monkey. Although Formosan monkeys usually have thin hair, it gets thicker when moving them to live in domestic Japan, and they adjust to the cold weather very quickly.”⁴³⁶ Miyajima also describes monkeys as the most crucial species among the experimental animals for medical science when studying pathology and the treatment of infectious diseases because they are the closest species to humans.⁴³⁷

Coloniality Continued: the NAMRU-2 Commander Robert Kuntz’s collection and NAMRU-2’s Southbound Geomedical expedition to North Borneo

Although the NAMRU-2 seemed to be less interested in natural history as the previous British and Japanese colonial agents, the species collection, including the Taiwan Monkey, still continued to be one of its crucial projects on tropical diseases. From disease epidemics documented in history, we have seen how war, global trade, and colonialism accelerated epidemics such as tuberculosis, malaria, and bubonic plague, transmitted and circulated across species, between humans and animals, resulting in severe consequences on health, the economy, social inequalities, and on shaping the global colonial hierarchy.⁴³⁸ Along with those suffering from the diseases, many other creatures became the subject of historical analysis due to symbolic

⁴³⁶ Miyajima, 1913, 7.

⁴³⁷ Miyajima, 1913, 19. Before the end of WWII, at least 15 research papers were written based on the Formosan monkey as the experimental subject, and most were about the common infectious diseases in the Japanese empire, such as typhoid, dysentery, trachoma, and Japanese encephalitis.

⁴³⁸ Cassidy et al. 2017; Anne Hardy, “Animals, disease and man: making connections,” *Perspectives in Biology and Medicine* 46 (2003): 200-215; Abigail Woods and Michael Bresalier. “One Health, Many Histories.” *Veterinary Record* 174 (2014): 650–654; Dentinger, 2016.

meanings derived from the social perception of diseases. Consider rats, for example. The cultural connection between rats and diseases is deeply embedded in our society, which partly results from the long tradition of historical and archaeological research on the role of rats and rodents in global history: their impact on individual bubonic plague epidemics and as disease carriers.⁴³⁹ Or consider the conception of the microbe as an enemy of health that is deeply embedded in our contemporary society, a conception which derives not just from scientific works but also from the sanitary and personal hygiene practices developed in female-targeted commercials, education, and middle-class households.⁴⁴⁰

Ten years after NAMRU-2 started its operation in Taiwan, this research facility for tropical diseases had come to be recognized as one of the world's major suppliers of animal specimens in the mid-1960s. For example, bird lice were sent to the British Museum in London, roundworms went to McGill University in Montreal, and lung mites from snakes were supplied to a research institute in Kuala Lumpur. According to *Taiwan Today* on July 1st, 1971, more than 2,500 wild and domestic birds had been catalogued and shipped abroad, as had thousands of fish and reptiles.⁴⁴¹

The largest number of mammals, birds, and reptiles were sent to the Smithsonian Institution in Washington, D.C. A wide variety of micro-organisms were also delivered to

⁴³⁹ Peregrine Horden, "Mediterranean Plague in the Age of Justinian," in *The Cambridge Companion to the Age of Justinian*, by Michael Maas (ed.), 134-160 (Cambridge: Cambridge University Press, 2005); Monica H. Green, "'Taking "Pandemic" Seriously: Making the Black Death Global," *The Medieval Globe* 1, no. 1, (2014): 27-62; Christos Lynteris, *Ethnographic Plague—Configuring Disease on the Chinese-Russian Frontier* (London: Palgrave Macmillan, 2016).

⁴⁴⁰ The American history of the origin of "germ consciousness" see Nancy Tomes, *The gospel of germs: Men, women, and the microbe in American life* (Cambridge: Harvard University Press, 1999). The conception of the notion hygiene associated with disease epidemics at the treaty port involved multiple foreign colonial powers in the late 19th- early 20th centuries China see Rogaski, 2014.

⁴⁴¹ "Fighters against tropical disease," *Free China Weekly*, July 01, 1971.

medical schools and research institutions, as the University of Nebraska wanted tape worms, and Howard University needed the acanthocephalans. Later, in 1975, the U.S. Interior Department announced that about 35% of the world's monkey species were threatened by extinction because of human activities such as war, farming, and medical research, and the Taiwan Monkey was also on that list.⁴⁴² Since 1972, the export of monkeys from Taiwan has been officially forbidden as part of Taiwan's legal prohibition of the wildlife trade.

During the period of 1959-1962, the Parasitology Department at the NAMRU-2 persistently dispatched a list of specimen identifications for the Division of Mammals of the U.S. National Museum. Documented by Commander Robert E. Kuntz, Medical Service Corps and Head of the Parasitology Department at the NAMRU-2,⁴⁴³ this list was regularly updated every three or six months, thanks to Dr. David H. Johnson, Curator of the Division of Mammals of the U.S. National Museum.⁴⁴⁴ This collection was one part of the U.S. Navy's broad program in parasitology,

“which supports activities that will provide basic information on the zoogeography, host-parasite relationships, and reservoir host potentials for diseases of man and animals in Taiwan and southeast Asia. Studies were initiated also to provide parasitologists of

⁴⁴² “World's Monkeys Periled by Man's Ways, U.S. Says. (1976, Apr 20).” *Los Angeles Times (1923-1995)*. ProQuest Historical Newspapers: Los Angeles Times pg. A2.

⁴⁴³ Thomas M. Rivers Papers, Mss.B. R52, Box 8, folder 1, American Philosophical Society Library. Commander Robert E. Kuntz entered the US Navy in 1943 and was sent to the South Pacific area with a Malaria Control and Epidemiology team. In 1945, he joined the staff of US Naval Medical Research Institute, Bethesda, Maryland to make studies in schistosomiasis with emphasis on snail control. From 1948 to 1953, he was assigned to US Naval medical research unit 3 in Cairo, Egypt. Upon return to the states in 1953 commander Kuntz was assigned to the US Naval medical school at Bethesda, Maryland as head of the Dept of Parasitology until 1957 when was transferred to NAMRU-2 in Taiwan.

⁴⁴⁴ Myers Betty J. and Robert E. Kuntz, “Nematode Parasites from Mammals Taken on Taiwan (Formosa) and its Offshore Island,” *Canadian Journal of Zoology* 42 (1964): 863-868, 868.

America with comparative materials from geographic areas in which there have been limited collecting activities by westerners.”⁴⁴⁵

Commander Kuntz’s field book shows detailed information for identification, including the specimen numbers, identification, and the locality. The Taiwan Monkey was one of the species in this collection. According to Kuntz and his colleague Betty J. Myers, the animals were trapped or captured alive if possible. However, “some were shot, but many were obtained with the assistance of semiprofessional collectors or with the help of indigenous peoples in the areas where field parties were working.”⁴⁴⁶ We do not know exactly the information regarding the local collectors from Kuntz’s documentation, but we can conclude that some Taiwan Monkey specimens were probably bought from the pet shop in Taipei.

In Kuntz’s field notes, we see the “Philippine Monkey” identified in this specimen collection which came from their first section of “geomedical investigations” outside of Taiwan.⁴⁴⁷ From 1957 to 1960, the NAMRU-2 personnel documented parasites of animals and the human population in Taiwan, East Pakistan, and the Philippines.⁴⁴⁸ This work illustrates the beginning of the expanded scale of the NAMRU-2 field research from conducting an island-wide specimen collection in Taiwan to venturing out into other parts of Asia.

⁴⁴⁵ Myers and Kuntz, 1964, 863.

⁴⁴⁶ Myers and Kuntz, 1964, 864.

⁴⁴⁷ Geomedical Studies of Disease (U), MR 005-09- 1601. Naval Medical Research Unit No. 2, Box I4, APO 63, San Francisco, California; Robert E. Kuntz. *Navy research task summary, 1961* (United States. Washington, Distributed by U. S. Dept. of Commerce, Office of Technical Services, 1962), 191.

⁴⁴⁸ Letter from the Public Information Office US, Taiwan Defense Command, APO 63, San Francisco, CA (on Aug 27, 1960). RG 0052 Entry A1 1015 Research and historical files 1941-83 (container 228), The National Archives and Records Administration.

Beginning on August 24, 1960, the NAMRU-2 team began a six-week expedition to British North Borneo to investigate “diseases of man and animals in Asia”⁴⁴⁹ as a continuous “biological and *geomedical* studies in Southeast Asia.”⁴⁵⁰ The NAMRU-2’s evaluation marked the “underdeveloped country” status of North Borneo as the investigation potential on this island, presenting “an unusual opportunity and challenge for the study of uncommon and perhaps unknown diseases in the primitive state.”⁴⁵¹ In order to travel between the two islands, a direct flight for all eleven members of the research team from Taipei to Jesselton (current Kota Kinabalu) was provided by Fleet Activity Support Squadron 21. Along with the research team, a list of experimental animals—6 rabbits, 60 white mice, and 4 rats—were also included aboard the U.S. Navy N6D aircraft as gifts to the North Borneo health officials (see Figure 5-5).⁴⁵² The location of Jesselton was chosen for technical reasons among three locations (the State of Brunei and Sandakan) following the NAMRU-2’s preliminary trip in June 1960. A temporary laboratory space was set up in the Kepayan Veterinary Station just outside Jesselton.⁴⁵³ The field research trip was invited by Dr. John Clapham, the Director in Medical Services at the Colony of North Borneo, and was partly supported by funding Kuntz under Public Law 480, Section 104 (c).⁴⁵⁴

⁴⁴⁹ “Public Information Office, Aug 27, 1960 (IMG_5858_animal trap 1),” RG 0052 Entry A1 1015 Research and historical files 1941-83 (container 228), The National Archives and Records Administration.

⁴⁵⁰ “The U.S. Naval Medical Research Unit No. 2 Expedition to Borneo (IMG_5804),” RG 0052 Entry A1 1015 Research and historical files 1941-83 (container 228), The National Archives and Records Administration.

⁴⁵¹ “The U.S. Naval Medical Research Unit No. 2 Expedition to Borneo.” RG 0052 Entry A1 1015 Research and historical files 1941-83 (container 228), The National Archives and Records Administration.

⁴⁵² “Public Information Office, Aug 27, 1960.” RG 0052 Entry A1 1015 Research and historical files 1941-83 (container 228), The National Archives and Records Administration.

⁴⁵³ *Ibid.*

⁴⁵⁴ *Ibid.*

The field group consisted of one investigator, Commander Kuntz, along with one coordinator, three U.S. Navy technicians in the parasitology and virology departments, and six Chinese technicians trained at the parasitology department of NAMRU-2. The physicians and technicians at the Queen Elizabeth Hospital also supported the analysis of the biological studies of virus diseases with blood samples from the different ethnic groups and animal species on the island.⁴⁵⁵ Finally, the NAMRU-2 also enrolled and trained four local lab assistants in Jesselton who particularly worked on animals, such as skin mammals and birds.



Figure 5.5: the group photo of the NAMRU-2 expedition to North Borneo taken with the crew members before they took off from the Sungshan Airport in Taipei (RG 0052 Entry A1 1015 Research and historical files 1941-83 (container 228), The National Archive.

The research schedule was equally divided into two sections: the team focused on the laboratory work half of the time, and the other half was spent on field surveys, travelling through

⁴⁵⁵ “The U.S. Naval Medical Research Unit No. 2 Expedition to Borneo, p.4,” RG 0052 Entry A1 1015 Research and historical files 1941-83 (container 228), The National Archives and Records Administration.

the jungles and mountain trails of the colony.⁴⁵⁶ According to Commander Kuntz, the purpose of this field research was “to define the type and extend of such infections to determine their economic importance and as sources of disease in man. For both man and animals are subject to the same or similar diseases.”⁴⁵⁷

During the six-week research trip, the animal specimens were partly purchased from the local population, while others were directly collected in the rural area by the Navy on their “scientific hunting expedition.”⁴⁵⁸ The copies of the announcement poster were being distributed and circulated among the local markets to advertise and encourage the flow of animals coming to the lab, asking the residents to bring animals directly to the veterinary station at Kepayan (see Figure 5-6). The poster was written in three languages—Mandarin, English, and Malayan—asking to purchase all kinds of animals, from fish to lizards, birds to mammals (see Figure 5-7). The NAMRU-2 provided a higher price for living or slightly injured animals; if the sellers/owners wished, the animals might be able to be returned for consumption later. Approximately 1200 vertebrates—600 birds, 250 mammals, 150 amphibians, 120 reptiles, and 100 fishes—were examined for parasites and waited to be shipped to the U.S. National Museum and other museums.

An unequal but mutual interaction emerged between colonial empires and all the species, including humans, that were encountered in the colonies. For the earlier European collectors, the colonial regimes helped individuals and collectives to accumulate economic wealth, colonial trophies, the pride of Western culture, scientific knowledge, and understanding of the new

⁴⁵⁶ “Public Information Office, Aug 27, 1960.” RG 0052 Entry A1 1015 Research and historical files 1941-83 (container 228), The National Archives and Records Administration.

⁴⁵⁷ Ibid.

⁴⁵⁸ Ibid.

colonial lands.⁴⁵⁹ During the process of species collections, European colonial powers and their Asian and African colonies, the explorers, travelers, scientists, colonial officials had become engaged in enrolled into the collection and trade in exotic species.⁴⁶⁰



Figure 5.6: A resident of Kepayan, North Borneo, discussing the poster in front of a local hospital with the NAMRU-2 members Bob R. Davis (right) and Chang-shung Tseng (left). Source: RG 0052 Entry A1 1015 Research and historical files 1941-83 (container 228), NARA.

The postwar NAMRU-2 expedition seemed to follow the European history of animal collection and its global trade, yet had become more and more science-driven. Shifting from royal and private menageries to the purpose of international health, the coloniality remains in the

⁴⁵⁹ Kathleen G. Dugan, “The zoological exploration of the Australian region and its impact on biological theory,” in *Scientific Colonialism: A Cross-Cultural Comparison*, Nathan Reingold and Marc Rothenberg ed., 79-100 (Melbourne: Smithsonian Institution, 1981); Malamud, 1998; Harro Strehlow, “Zoological Gardens of Western Europe,” in *Zoo and Aquarium History: Ancient Animal Collections to Zoological Gardens*, edited by Jr. Vernon N. Kisling, 75-116 (Boca Raton: CRC Press, 2001).

⁴⁶⁰ Rothfels, 2002; Findlen, 1994; Chaiklin et al., 2020; Kisling, 2001.

NAMRU-2's gradually expanded geographical search for collecting animal species, from Taiwan to British North Borneo.

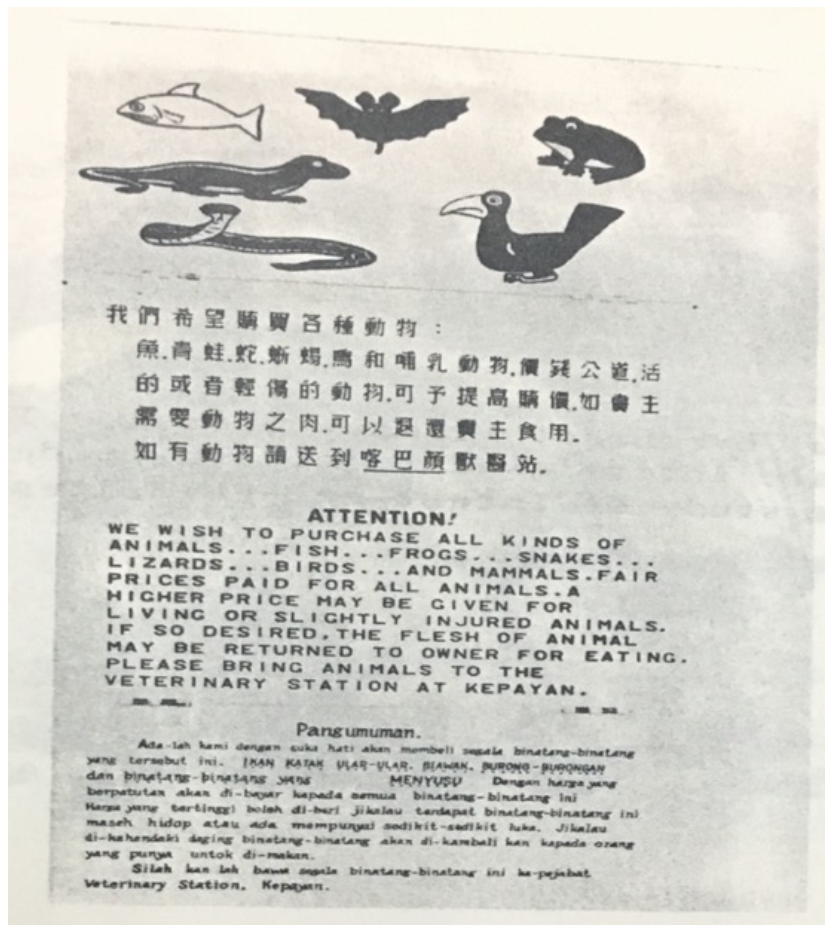


Figure 5.7: The Poster made by the NAMRU-2 for Animal Purchases in North Borneo (Source: RG 0052 Entry A1 1015 Research and historical files 1941-83 (container 228), NARA).

Conclusion

The collection, exchange, research, and experiments of the Taiwan Monkey and other animals throughout NAMRU-2 geo-medical expedition and trachoma studies resulted in the annual *paipai* ceremony. It echoes to the current paradigm shift, extending attention to animals in the history of global health from materiality to the scientific dialogue to their souls; the animal turn in the history of science and medicine helps us to reframe the NAMRU-2 operation in postwar Taiwan by situating the Taiwan Monkey at the center, linked to previous examples of colonial science. This chapter illustrates that Taiwan became a crucial site for the postwar U.S. naval medical research not only due to the established technical infrastructure or merely the Cold War political concern, but also because of the indigenous species in the mountains, in the laboratories, in the field works, in the vaccine trials, in the zoological trades, in the colonial heritage, and in the power imbalance behind the postwar global health campaigns.

In each colonial and postcolonial stage, various human actors approached the monkeys by generalizing from their species-specific knowledge to the Taiwan Monkey. It was a process that gradually “scaled-up” from an individual British colonial officer’s personal expedition, with assistance from local indigenous people, to the Japanese colonial researchers’ ambition to understand its southern colony and to establish scientific professions in zoology and mammalogy, and finally to U.S. Navy-led global health collaborations with local technicians in the field exploration and standardized laboratories in postwar Taiwan and British North Borneo.

The colonial racial capitalism operating in the colonial science and postcolonial global health research that required the Formosa/Taiwan Monkey, along with other animal species in developing countries, to become experimental subjects that were calculable, quantified, and

tradable. To achieve the standardization of scientific methods and languages (as the logic of coloniality), the experimental animal subjects had exercised its historical agency by being capable of participating in field studies and laboratory research in order to produce knowledge surrounding natural history, zoology, tropical diseases, and even laboratory animal care practices in Taiwan.

As historian Dan Vandersommers has stated in 2016, “animals have herded toward the historical profession from a growing global socio-political society desiring a sustainable future not plagued by overconsumption, exploitation, environmental destruction, and disregard for the rights of humans and other animals.”⁴⁶¹ We need to first document the past relationship between the colonies and colonial and imperial regimes as well as between the human and other animal species. It was so many various human interests driven behind the knowledge production and the scientific utilization of Taiwan Monkey. For Robert Swinhoe, it was usually characterized as his “personal” scientific interest in zoology, ethnology, and natural history while serving in the Far East; however, he would not have been able to conduct weeks of field work and naming the existing the Taiwan Monkey species without serving as a British colonial officer in Asia. The global colonial hierarchy has been further illustrated during later Japanese colonial scientists’ work on the Formosa/Taiwan Monkey; some began their scientific work by collecting animal specimens for Westerners, while others attempted to study the Formosa/Taiwan Monkey in order to be scientifically competitive based on western standards. U.S. naval medicine linked its Taiwan Monkey research to international health purposes regarding tropical diseases in Asia, while the specimen was still being shipped to collections within American institutions.

⁴⁶¹ Dan Vandersommers, “The ‘Animal Turn’ in History,” *AHA Today, Perspectives on History*, November, 3, 2016. <http://blog.historians.org/2016/11/animal-turn-history/>.

A Buddhist ritual to honor the sacrificed prompts new historical inquiries around the place of animals in biomedical colonial research. From both Taiwan and the U.S. sides, the key global health actors were captured at the annual rituals.⁴⁶² The event involved three sessions: offering, incense, and *paipai* ceremony. The outside of NAMRU-2 buildings would be surrounded by colorful banners and the offerings of wine, fruit, meat, and bags of animal feed are placed during the *Paipai* ceremony. Chicken, fish, rice cakes, fruit, rice, and wine. Candles, incense sticks, and the chanting instruments of the monks share the altar with these gifts. In 1975, the *US Naval Medicine* published an article introducing this special Paipai ceremony hosted in NAMRU-2 Taiwan. According to T.M. Reynolds, one NAMRU-2 officer's observation:

“The commanding officer of NAMRU-2 and the heads of the veterinary medicine, medical ecology, and microbiology departments lead the procession of animal and insect slaughterers (NAMRU-2 technicians) to the altar. The priests then offered each participant a piece of incense from a small box; the incense is placed in a burner as an expression of sympathy for the sacrifice of the victims' lives. Each person says a silent prayer, bows, and leaves the altar.”⁴⁶³

Standing before the altar and paying homage to the animals and insects at the 1961 *Paipai* ceremony, Commander Phillips described how these living beings “have necessarily been sacrificed.”⁴⁶⁴ Accordingly, it was to “assure the departed souls of insects, bacteria, mice, and

⁴⁶² As I wrote for the caption of Figure 5-1, Dr. Tien-Chen Kao, superintendent of the NTU hospital, was reading the dedication that Commander Robert Phillips on his left was listening; On the right side was Dr. San-Ping Wang, a key Chinese trachoma specialist working closely with the U.S. navy in Taiwan.

⁴⁶³ T. M. Reynolds, MSC, USNR, NAMRU-2. “PAI PAI CEREMONY AT NAMRU-2.” *US Naval Medicine*, 65, March 1975, 40.

⁴⁶⁴ Letter to Mr. Tillman Durdin by Captain Robert Phillips. 15 July 1961. Box 38, Folder 3, Tillman Durdin collection, University of California, San Diego.

other living creatures that their sacrifice has not been forgotten.”⁴⁶⁵ A former NAMRU-2 technician Chunmei Chang (張春梅), she still remembers these *Paipai* events she attended to in the late 1960s vividly even though she is now a grandma. She told me during our interview that, “I asked my PI, do you Americans really believe in this? He replied to me that ‘we believe if the locals believe it.’” She did not tell me what she believed or not by that time, she was more curious about those U.S. medical researchers’ perspective.⁴⁶⁶ It is also a great reminder for us to amplify the ontological turn in humanities that this chapter does not merely talk about the interpretation of monkeys and other animals in the colonial and global health research. I aim to point out an alternative ways of being that animals and the island it sustains could exist in parallel with the postcolonial dispossession.

⁴⁶⁵ Reynolds, 1975.

⁴⁶⁶ It requires a full chapter to talk about the other direction towards the animal rights movement as a response to the increasing use of animals in scientific research. Historians have identified that the experimental animals do not only lead to the rise of modern medicine but also to a strong backlash against vivisection and the origin of the animal rights movement, which dates back to eighteenth-century Europe. See Ritvo, 1987, and Franco, 2013. In the last decades of the nineteenth century, all of today’s most relevant arguments on the debate surrounding the use of animals for scientific purposes were already in place, as well as most of the rhetoric and means of action in defense of each position. See Rod Preece, “The History of Animal Ethics in Western Culture,” in *The Psychology of the Human-Animal Bond: A Resource for Clinicians and Researchers*, C., Boyra, G., and Shen-Miller, D. Blazina eds., 45–62 (New York: Springer, 2011). Moved onto the 20th century, the antivivisection and animal right movement has been continuously a crucial research topic today. See Susan Lederer, “Political Animals: The Shaping of Biomedical Research Literature in Twentieth-Century America,” *Isis* 83 (1992): 61-79; and Hilda Kean, “The ‘Smooth Cool Men of Science’: The feminist and Socialist Response to Vivisection,” *History Workshop Journal* 40 (1995): 16-38. Many current scholars shift the focus to scientists’ reactions such as their care, affection, morality, research ethics, and their interactions to research animals during the experiments. See Kirk, 2016.



Figure 5.8: NAMRU-2 Paipai Ritual in Taipei, Taiwan (Box 38, Folder 3, Tilman Durdin collection, University of California, San Diego).

The recent turning of attention to animal history has shifted the humanitarian paradigm for research,⁴⁶⁷ yet just as how NAMRU-2 researchers adopted *Paipai* into their scientific routine in Taiwan, a Taiwanese animal historian Chien-Hu Li reminds us that the animal turn to go beyond Anthropocentrism as a radical agenda is still emerging.⁴⁶⁸ It is crucial to consider our own positionality and relations to the history we are studying. Centering the Taiwan Monkey at the center of this chapter, is an attempt to engage with a broader question about historical agency. As STS scholars John Law and Annemarie Mol have also conceived agency not as an internal and static capacity possessed by individual human subjects but as a result generated

⁴⁶⁷ Erica Fudge, ed. *Renaissance Beasts of Animals, Humans, and Other Wonderful Creatures* (Champaign: University of Illinois Press, 2004) and also Fudge, 2002; Cassidy A, Dentinger RM, Schoefert K, Woods A., 2017; Bresalier, Dentinger, and Cassidy eds., 2017; Vandermommers, 2016.

⁴⁶⁸ Chien-Hui Li, “You bianyuan maixiang Zhongyang: qiantan dongwu shixue zhi fazhan yu tiaozhan (From the Margins to the Center: The Development and Challenges of Animal History),” *Cheng Kung Journal of Historical Studies* 58 (2020): 253-264.

from and performed in relation to humans and nonhumans.⁴⁶⁹ Instead, it is more important to describe how animals act instead of imposing on them the Enlightenment figure of rational human actors because animals and other living things act in their own ways yet often affect human history in unpredictable ways.⁴⁷⁰ Therefore, this current paradigm shift might be able to contribute more to the decolonizing projects in the current historical writings.

⁴⁶⁹ Michel Callon and John Law, "Agency and the hybrid Collectif," *South Atlantic Quarterly* 94 (1995): 481-508; Bruno Latour, *We Have Never Been Modern* (Hemel Hempstead: Harvester Wheatsheaf, 1993).

⁴⁷⁰ John Law and Annemarie Mol, "The Actor-Enacted: Cumbrian Sheep in 2001," in *Material Agency Towards a Non-Anthropocentric Approach*, Carl Knappett and Lambros Malafouris eds., 57-77 (London: Springer, 2008)

CHAPTER FIVE

Invisible Scientific Labor, Transnationally-Gendered Leverage: A Close Examination of the Life History of LIN Shou-Yin

Introduction: A Young Hakka Taiwanese Woman's Migrant Traces Matter

Walking toward the cafeteria in the NAMRU-2 building in Taipei, LIN Shou-Yin saw the annual Buddhist ritual for the animals sacrificed in the NAMRU-2 studies. Perhaps she had come across the souls and spirits of Taiwanese monkeys while conducting the trachoma vaccine project at NAMRU-2. This remains one of her most vivid—and unresolved—memories. After graduating in entomology from National Chung Hsing University (國立中興大學) in Taichung, a municipality in central Taiwan that is known as the city of sun, LIN Shou-Yin, a Taiwanese Hakka woman born in 1943 in southern Taiwan, moved to Taipei, starting her first job in NAMRU-2's virology laboratory, where she was supervised by Dr. E. Russell Alexander from 1965 to 1967.⁴⁷¹

⁴⁷¹ Dr. E. Russell Alexander (1928–2006) was born in Chicago, but raised in Manchester, England until 18. After receiving his undergrad and MD degrees from the University of Chicago in 1953, Dr. Alexander joined the federal Epidemic Intelligence Service, Communicable Disease Center (which later became the Centers for Disease Control and Prevention) from 1955 to 1960. In 1961, he joined the University of Washington (UW), starting with preventive medicine and pediatrics. While remaining his position at the UW, during the 1960s Dr. Alexander had built up a strong relationship with Taiwan. He firstly served as a guest investigator and then a BuMed consultant in the Epidemiology and Clinical Investigation Department at the NAMRU-2. Dr. Alexander was a founding member of the UW school of public health, as the first chairman of epidemiology and international health by 1970. It was after serving as a visiting Professor in the Institute of Public Health at National Taiwan University, Taipei, Taiwan in 1969–1970. During his stays in the NAMRU-2, Taiwan, he contributed remarkably in the trachoma vaccine studies from the late 1950s to 1960s, collaborating with Dr. Thomas Grayston, another key figure of the UW school of public health. See The United States Naval Medical Research Unit No. Two. “NAMRU-2 Biographical sketches of professional staff.” Naval Medical Research and Development Command (Bethesda, Maryland, 1976). “E. Russell Alexander, 77, Public Health Expert,” *The New York Times*, March 20, 2006, Section A, Page 21. Tom Paulson, “E. Russell Alexander, 1928–2006: Doctor fought infectious disease locally, nationally,” *Seattlepi*, Feb 27, 2006 (updated Mar 18, 2011) <https://www.seattlepi.com/local/article/E-Russell-Alexander-1928-2006-Doctor-fought-1197051.php>

Just like other Taiwanese female technicians, as well as local Taiwanese drivers, clerks, cooks, and janitors, LIN Shou-Yin was there but also not there at NAMRU-2. Their labor was very much invisible in the existing literature and archives on NAMRU-2. Although the local staff were greatly outnumbered by the foreigners at NAMRU-2, it is basically impossible to capture their presence in the official records. In 1961, there were only 29 Americans among the total of 250 employees at NAMRU-2. In 1962, the number of Americans increased to 42, while the number of non-American employees increased slightly to 227.⁴⁷² During the 1960s, the American and local staff numbers at NAMRU-2 comprised a ratio of around 1:9. However, in an official pamphlet published by the U.S. Information Service in 1961, except for seven local research fellows (unsurprisingly, they were all biologically male) who were acknowledged and listed as key members of NAMRU-2 staff, more than 200 local employees remained anonymous and received, in the view of NAMRU-2, the ethnic label of Chinese.⁴⁷³ Although Mrs. LIN Shou-Yin would not agree with this ethnic categorization since she has been actively participated in the overseas Taiwanese community building and supported the overseas Taiwanese independence movement. The local NAMRU-2 employees are hard to find in the official archives was not only due to the problem of NAMRU-2 archive preservation during the several relocations in Southeast Asia (as described in the method section of Introduction), but also the

⁴⁷² Memo written by Chao-de Hu (胡超德), on August 24, 1964 in “1962 nien tumei kuohai chüni hsüehyen chiuchung hsin (NAMRU-2, 1962).” Ministry of Economic Affairs Archives (36-11-003-113), Institute of Modern History, Academia Sinica. Also see Commander Robert Phillips’s letter to C.C. Chang, secretary General at the CIECD (NAMRU-2/RAP:eh series 64-737) in “1962 nien tumei kuohai chüni hsüehyen chiuchung hsin (NAMRU-2, 1962).” Ministry of Economic Affairs Archives (36-11-003-113), Institute of Modern History, Academia Sinica.

⁴⁷³ United States Information Service, 1961, 60-61. In contrast to all names of the formerly and currently assigned U.S. naval personnel, the U.S. Information Service only listed eight present medical research fellows (five labelled as China, two as Korea, and one as the United States) as the key members of the NAMRU-2 staff. The five researchers are Dr. W. C. Hsieh, Dr. Sze-hsing Hsu, Dr. Jun-bi Tu, Dr. San-Ping Wang, and Dr. Shu-yung Wang. In regard to the former key members, Dr. Fu-hsiang Tai and Dr. K. C. Sun were on the list.

fact that many young Taiwanese technicians and researchers worked only temporarily at NAMRU-2 from the mid-1950s to 1970s.

As historian Steven Shapin firstly addressed in 1989, there has been a systematic ignorance about the hierarchy and power-imbalance of the scientist-technician relationship in modern science, and it resulted in a lack of historical preservation and investigation on technicians and their work.⁴⁷⁴ Accordingly, to amplify the life and work of technicians reflects a “both historical and modern attitudes toward the value of skilled work,”⁴⁷⁵ as a response to the fact that technicians often left scarce archival records of their lives and careers, to challenge the individualist preassumption that science is carried out by a few brilliant individual thinkers, and to working on the key of team in building science.⁴⁷⁶ In addition, this scientist-technician divide is also gendered. Feminist Technology Studies (FTS) researchers and historians have shown that compared to their male counterparts, women technicians are more anonymous and voiceless.⁴⁷⁷ Therefore, as historian Ruth Schwartz Cowan’s breakthrough statement in 1996, “adding technology to science means adding a woman's perspective.”⁴⁷⁸

⁴⁷⁴ Steven Shapin, “The invisible technician,” *American scientist* 77, no. 6 (1989): 554-563.

⁴⁷⁵ Shapin, 1989, 554.

⁴⁷⁶ Ibid, and Nicholas C. Russell, Elizabeth M. Tansey, and Peter V. Lear, “Missing Links in the History and Practice of Science: Teams, Technicians and Technical Work,” *History of Science* 38 (2000): 237-241.

⁴⁷⁷ Francesca Bray, “Gender and technology,” *Annual Review of Anthropology* 36 (2007): 37-53; Boel Berner and Maria Björkman, “Modernizing the flow of blood: Biomedical technicians, working knowledge and the transformation of Swedish blood centre practices.” *Social Studies of Science* 47, no. 4 (2017): 485-510; Stephen R Barley and Beth A. Bechky, “In the Backrooms of Science: The Work of Technicians in Science Labs,” *Work and Occupations* 21, no. 1 (1994): 85-126; Stephen Barley, “Technicians in the Workplace: Ethnographic Evidence for Bringing Work into Organizational Studies,” *Administrative Science Quarterly* 41, no. 3 (1996): 404-41; Julie M. Hartley and Elizabeth M. Tansey, “White coats and no trousers: Narrating the experiences of women technicians in medical laboratories, 1930-90,” *Notes and Records: the Royal Society Journal of the History of Science* 69, no. 1 (2015): 25-36. The FTS (Feminist Technology Studies) has challenged the gendered divide in scientific (masculine) and technological (feminine) work, and the long term neglect of women’s physical and technical labor in the production of science, for FTS literature see Ruth Schwartz Cowan, “Technology Is to Science as Female Is to Male: Musings on the History and Character of Our Discipline,” *Technology and Culture* 37, no. 3 (1996): 572-582 and Bray, 2007.

⁴⁷⁸ Cowan, 1996, 573.

To uplift the often invisible or unnamed local female NAMRU-2 technician in the history of global health research in postwar Taiwan, this chapter adopts Rivera Cusicanqui's concept of *historia oral* (oral history) to collect materials to understand the dialectics of post-colonialism, micro-history, and the postwar global health. Hopefully, oral history and life-history can benefit postcolonial approach and add more layers to the historical writing of science and medicine. As compared to the former NAMRU-2 American researchers' biographies and the sometimes over-glorified narratives produced by the male Taiwanese scientists and physicians, it is important and meaningful to tell the stories of LIN Shou-Yin and her coworkers at NAMRU-2, who were also involved in this U.S. Navy medical research facility in Taiwan.

Throughout this chapter, I will unpack a number of historical puzzles surrounding NAMRU-2 and its local Taiwanese employees during the postwar era. Firstly, who were the entry-level local staff at NAMRU-2, and how were these individual lives entangled with macro historical events during the postwar era? I argue that the general labor conditions at NAMRU-2 in postwar Taiwan were gendered, education-defined, and simultaneously racialized and ethnicized. It is crucial to acknowledge the often-neglected female actors at NAMRU-2, especially as this was an era in which there were only a few women in STEM in the Western world, and even fewer in Asian societies such as Taiwan.

This led to a postcolonial condition in which working at NAMRU-2 involved, a *transnationally gendered leverage* of Taiwanese women, as a response to the macro historical constraints, which was also navigated by their collective vision toward a better future outside the Chinese political oppression and gender norms and inequalities on the island. The notion of *transnationally gendered leverage* highlights how the local Taiwanese women transformed the temporary and often invisible technician's work at NAMRU-2 into a steppingstone for their

professional migration to the U.S. in the 1960s and 1970s, when the martial law Taiwan, prohibited the international travels. As I have described in previous chapters, NAMRU-2's interventions in Taiwan represented a transnational flow of knowledge and power between the U.S. and the Asia Pacific. For these local NAMRU-2 Taiwanese women who participated in this transnational flow, I describe this historical phenomenon as transnationally gendered leverage.

As a result, the history becomes much more complicated, going beyond the currently widespread focus on the *brain-drain* crisis in postwar developing countries, beyond the change of the U.S. Immigration Policy in 1965, and beyond a simple knowledge and funding flow between the U.S. and Taiwan. The striking historical events—the U.S.-led international health campaign in postwar Asia, U.S. aid and foreign policy in Taiwan and the broader East Asia region during the Cold War, and the developing countries' *brain-drain* crisis—not only changed the global landscape but also shaped LIN-Shou-Yin's individual trajectory. These apparently huge historical moments were actually interwoven into her relations to her family, the ethnic (Hakka) land, the U.S.-led international health operations, and everyday political resistances. How and to what extent did all these factors shape her decision to work at NAMRU-2—a decision that had a great influence on her later transnational journey?

“I don't think there is anything crucial about me and my life that deserves to be published.” LIN-Shou-Yin said that to me during our second interview. Her reaction reminds me of when the feminist historian Ruth Schwartz Cowan shared her idea about publishing a book on women engineers with a literary agent, and the person responded to her by saying that, “I can't

imagine a more boring subject than women engineers.”⁴⁷⁹ Influenced by social history, postcolonial studies, and the history of gender and STEM, this chapter challenges the boundary between the significant and the trivial in historical writing, and the judgment of whom should be documented and remembered in history. More than those white male NAMRU-2 researchers who received most of the credit and are featured in glorious biographies narrated by their own Taiwanese male physicians, I have been curious about the pictures I have encountered during my archival research on different local female researchers, technicians, and staff, most without names. Who are they, why did they choose to work at NAMRU-2, and where did they go?

Her story illuminates the often un-archived and un-told Taiwanese female immigrant experience during the Cold War, that of a technician in particular, and her journey from NAMRU-2, the American medical research station in Taiwan, to physically migrating to the U.S. to continue her scientific education and career.

The history of women in STEM cannot be physically defined by linear time and is geographically situated. The experience of women who participated in STEM industries in 1960s Taiwan is quite different from those White or Black female pioneers in the 1960s U.S., when the feminist movement was a constructive force in efforts to reform gender inequality. In contrast, Taiwanese society in at this time was still under the longest Martial Law imposed in world history, where constitutional rights were almost completely violated by the Chinese Nationalist government’s fear for the threat of the Red Chinam and, according to scholar Chen Hsiu-Hui,

⁴⁷⁹ Ruth Schwartz Cowan, “Foreword: Musings About The Woman Engineer As Muse,” in *Crossing Boundaries, Building Bridges: Comparing the History of Women Engineers, 1870s-1990s*, Annie Canel, Ruth Oldenziel, and Karin Zachmann eds., xi-xvii (London; New York: Routledge, 2003), xii.

gender was a tool of social and political control for the Nationalist China.⁴⁸⁰ In contrast to the “feminist” movement outside Taiwan, it was the opposite “familist” movement (even it sounds similar) launched by the state, reinforcing the conservative gender norms and limiting the development of feminist movements in Martial Law Taiwan.⁴⁸¹ Women were assigned to focus on her family and domestic work, staying away from the civil and public affairs or political participation.⁴⁸² The patriarchal system which was supported by Nationalist China’s Martial Law agenda also shaped the gendered unequal educational opportunities and the lack of resources, opportunities, and academic freedom for female students.⁴⁸³ Therefore, LIN Shou-Yin’s education and work experience showed a different path in the science professions for women born and raised in the postwar recent decolonized countries. In 1982, American historians Joan Jacobs Brumberg and Nancy Tomes called for a new research agenda on focusing women’s experiences within their professions; later in 2003, the feminist scholars on gender and technology identified the issue of the lack of women’s history outside the Euro-American context in contemporary literature.⁴⁸⁴

⁴⁸⁰ Hsiu-hui Chen, “An Analysis of Gender Politics during the Martial Law Era,” *Taiwan Journal of Sociology* 34 (2001): 1-50.

⁴⁸¹ Ibid, and Shu-fen Lin, “Research on Women’s Participation in Politics during the Martial Law Era,” *Taiwan Women’s Studies Journal* 16, no. 1 (2015): 115-161.

⁴⁸² Yenlin Ku, *Feminisms 1970s-2010s* (Taipei: Chuliu Publisher, 2015); Shuang-lian Liang and Yan-ling Gu, “Taiwan women’s political participation: An observation of both inside and outside the system,” in *Taiwan women’s status white paper: 1995*, Y.-S. Liu ed., 97-118 (Taipei: the Commercial Times Press, 1995). The Taiwanese feminist’s resistance and the rising of gender consciousness during Martial Law Taiwan, see Chang Ling Huang. “Women and political participation.” *Taiwan women’s rights report*, the Foundation for Women’s Rights Promotion and Development ed., 212-252 (Taipei: Foundation for Women’s Rights Promotion and Development); Hsiu-hui Sun and I-fen Chen, “The Construction of Female Discourse in The Women, 1968-1978,” *Communication & Society*, no. 35 (2016): 57-100; Fang-ting Hsu, “Women’s Groups and Women’s Issues in Early Postwar Taiwan,” *Taiwan Historical Research* 15, (2000): 19-43. Martial Law, Cold War, and higher education in Taiwan see, Jinlin Hwang, “War and Higher Education in Taiwan, 1945-1990,” *Taiwanese Sociology* 34 (2017): 124-167.

⁴⁸³ Shu-chang Gong, “Changes in Women’s Higher Education during the Martial Law Era in Taiwan,” *Taiwan Historical Research* 10, no. 3 (2003): 1-29.

⁴⁸⁴ Joan Jacobs Brumberg and Nancy Tomes, “Women in the Professions: A Research Agenda for American Historians,” *Reviews in American History* 10, No. 2 (1982): 275-296; Annie Canel, Ruth Oldenziel, Karin Zachmann, *Crossing boundaries, Building Bridges: Comparing the History of Women Engineers, 1870s-1990s* (London; New York, Routledge. January 2003).

The fruitful literature on female Asian migrants in the U.S. has provided a sharply analytical perspective on recentring these women to the surrounding empires, wars, patriarchies, racial hierarchies, and the global economy in order to see how these systems operate. Some focus on the history between the mid-19th century to the Cold War era, and some others examine contemporary societies. Still, although the scholarship represents Asian women in nursing, farming, domestic care, marriage, and sex work, the history of young female STEM professionals coming from Asia deserves more attention to understand the critical influence of U.S. foreign policy in the Cold War era on shaping the multiple layers of different Asian women's transnational trajectories.⁴⁸⁵

Beyond agreeing with Joan Scott that gender is a useful tool of historical analysis, this chapter further suggests that gender is also a useful instrument for researchers to position the

⁴⁸⁵ While there are studies on the foreign medical professionals migrated to the Cold War U.S., they don't specifically mobilize the gender perspective. See Eram Alam, "Cold War Crises: Foreign Medical Graduates Respond to US Doctor Shortages, 1965–1975," *Social History of Medicine* 30, no. 1 (2017): 54-74; Rosemary Stevens, Charles E. Rosenberg, and Lawton R. Burns, *The Alien Doctor: The Foreign Medical Graduates in American Hospitals* (New York: John Wiley & Sons, 1978). Gender aspect of the Asian migrants in the U.S. for the demand of nursing see Catherine Ceniza Choy, 2003. Yasmin Y. Ortiga, "Professional problems: The burden of producing the "global" Filipino nurse," *Social Science & Medicine* 115, (2014): 64-71; Sujani Reddy, "The Hidden Hand": Remapping Indian Nurse Immigration to the United States," in *The Sun Never Sets: South Asian Migrants in an Age of U.S. Power*, Vivek Bald, Miabi Chatterji, Sujani Reddy, and Manu Vimalassery eds., 121-144 (New York City: New York University Press, 2013). Recent situation dealing with Covid-19, see Katherine Nasol and Valerie Francisco-Menchavez, "Filipino Home Care Workers: Invisible Frontline Workers in the COVID-19 Crisis in the United States," *American Behavioral Scientist* 65, no. 10 (2021): 1365–1383. The case of Indian female nurses to the U.S. and their transnational family and marriage building process see George, Sheba. Asian female migrants as domestic workers see Carlos M. Piocos, *Affect, Narratives and Politics of Southeast Asian Migration* (New York: Routledge, 2021). The investigation of Southeast Asian female domestic workers in other countries and areas, in Taiwan and Hongkong for example, Taiwan see Pei-chia Lan, *Global Cinderellas: Migrant Domesticity and Newly Rich Employers in Taiwan* (Durham: Duke University Press, 2006). Julianne M. Groves and Kyunghee Chang, "Romancing Resistance and Resisting Romance: Ethnography and the Construction of Power in the Filipina Domestic Worker Community in Hong Kong," *Journal of Contemporary Ethnography* 28, no. 3 (1999): 235-265. Nicole Constable, *Maid to Order in Hong Kong: Stories of Migrant Workers*, 2nd ed. (Ithaca: Cornell University Press, 2007). Christine Chin and Lok C. D. Siu, *When Women Come First: Gender and Class in Transnational Migration* (Berkeley: University of California Press, 2005). Ji-Yeon Yuh, *Beyond the Shadow of Campdown: Korean Military Brides in America* (New York University Press, 2002). Catherine Ceniza Choy and Judy Wu (eds), *Gendering the Trans-Pacific World* (Leiden: Brill Press, 2017); Shirley Hune and Gail Nomura (eds.), *Asian Pacific Islander, American Women: A Historical Anthology* (New York: New York University Press, 2003). Also, the examination of the transnational experience of Taiwanese migrants in the U.S. see Ken Chih-Yan Sun, *Time and Migration: How Long-Term Taiwanese Migrants Negotiate Later Life* (Ithaca: Cornell University Publisher, 2021).

scales of their historical analysis between the micro and global levels.⁴⁸⁶ In addition to the recognition of the uniqueness of Taiwanese women's global transitional experience, this chapter shows that there it is possible to make connections and comparisons between micro-historical investigations.⁴⁸⁷ I intentionally address the scaling of history in order to illustrate that it is never merely about the locality. As Linda Colley described in *The Ordeal of Elizabeth Marsh*, by zooming into the delicate texture in the history, we will come to realize that “it is a world in a life and a life in a world.”⁴⁸⁸ As a research approach, microhistory is “a rediscovery of culture and the individuality of persons and small groups as agents of historical change.”⁴⁸⁹

Feminist and postcolonial feminist STS and FTS (Feminist Technology Studies) approaches have all brought attention to the gender dynamics of technology critique against science-technology relationship in modern science. This fundamentally helps to show on understanding LIN Shou-Yin/Christine Yang's historical traces and the seemingly dichotomy—man/woman, (White) American/Chinese/Taiwanese (Holo/Hakka), and Scientist/technician—have been reciprocally constructed, rather than immutable facts. In following the earlier Feminist and Postcolonial Feminist accounts on the gendered production of science, as Evelyn Fox Keller described, “feminist critique of science is, then, first a historical one, but finally a transformative one. In the historical effort, feminists can bring out whole new range of sensitivities, leading to

⁴⁸⁶ Joan Scott, “Gender: A Useful Category of Historical Analysis,” *AHR* 91/5 (1986): 1053- 075; *AHR* Forum “Revisiting ‘Gender: A Useful Category of Historical Analysis,’” *AHR* 113/5 (2008): 1344-1465.

⁴⁸⁷ This chapter does not adopt a postmodernist approach which often focuses only on describing the singular cases instead of creating the dialogues to other studies or the grand narratives.

⁴⁸⁸ Linda Colley, *The Ordeal of Elizabeth Marsh: A Woman in World History* (New York: Pantheon Books, 2007), 15.

⁴⁸⁹ Georg G. Iggers, *Historiography in the Twentieth Century: From Scientific Objectivity to the Post* (Hanover and London: Wesleyan University Press, 2005), 112.

any equally new consciousness of the potentialities lying latent in the scientific project.”⁴⁹⁰ This chapter attempts to demonstrate that the personal opportunities and limitations in the life of LIN Shou-Yin/Christine Yang are structured by the Cold War, international health research, and global political economy. Further, postcolonial feminist STS such as Sandra Harding, expands situated epistemology by adding the racial and ethnic dimension to prevent erasing the intra-difference among women’s lived experience.⁴⁹¹ This chapter attempts to illustrate the hierarchies of gender, race, and class in the 1960s, re-casting and re-evaluating biography as a way of deepening our understanding of the global past.

Her Hakka Hometown in Taiwan: LIN Shou-Yin’s Family Ties to the Southernmost International Health Station on Malaria

Watching her father training young Taiwanese students collecting mosquito specimens in the field, the main character of our chapter envisioned that one day when she grows up, she would be able to work at this malaria research center just like her father. Her childhood dream was embedded in the correlating history of international health and international politics—the establishment of the malaria research center was the product of a series of wars, WWII, the Chinese Civil War, the Korean War, and the onset of the Cold War. Originally launched during WWII in mainland China, when Taiwan was no longer Japan’s colony, the Rockefeller Foundation extended a Taiwan branch—the Taiwan Provincial Malaria Research Institute (TAMRI)—to focus specifically on anti-malaria experiments in rural areas. In 1951, due to the

⁴⁹⁰ Evelyn Fox Keller, “Feminism and Science,” *Signs: Journal of Women in Culture and Society* 6, no. 3 (1981): 589-602, 602. I appreciate Vincanne Adams, my committee member, recommending me to review this important paradigm shift in the history and sociology of science.

⁴⁹¹ Sandra Harding, “Rethinking Standpoint Epistemology: What is “Strong Objectivity”?” in *Feminist Epistemologies* edited by Linda Alcoff and Elizabeth Potter, 352-384 (New York: Routledge, 1993); Uma Narayan, Sandra Harding, and Sandra G. Harding, eds. *Decentering the center: Philosophy for a multicultural, postcolonial, and feminist world* (Bloomington: Indiana University Press, 2000).

result of the Chinese Civil War, this facility was not attached to mainland China anymore; instead, it became an individual field for U.S.-led international health actors to create an island-wide malaria control program co-directed by representatives of the Public Health Administration, TAMRI, the International Co-operation Administration (ICA), the Council for United States Aid (CUSA), the Sino-American Joint Commission on Rural Reconstruction (JCRR), and the WHO.⁴⁹²

Geographically, TAMRI was located at Chao-Zhou township (潮州鄉), a rural area in Pingtung—the southernmost county in Taiwan. Lin’s family lived in a small village within Wanluan township (萬巒) called Shi-Gou Shew village (泗溝水) (see Figure 6.1) fourteen miles away from the WHO malaria research unit on the east side of Chao-Zhou town --. From the human-geographical aspect, the land cultivation of Shi-Gou Shew village started in the early-17th century when the Hakka immigrants moved from southern and northern Guangdong province in southeast coastal China. From a physical geographical aspect, Shi-Gou Shew village is on the west part of Wanluan town, and on its west side, the Tong-Kang creek (東港溪) draws borders Ne-Pu town (內埔鄉) and Shin village (興村); on the south side, the Chia-Pin creek (佳平溪) divides Shi-Gou Shew from another village called Liu-Huang (硫磺村).

⁴⁹² See Taiwan Provincial Malaria Research Institute & WHO Malaria Team in Taiwan, “MALARIA control and eradication in Taiwan: progress report,” *Bull World Health Organ.* 19, no. 4 (1958):595-620; Wan-I Chen, “Malaria eradication in Taiwan, 1952-1964--some memorable facts.” *Gaoxiong yi xue ke xue za zhi* (The Kaohsiung journal of medical sciences) 7, no. 5 (1991):263-70.; Feng-yuan Hsu, “Malaria Control in Taiwan (1945-1952),” *Research in Taiwan Studies* 20 (2016): 69-110.

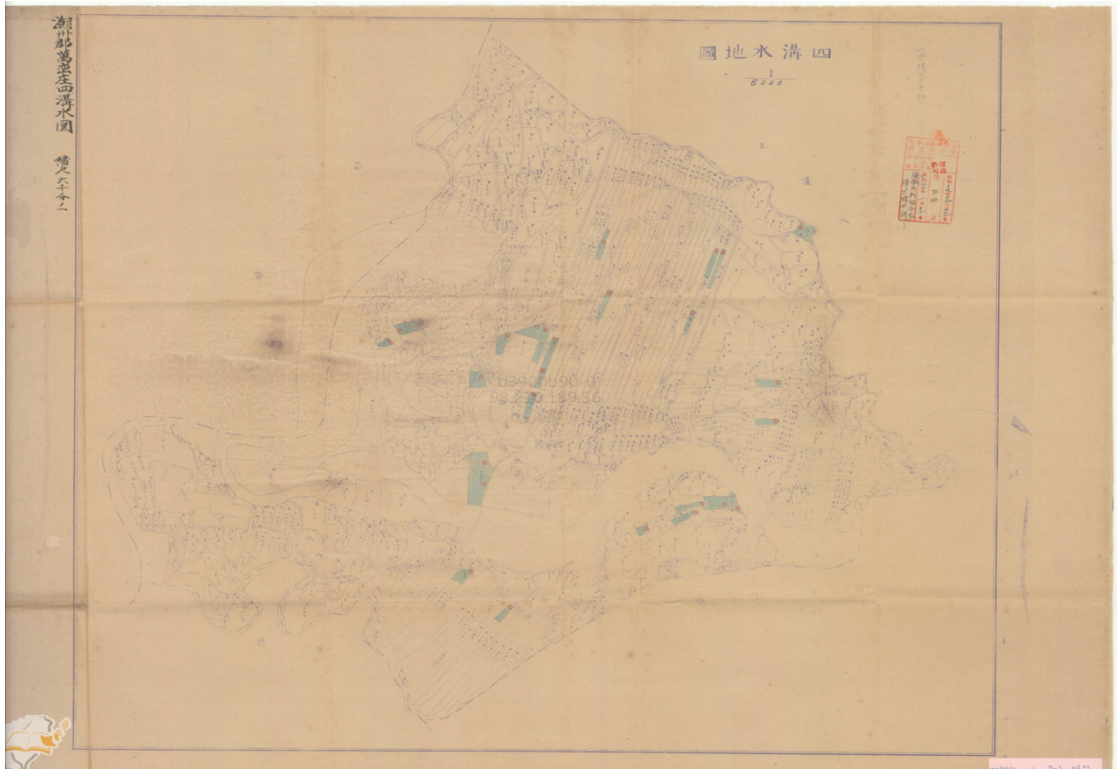


Figure 6.1: The water conservancy project map at Shi-Gou Shew village, 1944-1946 (Taiwan Soutokufu official document, 1944-1946. Taiwan Soutokufu Archives. Number: 00011040001 - 000110400019003014M. 122/333).

According to the *Pingtung Local Chronicles* (2001), there have been two common explanations for the name of Shi-Gou Shew (泗溝水).⁴⁹³ Some people claim that it refers to the fact that this village is surrounded by four different creeks, and others believe that its name represents the fourth village within the early Hakka settlers' sequence of land cultivation along the Tong-Kang creek. No matter which one is historically correct, both arguments demonstrate that the Hakka immigrants' colonization on southern Taiwan's new land was closely associated with the rivers. In the postwar era, there was no school in Shi-Gou Shew village, so Lin and her six siblings had to walk half an hour to the Wanluan elementary school (萬巒國民學校) on the other side of the Tong-Kang creek.⁴⁹⁴ Third among the seven children in her family, Lin

⁴⁹³ The local history of Pingtung see *Pingtung Local Chronicles*, 2001 and 2014.

⁴⁹⁴ *Pingtung Local Chronicles*, 2001.

remembers crossing the water every day on the way to school with her siblings: “We had to walk across a rough wooden bridge above the river (editor: the Tong-Kang creek) every school day. However, during the rainy season, the connection between our village and Wanluan was often shut down due to flooding from rivers overflowing the bridge. Some boatmen showed up paddling their bamboo rafts to take passengers and kids like us across the creek.”⁴⁹⁵

Lin’s self-identification of Hakka ethnicity has been addressed recurrently in her autobiographical writings for the overseas Taiwanese community and corresponds to the Hakka heritages labeled by the historical researchers studying the ethnic relation, cultures, and settlement in Shi-Gou Shew village, and the broader Wanlua and neighboring Chao-Zhou townships. In contrast to the dominant ethnic binary between Mainlander and Taiwanese as defined by ancestral home (province) pinned at the great China’s geographic location during 1945-1987, the “four major ethnic groups”—indigenous (2%), Mainlander (14%), Holo (70%), and Hakka (14%)—is a discourse arising after the end of the martial law era that became an assumed fact for the ethnic structure of the population of Taiwan since the early 1990s.⁴⁹⁶ By this definition, the previous category of “Taiwanese” has been divided into three sub-ethnic groups: indigenous, Holo, and Hakka.

The distinction between Holo and Hakka is based on their different dialects, cultures, and their ancestral origins in the 18th century. According to Taiwanese sociologist Fu-Cheng Wang, the shifting standards for the classification of governmental data on race and ethnicity was the result of several ethnic movements with their specific agendas, such as Hakka’s social

⁴⁹⁵ Shou-Yin Lin, “A Country Girl from Sigoushui.” Taiwanese American Archives, May 2015. <http://taiwaneseamericanhistory.org/blog/mystories242-eng/>

⁴⁹⁶ The result of the estimate ethnic demography is slightly different based on the surveys generated by different organizations and researchers.

recognition and culture preservation; ten different indigenous ethnic groups taking a united strategy for equality and justice; or even the privileged second generation of mainland Chinese seeking to reassure its institutional benefits during Taiwan's democratization in the 1980s-1990s. Wang argues that the ethnic group in Taiwan is defined by the cultural components and its social position. LIN Shou-Yin's mother tongue is the Taiwanese Hakka: "Everyone in my town, from kids to elderly, all speak Taiwanese Hakka."⁴⁹⁷ She remembers that, "Even though my parents they received a Japanese education, at home they still spoke Hakka. They only talked in Japanese on some occasions when they did not want me and my siblings to know what they were saying."⁴⁹⁸

In contrast to Wang's focus on the contemporary ethnic identity politics of and the governmental official standard for ethnic classification during the 1980s and 1990s, historians have been examining the history of Hakka—as an ethnic terminology and a cultural tradition—and how it has developed and changed in Taiwan in the past four hundred years. Based on the archives generated in different settlement areas, there are two major explanations for the distinctiveness of the Hakka ethnicity: one argues that it was defined by the 17th-18th century

⁴⁹⁷ The quotation comes from LIN Shou-Yin, "My Language Learning Journey," Taiwanese American Archive, Aug 2019. <https://taiwaneseamericanhistory.org/blog/my-stories-689/>. Within Taiwanese Hakka, there are seven different dialects representing different regions of Taiwan. The dialect used by LIN Shou-Yin, her family, and her hometown is called Sixian dialect (四縣腔) which is widely spoken in the Northern and Southern Taiwan. The dialect variation divided by regions within Hakka please see Mantaro J. Hashimoto, *The Hakka Dialect: A Linguistic Study of Its Phonology, Syntax and Lexicon* (Cambridge: Cambridge University Press, 2010); Rongfu Zhong, *tai wan ke jia yu yin dao lun (Introduction to Taiwan Hakka Phonetics)* (New Taipei City: Wu-Nan Book Inc., 2004); Jie Zhang, Hanbo Yan, Yuwen Lai, and Shao-ren Lyu, "The nature of tone sandhi in Sixian Hakka," *The Journal of the Acoustical Society of America* 140 (2016): 3395; David Prager Branner, *Problems in Comparative Chinese Dialectology: The Classification of Min and Hakka* (Germany: De Gruyter, 2011); and the official teaching manual launched by the Taiwanese government see The Ministry of Education, Taiwan. *Bù biān bǎn Kèjìyǔ fēnjí jiàocái dì-èr cè jiàoshī shǒucè (Sixiàn qiāng)* (Teacher's Manual for the Second Level of Graded Hakka Language Teaching Materials (Four-County Dialect) - Ministry of Education Edition) (Taipei: The Ministry of Education, Taiwan, 2011).

⁴⁹⁸ Shou-Yin Lin, "My Language Learning Journey," Taiwanese American Archive, Aug 2019. <https://taiwaneseamericanhistory.org/blog/my-stories-689/>.

settlers' ancestral origin (the province of Guangdong/Canton, a coastal province in South China); and the other avers that it was the special spoken dialect that separated Hakka from the Holo people.⁴⁹⁹ In LIN Shou-Yin's childhood memory of visiting her uncle, who ran a clinic in Chao-Zhou township, she was aware of the fact that the neighbors there spoke another language she could not understand. That was the moment she encountered the dialect of Holo and realized that most Taiwanese speak Holo instead of Hakka.

Hakka, as a term to describe an ethnic category and a local dialect, was imported to Taiwan by the western missionaries in the second half of the 19th century. According to historian Cheng-Hui Lin, the term "Hakka" was originally a foreign term established in South China around 1850 before travelling to Taiwan through the Christian missions, and Yun-Feng Hsueh asserts that the Hakka and Holo distinction also emerged and has been documented by the 19th century western missionaries in Taiwan.⁵⁰⁰ Historian Hung-yi Chien demonstrates how the German missionary Ernst Johannes Eitel's (1838-1908) ethnography influenced early 20th century Hakka studies and the construction of a myth of Hakka migration.⁵⁰¹ Created by the 19th century westerners in South China, Hakka later became a common self-identified term for the people themselves, and it was interchangeable with the terms of Guangdong/Cantonese and Yue.⁵⁰²

⁴⁹⁹ Cheng-Hui Lin, "Political Persecution of Leftists during the 1950s- Cases Regarding the Work Committee of Taiwan Province of CPC and Taiwan Democratic Self-Government League," *Taiwan Historica* 60, np. 1 (2009): 395-477; Tien-fu Shih, "From "The Guest" to the Hakka (1): "The Guest" under the Principle of Bon-Gwan in the Household Registration System in the History of Chinah," *Global Hakka Studies*, no. 1, (2013): 1-56.

⁵⁰⁰ Lin, 2015; Shih, 2014; and Yun-Feng Hsueh, "The Historical Standpoint of the Taiwan Hakka: The Case of the Yi-Ming and the Yi-Wei War in 1895." Ph.D. Diss., National Taiwan University, 2009.

⁵⁰¹ This article is the English translation of the Author's 2016 Chinese paper: Hung-yi Chien, "Ernst Johannes Eitel's Missionary Ethnography: A German Origin of Hakka Studies," *Global Hakka Studies*, no. 7 (2016): 1-40.

⁵⁰² Lin, 2015.

Hakka women have been known especially in contemporary society and in the historical records for having the virtue of “diligence” by their participation in farming labor and religious rituals.⁵⁰³ Historically, the Japanese colonial surveys have shown that Hakka women, for the purposes of agricultural labor, had no foot-binding custom as did women in other ethnic groups in 19th century Taiwan.⁵⁰⁴ Historian Wei-An Chang states that non-foot binding is the most frequently mentioned characteristic of Hakka women in the historical archives.⁵⁰⁵ Examined by recent Hakka researchers, this type of hard-working female image was also portrayed through the gaze of the late-19th and the early-20th century westerners.⁵⁰⁶ For example, the German-born missionary E. Eitel in 1905 describes the hardworking Hakka women in Taiwan, and the American missionary Smith notes Hakka women’s great contribution and their fine cheese made from milk.

However, there is controversy surrounding whether the high labor participation led to a higher social position for Hakka women. The previously positive statement considering that Hakka women have an equal and liberal standing gender wise has been challenged. By examining such different types of data as archives, interviews, and statistics in a larger social

⁵⁰³ Su-Fen Chang, “A Research of Female Members in Beipu’s Chiang Family,” Master's thesis, National Central University, 2006.

⁵⁰⁴ The examination of the records Taiwanese Holo women with foot-binding custom in the Japanese colonial period see Ying-Chang Chuang and Arthur Wolf. “tai wan bei bu min, ke fu nv di wei yu sheng yu lv: yi ge li lun jia she de jian gou (The Social Status and Fertility Rate of the Northern Taiwanese Holo and Hakka Women: the Construction of a Theoretical Hypothesis),” in *tai wan yu fu jian she hui wen hua yan jiu lun wen ji (The Socio-Cultural Studies of Taiwan and Fujian Proceedings)*, Ying-Chang Chuang and Yin-Hai Pan eds., 97-112 (Taipei: Academia Sinica, 1994); Ying-Chang Chuang in 1992 has also stated that the it was barely seen any Hakka women with a foot-binding record. The geographical comparison of foot-binding custom in Japanese colonial period between Holo and Hakka women see Ko-hua Yap, “When Bound Feet Encounter Natural Feet: Ethnic Assimilation and Social Pressure,” *Journal of Chinese Ritual, Theatre and Folklore* 197 (2017): 107-133.

⁵⁰⁵ Wei-An Chang, “ke jia fu nv di wei: yi min nan zu qun wei dui zhao de fen xi (The Social Status of Hakka Women in Transition: A Comparative Analysis of Contrast with Hokkien Women),” in *ke jia wen hua yan tao hui lun wen ji (Hakka Cultural Studies Conference Proceedings)*, Cheng-kuang Hsu, Ching-Ching Peng, and Seo-Gim Lo eds., 243-270. Taipei: Council for Cultural Affairs, Executive Yuan, 1994.

⁵⁰⁶ Chien, 2016; Chang, 1994

context, recent Hakka researchers argue that their high number of laboring females and the lack of foot binding tradition was due primarily to their poor socioeconomic background and their remote living conditions in the mountainous villages, which usually required Hakka women to travel a long way for work. In addition, Hakka researchers find that the traditional division of labor within a Hakka family was very gendered, and some scholars, like Hsiu-Mei Chung, describe it as a patriarchy. Although Hakka women did provide a significant amount of agricultural labor force in the long pre-industrial period of Taiwan, they usually handled the very labor-intensive work, and their farming labor was devalued by framing it as part of domestic household work. Hakka men, to the contrary, were mostly the decision makers within the family and in charge of the household economic resources.⁵⁰⁷

LIN Shou-Yin was very close to her “a-po,” which means “grandma” in Hakka, during her childhood in the postwar era. In 2009 in the Newsletters of Taiwanese American Archives, LIN Shou-Yin wrote an article remembering her a-po as a classic Hakka woman (1882-1977). LIN Shou-Yin’s a-po had been through two world wars and the Cold War, and her nationality had shifted from Imperial China, to Colonial Japan, and then to the U.S.-supported Republic of China in Taiwan. Indeed, her a-po illustrated the image of hard-working Hakka women; yet, as the historical concept of contingency indicates, the fact that that LIN Shou-Yin’s grandfather passed away in 1922 caused her grandma, when she was only 40 years old, to become the only

⁵⁰⁷ Hsiao-Chuan Hsia, “shang pin jing ji chong ji xia de ke jia fu nv (The Impact of Commercial Economy on Hakka Women),” in *zhong fan mei nong (Back to Mei-Nung)*, Meinung People’s Association, ed. (Taichung: Morning Star, 1994); Hsiu-Mei Chung, “tan ke jia fu nv (Discussion about Hakka Women).” In *zhong fan mei nong (Back to Mei-Nung)*, Meinung People’s Association ed., 122-129 (Taichung: Morning Star, 1994); Chang, 1994; Yung-feng Chung, “ke jia ren de jia zu yu hun yin (Hakka Family and Marriages),” in *ke jia wen hua yan tao hui lun wen ji (Hakka Cultural Studies Conference Proceedings)*, Cheng-kuang Hsu, Ching-Ching Peng, and Seo-Gim Lo, eds., 281-292 (Taipei: Council for Cultural Affairs, Executive Yuan, 1994); Yi-Chuan Tsai, “The Mother-Daughter Relationship of Intimacy and Conflict: The Case Study of Hakka Women’s Discourses.” Master’s thesis, National Central University, 2012.

financial and care provider for a family that included one daughter and four sons. Although illiterate, LIN Shou-Yin's a-po understood and valued the significant future outcome of education. In 1899, the Government-General of Taiwan (臺灣總督府) launched the educational policy on students in the colonies to study in Japan with the Governmental Fund (官費內地留學), and it expanded the eligibility scope for applicants twice, in 1902 and 1906 respectively.⁵⁰⁸

Thus, she sold part of her farmlands and sent her four sons to study in Japan during the colonial period. Due to the colonial government's encouragement in educational assimilation and the lack of educational opportunities within Taiwan, Taiwanese historians have identified through archives and autobiographies that it gradually became a trend among the wealthy class families of the colonial Taiwan to send their children to study in Japan.⁵⁰⁹ Although there were fewer than 100 Taiwanese sent to Japan before 1910, the number rapidly increased in the 1920s and 1930s, increasing to 886 students in 1926 and gradually expanding to thousands after 1930. With the outbreak of the Pacific War in 1952, the estimated number of Taiwanese students in Japan was 7,091.⁵¹⁰

⁵⁰⁸ Yumi Sato and Sousuke Watanabe, "Senzen no taiwan· Chōsen ryūgakusei ni Seki suru tōkei shiryō ni tsuite (The Statistics of the Taiwanese and Korean Students in Pre-WWII Japan)," in *Shokuminchi kyōiku taiken no kioku (The Memories of the Colonial Educational Experience)*, Nihon shokuminchi kyōiku-shi kenkyū kai (The Historical Studies of Colonial Education Committee) ed., 82-99 (Tokyo: Kōsei-sha, 2005), 86.

⁵⁰⁹ Tsui-Lien Chen, "Taisho Democracy and Taiwanese Overseas Students in Japan," *Bulletin of Taiwan Historical Research, NTNU* No. 6, (2013): 53-100, 68-69; Shu-hui Lin, "Taiwanese Overseas Students' Self-construction in Memoir Writings: The Awareness of Boundary Crossing During the Japanese Ruling Period," *Taiwan International Studies Quarterly* 8, no. 4 (2012): 161-190, 164; Hachiro Kaminuma, "Nihon tōchi-ka ni okeru Taiwan ryūgakusei - dōka seisaku to ryūgakusei mondai no tenbō (The Students From Taiwan under the Japanese Rule: The Provision of the Issues on the Assimilation Policy and the Students from the Colonies)," *Kokuritsu kyōikukenyūsho kiyō (Bulletin of the National Institute for Educational Research)*, no. 94, 1978: 133-57; Feng-Kwei Pien, "Nationality movements of oversea Taiwan students in Japan during the colonial era," *Oceanic Culture Journal* 6 (2009): 1-30, 5-6.

⁵¹⁰ Historian Tsui-Lien Chen created a column of the number of Taiwanese students in Japan each year based on the data provided by Sato and Watanabe in their article (2005). Since only the data from 1919 to 1926 is shown on Chen's form, this chapter referred to the statistics listed in Feng-Kwei Pien's article (2009), on page 4. The column

According to the data (1922-1937) published on Taiwan sōtokufu gakuji nenpō (台湾總督府學事年報, the Annual Report of Education, Government-General of Taiwan (trans.)), the Taiwanese students studying in Japan were mostly located in Tokyo and Kyoto.⁵¹¹ From the autobiographical narratives, we also learn that instead of going alone, it was typical for Taiwanese siblings (usually brothers) to go together.⁵¹² A similar scenario was happening between LIN Shou-Yin's father and his brothers as well—the second-eldest brother studied electrical engineering, the baby brother studied medicine, and the third one (LIN Shou-Yin's father) was in humanities.⁵¹³ Although born at the end of the Japanese colonial era, LIN Shou-Yin still understood Japanese to some extent through growing up in a family that was mostly educated by the Japanese system.

in Pien's article contents Taiwanese students in Japan from 1909-1942, the original data comes from Chikushi Shirō, "Dong Jing zai xue Taiwan xue sheng sheng huo ji (Life experiences of Taiwanese students studying in Tokyo)," *Taiwan Times*, Dec 1942, p. 75-76.

⁵¹¹ The Police Officials at Taiwan Sōtokufu (eds.). *Tai wan zong du fu jing cha yan ge zhi (san)* (*The Development of the Police Officials at Taiwan Sōtokufu, volume 3*) (Taipei: SMC Publishing Inc., 1995), 23-25.

⁵¹² See the oral historical interviews and memoir of Taiwanese who studied in Colonial Japan, for example, Huang, Ch'i-chung and Pien, Feng-kwei (interviewer), "wan hua hong shi jia zu yu tai bei fa zhan zhi guan xi (The Huang Family of MengKa Speaks on their Experience in Taipei History and its Development)," *Taipei Archives*, no. 141 (2002): 177-197, 191; Zhaoyang Zhu and Zhongsheng Lin (writer), *zhu zhao yang hui yi lu: feng yu yan ping chu qing liu* (*The Memoir of Zhaoyang Zhu*) (Taipei: Vanguard, 1994), 83-90.

⁵¹³ Regarding the education of her father's siblings, we can see her mentioned in different part of her writings. LIN Shou-Yin also told me again during our oral historical interview in November 2021. However, as the TAMRI archives have shown, her father should be studied in humanities instead of economic or finance as LIN Shou-Yin remembered.

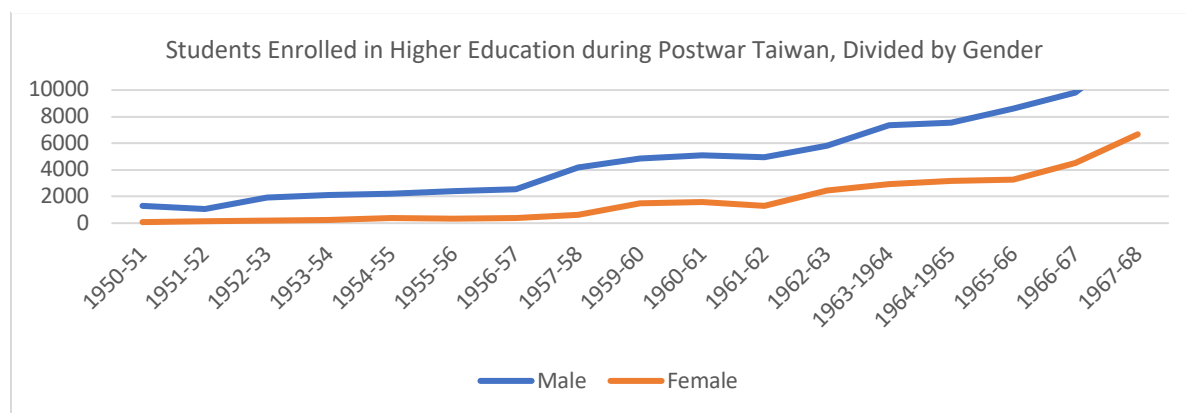
Like Father, Like Daughter

Retrospectively, LIN Shou-Yin gave the most credit to her father when it comes to the education and work opportunities she received. LIN Shou-Yin's experience of receiving a college degree and studying abroad in 1960s Taiwan seems unusual considering her Hakka ethnic identity or just that she was a woman at that historical period (see Table 6.1).⁵¹⁴ Similar to LIN Shou-Yin's *a-po*, her father cared about the children's education very much; yet her father considered education as crucial for the future of the next generation, and not only for boys but also girls. The belief of LIN Shou-Yin's father was very pioneering in postwar Taiwanese society, in a culture with a strong preference for sons over daughters.⁵¹⁵ The father's financial investment in and emotional support for daughters achieving a higher education was incredibly important, as fathers were usually the dominant decision makers of the family.

⁵¹⁴ The chart 1 is made by the author with the data from *Department of Education. Zhong hua min guo jiao yu tong ji, 1960-1967 (Educational Statistics of the Republic of China, 1960-1967)* (Taipei: Department of Education, ROC). The 1957 report includes previous data since school year of 1950-1951.

⁵¹⁵ The research on gender preference in postwar Taiwan has been conducted in disciplines such as anthropology, sociology, and demography with different methods such as ethnography, quantitative surveys, comparative studies, and historical examinations. See Margery Wolf, *Women and the Family in Rural Taiwan* (United States: Stanford University Press, 1972); Fred Arnold and Eddie C.Y. Kuo, "The Value of Daughters and Sons: A Comparative Study of the Gender Preferences of Parents," *Journal of Comparative Family Studies* 15, no. 2 (1984): 299-318; Williamson NE. *Sons or Daughters: A Cross-cultural Survey of Parental Preferences* (Beverly Hills, CA: Sage Publications, 1976); Coombs, LC and Sun T., "Familial values in a developing society: a decade of change in Taiwan," *Soc Forces* 59 (1981): 1229e55; Tin-chi Lin, "The decline of son preference and rise of gender indifference in Taiwan since 1990," *Demogr Res* 20 (2009): 377-402.

Table 6.1: Students Enrolled in Higher Education during Postwar Taiwan, Divided by Gender.



Like father, like daughter—during our oral historical interview, Yang expressed her admiration for her father, not just for his guidance and belief in his daughters, but also for his international health career. The strong influence of

LIN Shou-Yin’s father on her educational, professional, and political life has echoed the research findings from feminist historians from the Euro-American world that when it comes to the professional identities and opportunities of the pioneering women in STEM, their father or male siblings usually had a greater impact than their female contemporary sisters.⁵¹⁶ For example, Margot Fuchs illustrates how the first generation of women engineering students in Germany acquired their professional strategies from their personal network, usually looking up to their fathers and brothers, because they had no female models.⁵¹⁷ By analyzing the data from a 1956-1958 American Science Manpower survey, historian Margaret W. Rossiter shows that in many science fields that had less than an 8% female population, the women recognized as

⁵¹⁶ Ruth Oldenziel, “Multiple-Entry Visas: Gender and Engineering in the US, 1870–1945,” in *Crossing boundaries, building bridges: Comparing the history of women engineers, 1870s-1990s*, Annie Canel, Ruth Oldenziel, Karin Zachmann (eds.) (London; New York: Routledge, 2003), 11-50.

⁵¹⁷ Margot Fuchs, “Like Fathers—Like Daughters. Professionalization Strategies of Women Students and Engineers in Germany, 1890s to 1940s,” *History and Technology* 14, no. 1 (1997): 49-64.

“exceptions” and more recently and cynically as “tokens” joined such fields because of their personal network, such as already having family members or relatives working in the sciences.⁵¹⁸

In 1949, LIN Shou-Yin’s father had already been working as the TAMRI as an officer; TAMRI was a research facility originally established by Rockefeller Foundation and then switching to WHO in 1951.⁵¹⁹ According to LIN Shou-Yin, the TAMRI at Chao-Zhou township was a perfect workplace for her father not only because it was near but also due to its distinct characteristic of being somewhat of a semi-foreign concession, one of a very few spots that were not completely controlled by the Chinese Nationalist authoritarian regime in postwar Taiwan. The RMRI was built in 1949 at the same location after the demolition of a *Butokuden* (武德殿), a Japanese martial arts training center during colonial period.⁵²⁰ As many Taiwanese historians and the governmental public health administration have addressed, TAMRI resembled the postwar American influence on providing funds, introducing new anti-malaria methods and drug trials, conducting mosquito surveys, and establishing a public health model on the Chinese Nationalist ruling Taiwan after WWII. According to the 1949 staff directory, except for the chief directors, most of the employees at TAMRI were born, raised, and educated in Taiwan, which

⁵¹⁸ Margaret W. Rossiter, “Which Science? Which Women?” *Osiris* 12 (1997): 169–85.

⁵¹⁹ Wen-Hua Kuo, “Taiwan’s Malaria Eradication in a Global Context,” *Rockefeller Archives Center: Research Reports Online*, 2009. <http://www.rockarch.org/publications/resrep/kuo.pdf>

⁵²⁰ Reconstruction of Butokuden Folder, Feb 28, 1949- Sep 17, 1949. CDC Taiwan Archives, National Archives Administration of Taiwan (ROC), no. A327150000I/0038/1144/1

included two supervisors both graduated from the Taihoku Imperial University, the most prestigious colonial university during the colonial Taiwan.⁵²¹



Figure 6.2: TAMRI, 1950s.

⁵²¹ Staff List, CDC Taiwan Archives, National Archives Administration of Taiwan (ROC), no. 0038/1222/1/1. After Japan's surrender in 1945, the overseas Taiwanese students must compulsorily return from Japan to Taiwan under the "Returning Overseas Students from Japan to Taiwan Province of the Republic of China Policy (台灣省留日返省學生處理辦法)" enacted in 1946 by the Chinese nationalist administration which took over Taiwan at the end of WWII. See Ching-fen Lin. "The Recalling and the Screening of the Chinese Students Who Went to Japan and Received their Education in the Early Period After the War (1945-1951)." *Academia Historica* no.10, 2006, p.98-128, DOI: 10.7058/BAH.200612.0098. In 1935, there were 2,169 Taiwanese students who studied in Japan, and the number increased yearly. Till 1942, the number of Taiwanese students in Japan reached to 7,091. The largest portion of Taiwanese students in colonial Japan went but dropped off from the professional schools (專門學校), totally 1,939. The second greatest number was located in the categories of middle schools (中學校) and high women's schools (高等女學校)—there were 1,793 Taiwanese students who went to those two types of schools but dropped off. The total number of Taiwanese students who went to high schools (高等學校), pre-college schools (大學預科), and colleges was 588. The correct statistics does not exist since 1943. After Japan's surrender in WWII, there were about 5,000 Taiwanese students studying in Japan. See 電教育部奉頒抗戰期間留日學生甄審辦法及留日學生召回辦法遵將該省留日及留日返省學生以往處理情形報請核備, April 30, 1947. Foreign Education—Japan Folder[留學事務—日本], Ministry of Education Archives, no.197/066-23; Department of Education, Taiwan Province (ed.), *Taiwan sheng jiaoyu gaikuang (Overview of Education in Taiwan Province)*. Taipei: 1946, Department of Education, Taiwan Provincial Administration, ROC.

LIN Shou-Yin had been in the field with her dad during her childhood, and she remembers that the TAMRI was always her dream job: “I studied so hard, and I majored in entomology in college, just because I wanted to work at that WHO malaria research center where my dad was.” LIN Shou-Yin remembered watching her father collecting mosquito specimens around the southern Taiwan.

TAMRI became an observational field for LIN Shou-Yin to experience how foreign international health worked—How is science being practiced in her hometown? Why does capturing mosquitos in the forests help with the infectious diseases? These questions developed her interests in international health research on the one side; on the other, she had encountered several foreign researchers and their families, picking up English at TAMRI before she went to middle school.

LIN Shou-Yin’s father played a crucial role in her development, influencing her professional career as well as her political thoughts and actions. In some of the scenarios, they were entangled, which extends the image of first-generation women in STEM represented in the Euro-American contexts that often fit in a “father’s daughter” pattern. According to Fuchs, this pattern refers to those who chose the same profession as their admired fathers and were able to use his network of connections for advancement.⁵²² LIN Shou-Yin’s father studied humanities at Nihon University (日本大學文科専門) in 1920s Tokyo during the so-called Taisho Democracy period (大正デモクラシー, 1905-1925 or 1926), where a liberal and democratic movement across the social, economy, and cultural domains in Japan sparked intellectual conversations on liberalism, democracy, and socialism in higher education. In contrast to the intellectual influence

⁵²² Fuchs, 1997, 62.

LIN Shou-Yin's dad received during his colonial education, he was very disappointed at the social chaos, political corruption, autocracy, and infectious diseases outbreak brought by the Chinese Nationalist party from Mainland China after the end of WWII.⁵²³ He had deep resentment, especially after witnessing most of the Taiwanese intellectuals and elites executed or imprisoned during the February 28 massacre and later the martial law period, both instigated by the Chinese Nationalist regime.⁵²⁴ Even though freedom of speech did not exist during LIN Shou-Yin's childhood due to the authoritarian rule, her father would share his political views with her, which also took root in her teenage mind and empowered her series of actions against the interweaving school, state, and Cold War.

Weapons of the Weak: the Everyday Resistance of LIN Shou-Yin

No matter how the school agents of the authoritarian regimes seduced or threatened LIN Shou-Yin, she has never become a member of Chinese Nationalist Party. Her father's liberal political tendency impacted her early political resistance during school, which might seem subtle but is meaningful, especially considering the martial law environment. As compared to the authoritarian ruler's tangled web of mobilization and political recruitment in youth during martial law Taiwan, the fact that LIN Shou-Yin never joined the Chinese Nationalist Party was a

⁵²³ The history of the influence of Taisho Democracy on overseas Taiwanese students in colonial Japan please see: Tsui-Lien Chen, "Taisho Democracy and Taiwanese Overseas Students in Japan," *Bulletin of Taiwan Historical Research, NTNU*, no. 6 (2013): 53-100. The intellectuals of Taisho Democracy and its impacts on the politics, culture, education, and colonies see: Ryuichi Narita, "Taishō demokurashī to wa don'na demokurashīdatta no ka (What Kind of Democracy is Taisho Democracy)," in *Nihon no kin gendai-shi o dō miru ka (How to Approach the Modern History of Japan)*, Iwanami Shinsho Henshūbu ed., 88-89 (Tōkyō: Iwanami Shoten. 2010); Masao Ohta, *Taishō demokurashī kenkyū- chishiki hito no shisō to undō (The Study on Taisho Democracy: The Social Thoughts and Movements of the Intellectuals)* (Tokyo: shinsensha, 1990).

⁵²⁴ The social thoughts and political participations of the Taiwanese students studying in Colonial Japan see Chi, Hsu-feng Chi, "A study of Taiwanese Students in Japan during the Taisho Era," Ph.D. diss., Waseda University, 2010; and also Chi, "Kindai Taiwan no shin sedai hōritsu seinen to seiji seinen no tanjō (The Formation of the New Generation of Modern Taiwan—Youth in Law and Politics)," *Toyo bunka kenkyūjo kiyō* 13 (2011): 289-318.

form of passive political resistance. LIN Shou-Yin recalled a traumatizing experience she had while interviewing for high school in 1958:

It was Mr. Tsui-Chi Mai (麥穗歧), the Dean of Academic affairs at Pingtung Girls' High School (屏東女子高中), who interviewed me. Most of the questions he asked me during the interview were blurred, except for one question; I still remember it vividly. He asked, who is the contemporary role model you respect the most? I did not hesitate but immediately came out with the answer 'Mr. Guo-Jen Wu (吳國楨), the former President of Taiwan Province from 1949-1954.' Suddenly, Mr. Mai's face contorted with rage, scolding me for me bringing up the name of Mr. Kuo-Jen Wu—'Don't you know that Guo-Jen Wu is a traitor!?! Why do you recognize him as your role model?!' I was completely shocked and could not speak a word. Mr. Mai continued saying that, 'I guess you're just too young and naïve, do not mention Guo-Jen Wu's name, never again. You understand?' I was deeply terrified by the authority and by the Chinese Nationalist Party."⁵²⁵ The Party questioned the loyalty of Guo-Jen Wu due to his different opinions about such policies as the agricultural reform and the direction of the youth preparation and recruitment for the party. Thus, he was forced to resign from the position of the governor of Taiwan province in 1954.⁵²⁶

⁵²⁵ Shou-Yin Lin, 2015.

⁵²⁶ The China Youth Corps (CYC, 中國青年救國團) was the most powerful and resourceful organization of the Chinese Nationalist Party/state for the recruitment, education, and management of young people in Taiwan to support the single party regime and its anti-communist ideology during martial law Taiwan. Under the commander Chiang Kai-Shek's direction, the China Youth Corps established in 1952 and directed by Chiang Chi-kuo, a son of Chiang Kai-Shek. The research on the role of the China Youth Corps and its impact on martial law Taiwan see, Jen-Wen Cheng, "A Study of "Free China" to Discuss the Role of China Youth Corps in 1950s," *Journal for the Study of the Party Assets* no.2, (2018): 61-86; Wei-Sung Lee, "*Research of Chang-Ching Kuo and China Youth corps (1969-1988)*," Master's thesis in the History Department at National Central University, Taiwan, 2006; Sheau-hui Chen, "Enhancement of Social Associations Results from the Koumintang's Reorganization in 1950," *Journal of National Taiwan College of Arts* no.63, (1998): 209-229; Chia-lung Lin, "The Political Movement of Taiwan under the authoritarian clientelism: A Political Explanation of the Social Foundation of the Democratic Progressive Party,"

The scenario above has appeared in several articles written by Christine Yang as an upsetting experience of being censored by an agent of the authoritarian regime. Yang remembered that Mr. Guo-Jen Wu visited TAMRI in the early 1950s during his term, and her father expressed his admiration for him by addressing that, rather than maintaining an exclusive dominant circle of Chinese mainlanders, Mr. Wu was one of the very few Chinese Nationalist leaders during the postwar era who was willing to recruit and trust Taiwanese. After resigning from the governor's position in Taiwan in April of 1954, Gou-Jen Wu moved to Chicago and started to publicly criticize the Chinese Nationalist Party in Taiwan. The Chiang administration denied all Wu's accusations and denounced him as a traitor.⁵²⁷

Although she had already encountered political censorship in her school interview, LIN Shou-Yin was not intimidated by that scenario; instead, later in 1960, in her senior year in high school, LIN Shou-Yin organized a student strike to boycott a current events quiz scheduled by the school authority:

“The school did not help the senior students to prepare for the standardized exam for college, to the contrary they kept giving us some extra tests about current news events that disrupted us from staying focused on our studies. I disliked it, and therefore I decided to organize a boycott against the unnecessary quiz. As an organizer, I talked to many

Taiwan: a Radical Quarterly in Social Studies 2, no. 1, (1989): 117-143; Jeng-liang Julian Kuo, “The Reach of the Party-state: Organizing Local Politics in Taiwan,” Ph.D. diss., Yale University, 1995.

⁵²⁷ Guo-Jen Wu (1903-1984) was born in Shanghai, China. In 1926, he received his PhD degree in political sciences from Princeton University. Since coming back to China in 1926, Guo-Jen Wu had played a very crucial role in the Chinese Nationalist Party, especially during the time when the Chinese Nationalist Party retreated to Taiwan in 1949, he was the key person in gaining the supports from the U.S. government. Guo-Jen Wu had also known as “Mr. Democracy” because of his liberal political ideology. While it also resulted in his conflicts with conservative members of the party. In 1953, he resigned from his position as governor and left for the U.S. with his family. After being expelled from the party, Wu also publicly criticized the Chinese Nationalist party-state in America, see K.C. Wu, “Your Money is Building a Police State in Taiwan,” *Look*, June 29, 1954.

other senior students to join this protest. I might be so overly naïve that I didn't consider the consequence, since the society was still under White Terror (ed: the martial law period of Taiwan) so my action hit the nerve of the Chinese Nationalist authority. Types of protests—no matter it was labor strike, school strike, or my boycott of unnecessary school exams, they were all recognized as severe rebellious actions against the Chinese Nationalist government. The authority even conducted an investigation on my dad, questioning him if he knew any other adult insurgents behind the student protest. Fortunately, my teacher Chi-Pin Lu (呂治平), a retired military officer and a member of the Mongolian and Tibetan Affairs Commission, helped me solve this issue. Eventually my punishment was to write a formal apology letter. If it wasn't for my teacher, Lu, I would have demerits for my defiantly misbehavior on my record, which might have cost my original graduation year to be postponed.”⁵²⁸



Figure 6.3: LIN Shou-Yin (left) and her classmate at the gate of Pingtung Girl's High School, 1955.

⁵²⁸ Shou-Yin Lin, 2015.

After the uprising in her last year of high school, LIN Shou-Yin received college admission in entomology at National Chung Hsing University (國立中興大學). Departing from the south, LIN Shou-Yin moved to the university, located in Taichung, the so-called sunny city in the central Taiwan. Looking back, LIN Shou-Yin still remembers that TAMRI was her dream job, which drove her into studying entomology: “Since I was a child I always wanted to work at TAMRI, I really thought I would work at TAMRI after college, just like my father did.” Rather than planning on studying abroad, LIN Shou-Yin was picturing a future at the WHO/former Rockefeller Foundation malaria research institute in her home county.

In 1960s Taiwan, military instructors (軍訓教官) played a key role in political censorship, grading students’ conduct and behavior and promoting the party’s propaganda in colleges.⁵²⁹ Regarding her barely passed subject in conduct and morality (操行), Christine Yang believes that the lower-than-average score was due to her refusal to join the Chinese Nationalist Party. LIN Shou-Yin’s barely passing conduct score also prevented her from applying for scholarships. In martial law Taiwan, the score of conduct was crucial as a guarantee for patriotic loyalty and morality. For many college graduates who planned to study abroad, joining the Chinese Nationalist Party meant having a ticket to a promising future, as the one-party state provided study abroad scholarships for young members.⁵³⁰ Joining the party was also a common

⁵²⁹ The history of military instruction in martial law Taiwan see, Tai-Han Li, “dang tuan, jun shi yu jiao yu - yi jiu wu ling nian dai xue sheng jun xun jin ru xiao yuan zhi yan jiu (Party, Military, and Education: the Research on the Military Instruction Launched in the 1950s Campus),” Master’s thesis, National Central University, 2002.

⁵³⁰ For example, the Dr. Sun Yat-Sen Scholarship (中山獎學金, or 中山學術獎學金) that established by the Chinese Nationalist Party in 1960 supports party members to study abroad. See Po-Shen Wang, “The Elite Recruitment of Political Parties: The Dr. Sun Yat-Sen Scholarship of the KMT,” Master’s thesis, National Chengchi University, 2019.

patriotic performance and self-protection against the intrusive mass surveillance within the society. For those students who were more “loyal” to the party, the member badge was useful; they earned credits for their future career by spying on and reporting other students’ behaviors for the autocracy during the Cold War.

How do we interpret LIN Shou-Yin’s decisions and actions while facing the constraints in the authoritarian system? They are definitely not obedient behaviors, yet to what extent can we say they are a form of political resistance? Although LIN Shou-Yin’s story seems irrelevant to peasant history, it still echoes James Scott’s breakthrough approach to the research on political resistance and historical transition. In *Weapons of the Weak*, James Scott reminds us that those organized rebellions that truly resulted in a “revolutionary” impact on history are actually the crucial but very few historical events; to the contrary, the subordinate group responds to domination often in the subtle but powerful forms of “everyday resistances” that receive less attention as compared to those big eventful strikes in the existing literature.⁵³¹

Bringing up the “politically incorrect” answers to authority, organizing a boycott of school exams, bucking tradition as a woman waiting to go to college and study STEM, and declining the promising future of joining the Chinese Nationalist Party—they are LIN Shou-Yin’s everyday resistances to the authority in Cold War Taiwan. They seem trivial, but it is these micro-historical scenarios that help us to understand how young Taiwanese responded to the

⁵³¹ James Scott, *Weapons of the Weak* (New Haven: Yale University Press, 1987). Through the ethnography in one Malaysian rice village in 1980, Scott’s influential analysis of the Malaysian peasant’s responses to domination develops a new analytical approach in class conflict and extending the flexibility and possibility of the notion of resistance. Rather than emphasizing those easily identified organized rebellions in the history, this book focuses more on the “covert” resistances, as Scott defined, such as ‘foot-dragging, evasion, false compliance, pilfering, feigned ignorance, slander and sabotage.’ It has been controversial while the covert resistances should be recognized as a form of resistance if they do not cause reform or any systematic changes; however many researchers found Scott’s analysis useful in understanding the East Asian and Southeast Asian contexts.

authority, autocracy, and authoritarianism in their everyday life during 1950s-1960s. Moreover, for many foreign scholars and advisors during the same period, even some who were not specifically close to the Chinese Nationalist regime, the upset, depressed, and angry condition of Taiwanese could not be captured by their observations due to the enormous terror in society caused by martial law.

Rewritten and converted into articles published in overseas Taiwanese newspapers, LIN Shou-Yin's everyday resistances in adolescence reverberate in building an overseas Taiwanese community among students and young professionals, particularly those who flout authoritarianism. Through the increasing publication and circulation of their independent magazines and newspapers, it has been common to see overseas Taiwanese sharing their own everyday-resistance memories during Martial Law Taiwan in the 1950s and 1960s. Even though many of them did not end up in jail or on death row like the earlier protesters during the February 228 incident and the early-1950s Mass Arrest on the island, the exploitation of their human rights and freedom was real, their everyday life resistances were real. LIN Shou-Yin's further political engagement in the Taiwanese independency movement after she moved to the U.S. did not randomly occur but is path-dependent on the sequence of her encounters with the agents represented the authoritarian state. By sharing LIN Shou-Yin's everyday resistances against the authoritarian agencies, the older Christine Yang has engaged in shaping the collective memories of the Taiwanese who left the island of oppression. The sequence of everyday resistances matters.

LIN Shou-Yin and Her Colleague’s “Transnationally-Gendered-Leverage” and the “Rich American Dreams” at NAMRU-2 in Taiwan, Late-1960s

After receiving a college degree in entomology, LIN Shou-Yin did not follow her childhood dream going back to TAMRI in her hometown. Instead, she applied for a laboratory technician position at the NAMRU-2 in Taipei. The hiring information was through her father’s former coworker at TAMRI, who already worked at NAMRU-2, that LIN Shou-Yin was able to know about the open position at the lab.⁵³² She told me that, she did not know exactly what the research would be while applying for the job, but NAMRU-2 was well-known for its better pay and as an American-owned research institute. Chun-Mei Chang(張春梅), one of LIN Shou-Yin’s NAMRU-2 coworkers who joined the laboratory a little bit later in the summer of 1966, also got her offer through the recommendation of her college friend who already worked there.⁵³³ Chun-Mei Chang remembers the person named Jer-Yen Lin (林哲仁), who is about two to three years older than her and graduated from school of pharmacy at National Taiwan University (NTU). From both the experiences of LIN Shou-Yin and Chun-Mei Chang, the entry technician hiring at NAMRU-2 seemed to be less official and young people relied their personal ties to their family, friends, and associates.

According to LIN Shou-Yin,

“For many young people in my generation, NAMRU-2 was one steppingstone on the way to studying abroad, because we were able to work with many American scientists,

⁵³² Shou-Yin Lin, phone interviewed by the author on January 4, 2022.

⁵³³ Chun-Mei Chang, interviewed by the author at Burlingame, CA on August 11, 2022.

practicing our English, listening and speaking in a foreign facility before going to the U.S.,”⁵³⁴

LIN Shou-Yin clearly knew this would not be a life-long term job, but it would be a perfect work experience that helped with getting a good referral letter for her application for an American graduate school. Her coworker Chun-Mei Chang (1943–Present) also went to study abroad at the University of Michigan after working in the Department of Clinical Investigation at NAMRU-2 for two half years (Summer 1966 to Winter 1968). They took a group picture at the laboratory right before LIN Shou-Yin left for her trip to America.



Figure 6.4: From the left to right: LIN Shou-Yin, Chun-Mei Chang, Chen Mei Chen (陳美珍), and Tsui Cui Huang (黃翠珠) at NAMRU-2 lab, 1967 (LIN Shou-Yin's personal collection).

⁵³⁴ Shou-Yin Lin, phone interviewed by the author on November 18, 2021.

On the U.S. side, the NAMRU-2 and other U.S. governmental officials were approved and pleased by the fact that the NAMRU-2 work experience benefited a very huge number of Taiwanese technicians to study overseas. According to the United States Information Service (USIS), “A special point of pride is the number of former laboratory technicians who have gone abroad for advanced study in specialized fields.”⁵³⁵ In the colored pamphlet entitled *Outpost against Disease: U.S. Navy Medical research in the Pacific* released by the USIS on October of 1961, the USIS also introduced one recent departee Dr. John Shang-fa Yang who received a PhD in biochemistry at Utah State University and continued to do postdoc work at University of Wisconsin in 1961. According to the NAMRU-2 record, there had been 14 former NAMRU-2 local fellows who studied abroad, mostly to the U.S., in the year of 1961 — and more than half of them were women (see table 6.2).⁵³⁶

Table 6.2: The former NAMRU-2 employees studying abroad by the year of 1961.

The former NAMRU-2 employees studying abroad by the year of 1961 ¹				
Name	Gender	Country	Facility	Major
Simon H. Chang	M	US	Oklahoma State University	Virology
Philip Ch’uan Chen	M	US	Loyola University	Microbiology
Stephen Chen	M	US	University of West Virginia	
Catherina Chou	F	Brazil	N/A	Plant Pathology
Flora Huang	F	Canada	McDonald College	Biochemistry
Yao-min Huang	F	US	University of Wisconsin	Entomology
Tsau-yen Lin	M	US	University of California	Biochemistry
Lucy Hui-ling Liu	F	US	Manhattan Eye and Throat Hospital	Post-Graduate Nursing
Regina Jui-chen Tsai	F	US	Wills Eye Hospital (Philadelphia)	Post-Graduate Nursing
Catherine Tsao	F	US	Oklahoma State University	Plant Pathology
Agnes Wang	F	US	North Carolina State College	Chemistry
John Sang-fa Yang	M	US	Utah State University	Biochemistry
Huei-Ying Yu	F	US	University of Washington	Entomology

⁵³⁵ United States Information Service, 1961, 26.

⁵³⁶ United States Information Service, 1961, 61-62.

For the entry-level local technicians, NAMRU-2, as a foreign American facility, symbolized the meanings of modernity, development, richness, and better lives. Both Lin and Chang mentioned the cafeteria at NAMRU-2 was a fancy and western spot serving items such as pasta, bread, salad, and burger. LIN Shou-Yin remembered her first time tasting clam chowder was at NAMRU-2,

“Oh my god, it tasted SO amazing! I have never had anything like that. We usually brought our own lunch box to work, but sometimes we would like to try... in my memory it was probably the most delicious soup I have ever had in my life... but now I look back, especially after living in the states for a few decades, I start to wonder if they were just serving the can soup we see at the groceries?”⁵³⁷

For Chun-Mei Chang, it was the free and unlimited coffee that surprised her the most. She would sneakily bring a bowl of Americano coffee to Dr. Jer-Nam Lin, her boyfriend and later partner, who went to the medical school at NTU where their classroom was just next to the NAMRU-2 building.⁵³⁸ According to Dr. Jer-Nam Lin, for him he observed the gap between NAMRU-2 and NTU because they were physically so closed to each other. The most dramatic difference, for example, Taiwan is famous for its tropical weather but only the American facility has AC, while the NTU did not so the folks (and they were mostly man) would only wear a tank top.⁵³⁹

⁵³⁷ Shou-Yin Lin, phone interviewed by the author on January 4, 2022.

⁵³⁸ Chun-Mei Chang, interviewed by the author at Burlingame, CA on August 11, 2022. Dr. Jer-Nam Lin also talked about this in his autobiography, see Jer-Nam Lin, 2019.

⁵³⁹ Dr. Jer-Nam Lin, interviewed by the author at Burlingame, CA on August 11, 2022.

NAMRU-2 is described as rich, boogie, and generous, according to these former Taiwanese female technicians. LIN Shou-Yin remembers their pay was also better than other Taiwanese companies in general. She described to me that every month they went to the accountant and would receive a huge stack of cash in New Taiwan Dollar.

The NAMRU-2 operating guideline was to concentrate on a given problem by creating a team across the existing disciplines and departmental settings. For example, by 1961, a full half of the research staff from virology to clinical investigation was engaged in work on trachoma, which was also the project from 1965-67 that LIN Shou-Yin participated in.⁵⁴⁰ She was working at Dr. E. Russell Alexander's laboratory with a few colleagues, and some of them later became her friends (see Figure 6-4). Most of them were working specifically on the initial stage of virus isolation by injecting the virus specimen to embryonated chicken eggs so as to observe the cultivation of the virus. It was a crucial procedure before moving onto animal and human trials. Except for the annual ritual for sacrificed animals, LIN Shou-Yin has never used monkey experimental subjects while working on trachoma vaccine production. Chun-Mei Chang, to the contrary, worked closer to experimental animals but she remembers that the labor was highly gendered—mostly men took care of animals, and NAMRU-2 had an animal section on the top/4th floor which required heavily physical work.

⁵⁴⁰ United States Information Service, 1961.

LIN Shou-Yin's Participation in the Trachoma Vaccine Experiments

According to USIS's description in 1961, trachoma vaccine development in Taiwan was one of NAMRU-2's major contributions to "Asian health" since it began operations in 1955.⁵⁴¹ However, in the photo captions, only the scientist researchers involved in the trachoma vaccine studies were listed; the predominately local female technicians remained unknown. Aside from the section of trachoma vaccine research at NAMRU-2, a photo of a Taiwanese female technician standing in the middle of the NAMRU-2 laboratory is displayed on the same page in this pamphlet. But the female technician was treated like part of the lab background, as the photo had no written description. In the picture's original caption, USIS was trying to send the message that "Modern laboratories help speed the development of new knowledge and new techniques;" thus, local female technicians as a collective were physically centered but symbolically marginalized among many onsite photos shared in the USIS pamphlet (see Figure 6.5).



Figure 6.5: A photo in NAMRU-2 Outpost against Disease (p.17) to demonstrate the modern biomedical research laboratory at NAMRU-2 Taiwan without giving the information of the model at the center of this picture.

⁵⁴¹ United States Information Service, 1961, 3.

Beginning in the mid-1950s, NAMRU-2 launched a series of laboratory studies on trachoma virus and vaccine with the help of many Taiwanese scientists and technicians. The research can be divided into three parts: (1) field studies: epidemiological work for virus collection; (2) lab research: the isolation of virus strains; and (3) vaccine trials on animal and human subjects.⁵⁴² The isolation of virus strains and the trachoma epidemiological studies were mutually shaped. On the one hand, many samples of virus specimens were collected from the epidemiological survey. For example, NAMRU-2 researchers Dr. Robert L. Woolridge and Dr. J. D. Gillmore, following eye examination, diagnosis, and classification by ophthalmologists, gathered samples of eye cultures from 404 children (pre-school and first-grade) in the Taichung, Taipei, and Kaohsiung regions of Taiwan.⁵⁴³ The information on the epidemiological pattern of trachoma was crucial for NAMRU-2 researchers to decide at what age and in what places vaccine may be used effectively.⁵⁴⁴

Instead of participating in field work, LIN Shou-Yin participated in the virus isolation process at the virology laboratory from 1965 to 1967 while supervised by Dr. E. Russell Alexander.⁵⁴⁵ She and her lab coworkers mostly worked with eggs—the technicians were responsible for inoculating the eggs with the specimens and culturing them in the yolk sac of a chicken embryo. According to *The Washington Post's* report on a federal employer stationed in the Pacific, NAMRU-2 in Taiwan was considered among the first in the world to isolate the

⁵⁴² “TAIWAN NAMRU 2, 1961.” Box 38, Folder 3, Tillman Durdin Papers (MSS 0095), UC San Diego Archive.

⁵⁴³ R. L. Woolridge and J. D. Gillmore, “Bacteriological studies on trachomatous and normal persons from three areas on Taiwan,” *Bulletin of the World Health Organization* 26, no. 6 (1962): 789–795, 790.

⁵⁴⁴ Robert L. Woolridge and J. Thomas Grayston, “Trachoma Infections on Taiwan: Epidemiology, Prevention and Chemotherapy Studies,” *The Medical Journal of Australia* 2, no. 8 (1966): 348–351, 348.

⁵⁴⁵ See footnote 1.

trachoma virus and to work on vaccines to either control or prevent the disease during the 1960s.⁵⁴⁶

Unfortunately, I do not have pictures of LIN Shou-Yin working in the lab (I could not find any in the archival collection or her personal collection), but a photo taken in 1965 from the collection of Tillman Durdin might help us to reconstruct LIN Shou-Yin's work environment. In Tillman Durdin's photo, two Taiwanese technicians, T. T. Chiu (bottom) and Y. Y. Lin (top), were with Robert L. Woolridge (middle) and the head of the Department of Immunology inoculating eggs with the virus, which would grow on the living tissue of the chick embryo (see Figure 6.6).

⁵⁴⁶ Kluttz, J. "Navy Developing Trachoma Vaccine," on Nov 20, 1963, *The Washington Post, Times Herald* (1959-1973); ProQuest Historical Newspapers: The Washington Post, pg. D1.



Figure 6.6: NAMRU-2 trachoma virus inoculation (Box 38, Folder 3, Tillman Durdin Papers (MSS 0095), UC San Diego Archive).

As for NAMRU-2 global health researchers, they looked forward to the anticipated full isolation and purification of trachoma virus strains so that they could be used for developing a standardized diagnosis of trachoma. Therefore, the work of LIN Shou-Yin and other technicians at NAMRU-2 was important to test the lead researchers' hypothesis and also their doubt in the ophthalmologists' clinical judgement. Indeed, the NAMRU-2 researchers Woolridge and Grayston mentioned that "the diagnosis of trachoma rests on the clinical impression of the ophthalmologist. These impressions vary among ophthalmologists and with the same ophthalmologist from examination to examination of some patients."⁵⁴⁷ The success of virus isolation would improve identifying the trachoma patient population with a standardized

⁵⁴⁷ Woolridge and Grayston, 348.

identification of the trachoma virus strains rather than relying on a diagnosis based on clinical signs and symptoms.

Before LIN Shou-Yin joined the lab, the NAMRU-2 research team collected and stored the trachoma virus from 150 frozen eye specimens developed from 116 trachoma-infected humans between 1959–1960, mostly from first-grade school children.⁵⁴⁸ For the virus specimens collected in Taiwan’s schools, four specimens were collected from Taipei, one from Miaoli, one from Hsinchu, one from Kaohsiang, and the greatest number, fifteen virus specimens, from Taichung. The domestic virus collections led to the following isolation process for a total of 29 trachoma viruses, including the virus strains collected and shipped from outside Taiwan.⁵⁴⁹

Becoming Christine Yang, Becoming Overseas Taiwanese: LIN Shou-Yin’s Professional Migration and Her Engagement in the Overseas Taiwanese Independence Movement

In the summer of 1967, LIN Shou-Yin and her fiancé Walter Yang (YANG Mao-Chia, 楊茂嘉) relocated to Evanston, Illinois. It might seem mysterious that two young Taiwanese would decide to move 7,535 miles away from their home country to a suburban town in the American Midwest where more than 85 percent of population in 1970 was White.⁵⁵⁰ “I was following the wave of studying abroad to the U.S.,” Christine Yang said in both her previous writing and our oral historical interview. Dr. Russell Alexander, her boss at NAMRU-2, had

⁵⁴⁸ J. Thomas Grayston, San-Pin Wang, Robert L. Woolridge, and Yen-Fei Yang, “Trachoma Studies of Etiology, Laboratory Diagnosis, and Prevention,” *JAMA* 172, no. 15 (1960): 89-98.

⁵⁴⁹ See chapter 3 and the primary source from J. Thomas Grayston, San-Pin Wang, and Paul B. Johnston, “Etiologic Studies of Trachoma on Taiwan,” *Proceedings of the Society for Experimental Biology and Medicine*, 103, no. 3 (1960): 596–599.

⁵⁵⁰ According to a US census report published in 1978, the population of Evanston by 1970 was 11112, 000. The racial demography was 86.6 % white, 12.8 % black, and 0.6 % refers to “others” which includes Asian residents. However it wasn’t sure that if Hispanic population was counted in the category of black or the others. See Population Estimates by Race, for States: July 1, 1973 and 1975. FEBRUARY 1978 REPORT NUMBER P23-67.

written a strong referral letter for her applications to graduate programs in biology. And from the two admissions she received, she accepted at Northwestern University, instead of the University of Mississippi with funding, partly because her fiancé was admitted into the PhD program in materials science from Northwestern as well.⁵⁵¹

In 1965, while LIN Shou-Yin was working at NAMRU-2 and preparing to study abroad, Walter flew to Chicago to start his doctoral program after becoming engaged to LIN Shou-Yin. They met in 1964 during LIN Shou-Yin's senior year in college, after which Walter Yang became another influential man in her life besides her father. Walter Yang was born in 1940 in Pingtung, the same county LIN Shou-Yin was from. In the same year they met, Walter Yang was completing his mandatory military service in the air force that coincidentally was located near her college.



Figure 6.7: LIN Shou Yin/Christine Yang and Walter Yang at Northwestern University, Evanston, 1967 (LIN Shou Yin's personal collection).

⁵⁵¹ The other admission was from University of Mississippi in the same year but with scholarship.

LIN Shou-Yin's connection with Walter Yang dramatically shifted her life path and identities. First, her name was changed from LIN Shou-Yin to Christine Yang. She used the name Christine when moving to the United States along with her marital name "Yang." "Christine Yang" is not only her legal name in the United States but also demonstrates her new identity as she was becoming a Taiwanese American. She also had a pen name, Yu-Ting (雨亭), which was specifically for her publications in the radical overseas Taiwanese newspapers in the United States, which were considered the dissenting voice challenging the authoritarian regime during martial law. As sociologist Norbert Elias has argued, naming is an identification process. Our first name refers to our individual self, and our surname reflects the "We" identities.⁵⁵² As many sociologists have elaborated, the first names carry their contemporarily distinctive social and cultural traits, both first names and surnames contribute to identities of gender, race and ethnicity, and social class.⁵⁵³

Without Walter's encouragement, however, LIN Shou-Yin said she wouldn't have considered studying at Northwestern University and moving from a tropical island to Evanston, an American small town with lots of snow. In the second half of the 19th century, Evanston's early development was inextricably tied to Northwestern University. Evanston township was originally designed into nine wards, but over time the wards not only divided different communities but also resulted in sharp socio-economic differences between communities. Within the nine wards divided by Evanston's city planning, 85 percent of the city's Black residents lived

⁵⁵² Norbert Elias, *The Society of Individuals* (Chicago: University of Chicago Press, 2010).

⁵⁵³ Richard Alford, *Naming and Identity: A Cross-Cultural Study of Personal Naming Practices* (New Haven: HRAF Press, 1988); Jane Pilcher, "Names and "Doing Gender": How Forenames and Surnames Contribute to Gender Identities, Difference, and Inequalities," *Sex Roles* 77 (2017), 812–822; Diana Boxer and Elena Gritsenko, "Women and last names across cultures: Reconstituting identity in marriage," *Women and Language* 28, issue 2 (2005): 1–11; Roland G. Fryer and Steven D. Levitt, "The Causes and Consequences of Distinctively Black Names," *The Quarterly Journal of Economics* 119, no. 3 (2004): 767–805.

in the fifth ward, while less than 15 percent of the whole town's population were Black. It had been a promising place that attracted not only the White educated liberals in the North but also for the Black Americans leaving the South to find more opportunities in careers and education for the next generation.⁵⁵⁴ The institutional narratives have often represented Evanston progressively and morally as a successful case of how racial integration and equal opportunity was achieved.⁵⁵⁵ Recently, some scholarship has reexamined the history of racial segregation in schools, housing, and work in American suburbs; among them, the integration movements in the often labeled progressive northern cities such as Evanston.⁵⁵⁶ As a demonstration of how colorblind racism operates, the history of the ongoing and incomplete de-segregation of Evanston reveals that institutional racism and discrimination have been downplayed and ignored because of the colorblind belief that race and ethnicity does not affect equal opportunity among individuals.⁵⁵⁷

One color that has received relatively little attention is yellow (and brown as well). According to a US census report published in 1978, Evanston's racial demography was 86.6 percent White, 12.8 percent Black, and 0.6 percent "others."⁵⁵⁸ According to sociologist Chien-Juh Gu, more than 80 percent of Taiwanese immigrants in the Midwest reside in the greater

⁵⁵⁴ Mary Barr, *Friends Disappear: the Battle for Racial Equality in Evanston* (Chicago, the University of Chicago Press, 2014), 28 and 57-59.

⁵⁵⁵ Frances E. Willard, *A Classic Town: The Story of Evanston by "an Old Timer"* (Indianapolis: Woman's Temperance Publishing Association, 1891); Dino Robinson, *Gatherings: The History and Activities of the Emerson Street Branch YMCA, Evanston Illinois* (New York: Shorefront, 2004).

⁵⁵⁶ Barr, 2014; Andrew Wiese, "Black Housing, White Finance: African American Housing and Home Ownership in Evanston, Illinois, Before 1940," *Journal of Social History* 33, no. 2, (1999): 429-60; Rodney Harrell, *Understanding Modern Segregation: Suburbanization and the Black Middle class* (College Park: University of Maryland, College Park, 2008).

⁵⁵⁷ Meghan A. Burke, "Color-Blind Racism," in *The Cambridge Handbook of Sociology: Specialty and Interdisciplinary Studies*, edited by Kathleen Odell Korgen ed., 21-29 (Cambridge: Cambridge University Press, 2017); Charles A. Gallagher, "Color-Blind Privilege: The Social and Political Functions of Erasing the Color Line in Post Race America," *Race, Gender & Class* 10, no. 4 (2003): 22-37.

⁵⁵⁸ However it wasn't sure that if Hispanic population was counted in the category of black or the others.

Chicago area, not in Evanston.⁵⁵⁹ Christine Yang and her husband did not live in the fifth ward nor another White neighborhood; instead, they were staying in Northwestern's campus housing, which was located in Ward 7 until they both graduated—"Walter and I were planning to marry after completing our education, but we later realized that if you were a married couple and you both were graduate students, you were qualified to apply for the student housing which would save us a lot of time and money. Therefore, we, kind of in a hurry, held a small but lovely ceremony at the church of our campus on a Saturday (September 9, 1967) before the semester started."⁵⁶⁰ Her wedding dress was borrowed from another Taiwanese student, and neither their parents nor family members were able to witness the moment since under martial law restrictions Taiwanese could not travel abroad easily and freely. However, that was how LIN Shou-Yin officially became Christine Yang, in the town of Evanston, in northern Illinois.

Along with other Taiwanese students in the greater Chicago area, LIN Shou-Yin/Christine Yang joined the Taiwanese transnational independence movement and the larger cross-region radical network, which started in the 1950s and was gradually established in the 1960s. Some leading members, such as Peter Wen-Shiung Huang, mentioned the civil rights movement's impact on this overseas Taiwanese independence movement.⁵⁶¹ LIN Shou-Yin/Christine Yang went in-person to demonstrations on affairs regarding Nationalist Chinese rule, US-Taiwan relations, and to disseminate the ideas of building a new nation named the Taiwan Republic. LIN Shou-Yin/Christine Yang also went to protest in support of Peter Wen-

⁵⁵⁹ Chien-Juh Gu, *The Resilient Self: Gender, Immigration, and Taiwanese Americans* (New York: Rutgers University Press, 2017), 22.

⁵⁶⁰ Shou-Yin Lin, "jiehun wushinian zagan (Reflections on Fifty Years of Marriage)," Taiwanese American Archives, October 2, 2017.

⁵⁶¹ Peter Wen-Hsiung Huang, "Si er si ci jiang shi jian de hui gu yu fan si (Looking Back and Reflecting on the 4.24 Assassination Attempt on Chiang Ching-Kuo)," WU San-Lien Taiwan History Materials Foundation (accessed March 1, 2023), http://www.twcenter.org.tw/thematic_series/history_class/history07 (originally published on Taiwan News, no. 101, October, 2003).

Shiung Huang (1937–present), few days after his attempted assassination of Chiang Ching-kuo (蔣經國), the former president of the Republic of China.

In New York, Peter was also one of the overseas Taiwanese students living in the Cold War United States, on April 24 of 1970.⁵⁶² For the assassination mission, he self-identified that it was hugely motivated by people’s liberation movements during the 1960s while studying abroad in the United States.⁵⁶³ According to Peter,

“By the time Taiwan should be considered as part of the Third World, and this is how I approach the overseas Taiwanese independence movement. As compared to the global liberation movement in the 1960s, Taiwan was in an extra-stable condition under martial law and the authoritarian ruled by Chiang’s Chinese Nationalist regime. For example, the Nationalist China in Taiwan supported the authoritarian government of South Vietnam, maintained the military aircrafts for the US Air Force, and even built up an entertainment quarter in Taiwan for the American soldiers who participated in Vietnam War.⁵⁶⁴ As a

⁵⁶² On Peter Huang’s later human right activism, see Yu-Jie Chen, “Isolated but not oblivious: Taiwan’s acceptance of the two major human rights covenants,” *Taiwan and International Human Rights: A Story of Transformation* (2019): 207-225.

⁵⁶³ The scholarship on the 1970 assassination, see “zhong jian li shi ji yi: “4.24 ci jiang shi jian yu tai wan” zuo tan hui ji shi.” Jia-Jun Kao (Rebuilding Taiwan's Historical Memory: “4.24 Incident” and Taiwan Symposium Record).” tai wan shi liao yan jiu (Taiwan Archives Research), 2000, (accessed March 1, 2023), http://www.twcenter.org.tw/thematic_series/history_class/history06; Yi-shen Chen, “1970 nian ci jiang an - yi wai jiao bu dang an wei zhu de yan jiu (The 1970 Assassination Attempt on Chiang Ching-kuo: A Study based on the Ministry of Foreign Affairs Archives),” *Zhan hou dang an yu li shi yan jiu: di jiu jie zhong hua min guo shi zhuan ti lun wen ji (Archives and Historical Research: Collected Papers of the 9th Conference on the Postwar History of the Republic of China.)*, Shiang-yu Huang (ed.) (Taipei: Academia Historica, 2008), 1073-1093; Chia-Chun Kao, “Hai wai tai du yu guo min dang zheng fu de dui kang - yi 1970 nian ci jiang shi jian wei zhong xin de tao lun (Overseas Taiwan Independence and the Confrontation with the Nationalist Government - A Discussion Centered on the 1970 Chiang Ching-kuo Assassination Attempt),” Ph.D. diss., National Normal University, 2017; Peter Wen-Hsiung Huang, “Si er si ci jiang shi jian de hui gu yu fan si (Looking Back and Reflecting on the 4.24 Assassination Attempt on Chiang Ching-Kuo).”

⁵⁶⁴ The similar “entertainment quarter” or “amusement area” for the U.S. Army in postwar East and Southeast Asia could be easily spotted within the “first-chain island” of defense for U.S. such as the islands of Japan (especially Okinawa), the former South Vietnam, and South Korea. An intersectional approach to the politics of gender, sexuality, race, and class in the U.S. military empire in Japan and South Korea see Maria Hohn and Seungsook Moon, eds., *Over there: Living with the US military empire from World War Two to the present*, (Dunham: Duke

Taiwanese student who had at least certain of awareness, it was basically impossible not to notice that dramatic contrast between Taiwan and other part of the world.”⁵⁶⁵

As historians of Taiwan have mostly agreed, this 1970 assassination attempt were absolutely dramatic and symbolic, but the tremendous support by the overseas Taiwanese students and young professionals (布衣菁英) was really getting on the nerves of both the American and the Nationalist Chinese governments,⁵⁶⁶ including the engagement of LIN Shou-Yin/Christine Yang and her husband. The overseas radical Taiwanese had been surveilled by the FBI agents because the U.S. government did not want any possible political chaos to happen in

University Press, 2010). The critical reviews on the neglected concerns about the (post-) wartime the case of Okinawa and postwar Japan see Masamichi S. Inoue, *Okinawa and the US military: Identity making in the age of globalization* (Columbia University Press, 2007); Steve Rabson, “Henoko and the U.S. military: A history of dependence and resistance,” *The Asia-Pacific Journal* 10, issue 4, no.2 (2012): 1-16; Shunya Yoshimi and David Buist, “‘America’ as desire and violence: Americanization in postwar Japan and Asia during the Cold War,” *Inter-Asia Cultural Studies* 4, no. 3 (2003): 433-450. The controversy over South Korea see Elisabeth Schober, “Itaewon’s suspense: masculinities, place-making and the US Armed Forces in a Seoul entertainment district,” *Social Anthropology/Anthropologie Sociale* 22, no. 1 (2014): 36-51. The examination of the post-colonial situation of the Philippines see Leopold M. Moselina, “Olongapo’s Rest and Recreation Industry: A Sociological Analysis of Institutionalized Prostitution—With Implications for a Grassroots-Oriented Sociology,” *Philippine Sociological Review* 27, no. 3 (1979): 181-193; Wesley Attewell, “The lifelines of empire: Logistics as infrastructural power in occupied South Vietnam,” *American Quarterly* 72, no. 4 (2020): 909-935.

⁵⁶⁵ Translated from Peter Wen-Hsiung Huang, 2003. Also see Peter Wen-Hsiung Huang, “Speech by Tsai Jui-Yueh at the ‘Assassination of Chiang Kai-shek 50th Anniversary Commemorative Ceremony’ held before the International Dance Festival (Speech for the ‘50th Anniversary Commemoration of the Chiang Ching-kuo Assassination Attempt’ Before the Tsai Ray-yue International Dance Festival).” April 24, 2021, <https://tmantu.wordpress.com/2021/04/24/刺蔣五十周年民族誌/>. As a result, Peter contextualizes their assassination attempt in the global movement during the 1960s. “Sometimes the people in Taiwan they praised my courage, but to be honest, if you know what happened in the 60s, what I have seen was people across countries all stand up to fight, what we have done, it wasn’t that unique. When Peter Huang and t-s Zheng were sent to the Tombs detention center in New York City with the charges of attempted murder and conspiracy, Peter Huang recalled that he was being taken good care by the staff because they sympathized with his political vision; and when he was in the jail, he was with a group of political prisoners-- antiwar, Black Panther Party, and Young Lord’s activists— they were having reading groups discussing critical topics on current politics, history, and human rights in the cells.

⁵⁶⁶ After Peter Huang and another mission partner Tzu-tsai Zheng (鄭自財) got arrest, the overseas Taiwanese community immediately gathered a huge amount of money for the trials (some activists said it was \$14,000 U.S. but some others said it should be between 22-20K US dollars), see Kao, 2017, and Yu-Chi Chen, “*Strategy of the KMT government on Taiwan independence movement in the United States (1961-1972)*,” Master’s thesis, Taipei: National Chengchi University, 2011.

Taiwan during the 1960s and the 70s.⁵⁶⁷ The young overseas Taiwanese were donating money and protesting on the street; a member even took out a mortgage loan to show support. But it was not just about the money. The support symbolized the solidarity of overseas students and the diaspora from Taiwan who identified as Taiwanese, as a collective questioning, “How would you tolerate the White terror caused by Chiang’s long-term authoritarian rule in Taiwan, as the ‘Free China’ of the democratic alliance?”⁵⁶⁸

LIN Shou-Yin/Christine Yang engaged with the state-wide movement with her pen. As we mentioned earlier, she has a pen name “Yu-Ting” to publish articles in the *Taiwan Tribune*, the first overseas Taiwanese newspaper. The *Taiwan Tribune* was established in 1981, in Long Island, New York. In 1989, the paper moved to Los Angeles and then to San Diego in 1999 until it closed in 2011. Due to the lack of freedom of speech during the imposition of martial law in Taiwan, the *Taiwan Tribune*’s goal was to create a newspaper that served overseas Taiwanese communities and highlighted its positionality with a revolutionary vision towards Taiwan independence. To create a Taiwanese-owned newspaper was also a response to both the attacks from Nationalist and Communist Chinas. According to one of the *Taiwan Tribune*’s publishers, Tsung-Chan Yang (楊宗昌, 1936–), “we have promoted Taiwanese independence for over 25 years, and now the progress of our movement is slowed down because that the Communist China accused us to be the slaves of the US imperialism and the Nationalist China defames us by slandering the Taiwanese independence activists are the dogs of Japanese empire.”⁵⁶⁹

⁵⁶⁷ Hsiao-ting Lin, *The Chiang Ching-kuo Era: The Republic of China on Taiwan in the Cold War* (Taipei: Walkers Cultural Enterprise, 2021).

⁵⁶⁸ Translated from Peter Wen-Hsiung Huang, 2021.

⁵⁶⁹ Quote from “The History of Taiwan Tribune,” World United Formosans for Independence, <https://www.wufi.org.tw/> 《台灣公論報》歷史/口述 廖俊鑫 紀錄; See Liang Shen, “taiwan gong lun bao san shi

Throughout the years, LIN Shou-Yin/Christine Yang/Yu-Ting published several articles sharing her memories of her family and the island as well as her current observations of American life. I asked her, “Do you have any preferences while choosing story topics?” She told me that she only wrote stories that were down-to-earth. Although she understood that it was a newspaper promoting a radical political agenda, she also wanted to make the content more attractive—”Yes, Taiwanese independence is very important, we need those political reports in our newspaper, but we also need some cute little essays to balance the contents. That is my intention and reason.” I am deeply moved by LIN Shou-Yin/Christine Yang/Yu-Ting’s thoughtfulness and it also revealed an alternative way to contribute to her community and radical politics.

Conclusion: LIN Shou-Yin/Christine Yang in the Transnational Professional Movement and Transnational Taiwanese Independence Movement—Rethinking the Brain-Drian Crisis in the Postwar Era

The Cold War situation shaped the highest non-return rate of students from Taiwan in the 1960s and 1970s. For many scholars and governmental officials in education and foreign policy, more than 80 percent of youth from Taiwan decided to stay in the United States, which caused the critical brain drain for the Chinese regime on the island of Taiwan.⁵⁷⁰ As the existing scholarship has demonstrated, the Cold War stirred up the international student wave from Asia to America. Among the 141 geographical areas in 1959–1960, excluding Canadian students, Taiwan had the highest number of students coming to the United States via educational exchange

zhou nian ji nian zuo tan hui ji shi (Record of the 30th Anniversary of Taiwan Tribune Symposium),” *Taiwan Historica Materials Studies*, no. 40 (2012): 130-150.

⁵⁷⁰ Shirley L. Chang, “Causes of Brain Drain and Solutions: The Taiwan Experience,” *Studies in Comparative International Development* 27 (1992): 27–43.

programs.⁵⁷¹ The The next five largest areas also belonged to the sub-categories of Far East and Near East, as defined by US officials.⁵⁷² In the 1960s, although 21,248 students left Taiwan for advanced study in the United States, only 1,172 returned to Taiwan when they completed the programs (Chang 1992:28). According to a government report published in 1981, the average non-return rate during 1960s–1970s reached 88 percent.⁵⁷³

Both LIN Shou-Yin and Chun-Mei Chang pursued graduate education in microbiology in the United States after temporarily working at the NAMRU-2 laboratory for about twenty-four to thirty months. The stories of LIN Shou-Yin and Chun-Mei Chang, as young Asian women leaving for the American dream, are embedded in the period of concern and debate over the brain drain crisis in 1960s Asian countries, especially in Taiwan. According to American foreign policy makers and scholars, students from Taiwan had the highest non-return rate of all the

⁵⁷¹ Historians and social scientists have articulated that the U.S. cultural and educational programs around the world as an imperialist expansion. On the pensionado program and Filipino students in the United States, see Kimberly Alidio, “Between Civilizing Mission and Ethnic Assimilation: Racial Discourse, U.S. Colonial Education and Filipino Ethnicity, 1901-1946” (Ph.D. diss., University of Michigan, 2001), Chapter. 3; Emily Lawsin, “Pensionados, Paisanos, and Pinoys: An Analysis of the Filipino Student Bulletin, 1922-1939,” *Filipino American National Historical Society Journal* 4 (1996): 33-33P, 50-50G; Noel V. Teodoro, “Pensionados and Workers: The Filipinos in the United States, 1903-1956,” *Asian and Pacific Migration Journal* 8, no. 1-2 (1999): 157-78. For a period sociological report, see Leopoldo T. Ruiz, “Filipino Students in the United States” (Master's thesis, Columbia University, 1924). On the Early-20th century U.S.-China educational exchange, see Hongshan Li, *U.S.-China Educational Exchange: State, Society, and Intercultural Relations, 1905-1950* (New Brunswick: Rutgers University Press, 2007); Edwin Clausen, “The Eagle's Shadow: Chinese Nationalism and American Educational Influence, 1900-1927,” *Asian Profile* 16, no. 5 (1988): 413-28; and also Edwin Clausen, “Nationalism and Political Challenge: Chinese Students, American Education and the End of an Era,” *Asian Profile* 16, no. 5 (1988): 429-440; Yung-Chen Chiang, “Chinese Students in America in the Early Twentieth-Century: Preliminary Reflections on a Research Topic,” *Chinese Studies in History* 36, no. 3 (2003): 38-62; Yung-chen Chiang, “Chinese Students Educated in the United States and the Emergence of Chinese Orientalism in the Early Twentieth Century,” *Taiwan Journal of East Asian Studies* 1, no. 2 (2004): 37-76. On students of Japanese descent, see Gary Okihiro, *Storied Lives: Japa Students and World War II* (Seattle: University of Washington, 1999); Allan W. Austin, *From Convent Campus: Japanese American Students and World War II* (Champaign: University of Illinois Press, 2004). For a recent textbook overview, see Teresa Brawner Bevis and Christopher J. Lucas, *International Students in American Colleges and Universities: A History* (New York: Palgrave Macmillan, 2007). Walter Johnson and Francis J. Colligan, *The Fulbright Program: A History* (Chicago: University of Chicago Press).

⁵⁷² It was Taiwan, Hong Kong, India, Iran, Korea, Japan, and Philippines.

⁵⁷³ Shun Yao, *A study on the Chinese student abroad, 1960-1979* (Taipei: National Youth Commission, Executive Yuan, 1981).

countries in the 1960s. However, the analysis of this phenomenon at that time mostly relied on statistical data or personal observations of American visitors to Taiwan.⁵⁷⁴

Throughout this chapter, methodologically I focused on local Taiwanese female technicians' life history and their experiences encountering NAMRU-2 to study the challenges that exist in the grand narrative of non-returned Asian youth and to examine the resulting quantitative data and reactions of governmental authorities. The personal is always political, and LIN Shou-Yin's transnational trajectory represents a marginalized voice from below that was not captured in the 1960s governmental quantitative data. An alternative interpretation arises through her lifelong involvement, from observing her father's work at a global health facility focused on malaria control to her employment at NAMRU-2, and subsequently participating in overseas Taiwanese advocacy and early forms of everyday resistance. This interpretation diverges from the authorities' concerns regarding brain drain or national security crises, shedding light on the motivations of young individuals from developing nations who come to America and choose not to return.

From the transnational trajectory of LIN Shou-Yin, we have seen the ways in which the NAMRU-2 became a steppingstone for young Taiwanese technicians to leave the island. Originally, the global health programs aimed at training local people in Taiwan to be professionals to build the new China in Taiwan but they unintentionally created a pipeline for people to escape the authoritarian regime and further build the Taiwanese identity in the United States. Influenced by the US civil rights movement, LIN Shou-Yin, her activist community, and

⁵⁷⁴ See Marion H. Groves, "Contributions to development by Asians who have studied Abroad," *International Educational and Cultural Exchange*, 3 (1965): 13-15.. The brain drain crisis—especially on the foreign medical graduates in the Cold War America see Alam, 2020.

the growing overseas Taiwanese independence movement hugely influenced the later democratization of Taiwan from the other continent. Her lived experience also speaks to the notion of trinational citizenship and transnational subjectivities, which emphasizes immigrants' various located senses are linked to both their sending and receiving countries. Further, many of the Taiwanese students in the United States were officially banned from returning to Taiwan because of their involvement in the independence movement. LIN Shou-Yin told me during our interview that even though neither her nor her husband were on this governmental list, her husband did receive an unexpected visit from police officers at his house the morning after he reentered Taiwan's border in 1978.

Therefore, how could we re-engage with brain drain issues after reading the life history of LIN Shou-Yin? How do we calculate the loss and gain when it comes to transnational migration? The most discussed factor before the year 2000 surrounded the economy. Compared with the situation in Cold War Taiwan, the early explanation attributes the non-return students to the higher income and prosperous job market in the United States. More recently, since the democratization of Taiwan, the oppressive political environment during martial law has gained more recognition and now incorporated into the accounts of many overseas Taiwanese while making their migration decision.

From a transnational perspective, Taiwan's brain drain crisis was more of a concern for Nationalist Chinese government than Taiwan. Moreover, if we consider the contribution of the overseas Taiwanese radicals to Taiwan's democratization, their leaving actually had a positive impact on the island. The brain drain crisis framed by the nation (Nationalist China) as the result of selfish Taiwanese youth and their individualist decisions, completely differed from the lived experiences of LIN Shou-Yin and other overseas Taiwanese radicals, many of them were not

allowed to return, anyway. When we interpret the high non-return rate, we might also consider that many could actually not return. The Cold War created the possibility and desire for the non-return young people from Taiwan to stay in the United States after completing their education or training abroad in several ways. Influenced by both the domestic civil rights movement and Cold War concerns, the 1965 Immigration and Nationality Act institutionally created two categories that benefited young professionals and their families from Taiwan to apply for US permanent residency.⁵⁷⁵

⁵⁷⁵ Chien-Juh Gu, 20.

EPILOGUE

An Unrecognized Cold War Construct: South-South Global Health and the Ethnic Movement Among Taiwanese Med Diasporas in the U.S.

Global Health as Resistance

As examined in the previous chapters, this dissertation illuminates the marginalized local actors representing Taiwan in relation to layers of power asymmetries. This island served as a Sino-US global health laboratory, while locals' heterogeneous experiences are sometimes ignored in history. Certainly, global health in postwar Taiwan was a postcolonial construct; however, it was not all that. A postcolonial construction lays the foundation for an alternative to global health unintentionally. In recent years, scholars in critical global health studies have agreed that the Euro-American gaze lies at the core of academic global health.⁵⁷⁶ In the following section, I will explore the free clinic programs of the Northern American Taiwanese Medical Association (NATMA) in Latin America and the Caribbean. NATMA's free clinic programs particularly focus on its long-term connection to the ethnic radical movements of overseas Taiwanese and Taiwanese Americans since the 1960s.

It began with only 20 members on April 16, 1984, but today NATMA has grown to have more than a thousand members across 21 chapters.⁵⁷⁷ Between 1950 and 1970, most NATMA members came to the U.S. via the educational pipeline between the United States and

⁵⁷⁶ See Frank Huisman and Nancy Tomes, "A World South-Side Up?: Global Health and the Provincializing of Europe," *European Journal for the History of Medicine and Health* 78, no. 1 (2021): 195-212.

⁵⁷⁷ Current 21 chapters include Southern California, Northern California, Baltimore, Atlanta, St. Louis, Greater New York Chapter, Greater Philadelphia, Cleveland, Chicago, Denver, Hawaii, New England, Washington D.C., Kansas, and Taiwan Chapter. See NATMA website: <https://www.natma.org/natma-membership-application/>; for more information see Tzu-Shong Yang, "Huishou naduan jianxin yapo de suiyue (Looking Back the Difficult Time)," in *Two Decades of NATMA*, NATMA (ed.), 17-19 (Topeka: North American Taiwanese Medical Association, 2004), 17.

(Nationalist) China. Since the 1960s, Taiwanese radicals in the United States, Japan, and Europe have launched non-violent and violent protests against Nationalist Chinese rule.⁵⁷⁸ People who shared values were not the only factor that led to the rise of organized overseas Taiwanese radicals, according to Wendy Cheng, the associations were facilitated by a “tightly connected institutional network of sociality—including lasting Taiwanese school ties and U.S. university-based contexts.”⁵⁷⁹ However, the Sino-American educational pipeline was served for the Cold War equilibrium, instead of encouraging the heat of Taiwanese student activism. In this regard, I argue that NATMA was an unintended Cold War construct.

In this epilogue section, we will revisit how overseas Taiwanese and Taiwanese American radicals see and practice global health. In contrast to the earlier global health partnership arranged by the imperialist Cold War concerns of the United States and Nationalist China's Sinicization of Taiwan, global health becomes an arena of collective embarrassment for NATMA, which represents the community of Taiwanese medical diasporas. Taiwanese radicals overseas, participate in the Taiwanese independence ethnic movement by engaging in the

⁵⁷⁸The history of overseas Taiwanese and Taiwanese American radicals, on student activist networks, see Wendy Cheng, “‘THIS CONTRADICTION BUT FANTASTIC THING’ Student Networks and Political Activism in Cold War Taiwanese/America,” *Journal of Asian American Studies*, 20, No. 2 (2017): 161-191, and “The Taiwan Revolutionary Party and Sinophone Political Praxis in New York, 1970-1986,” *Amerasia Journal* 49, no.2, special issue on Asian American activism co-edited by Diane Fujino and Robyn Rodriguez, (2019): 173-187. Meiling T. Wang, *The Dust That Never Settles: The Taiwan Independence Campaign and U.S.-China Relations* (Lanham, Md.: University Press of America, 1999); Morgan Chang, “Witnessing the Kaohsiung Incident—Selected Tape Recordings of Voice of Taiwan,” in *A Borrowed Voice: Taiwan Human Rights through International Networks, 1960–1980*, ed. Linda Gail Arrigo and Lynn Miles [Wo de Shengyin iiegei ni: Taiwanren quansu qiu yu guo ji lianluo wang 1960–1980] (Taipei: Social Empowerment Alliance, 2008), 337-45; Catherine Kai-Ping Lin, “Taiwan’s Overseas Opposition Movement and Grassroots Diplomacy in the United States: the case of the Formosa Association for Public Affairs,” *Journal of Contemporary China* 15, issue 46 (2006): 133-159; Linda Gail Arrigo, “Patterns of Personal and Political Life Among Taiwanese Americans,” submitted to *Taiwan Inquiry, a Journal of the North American Taiwanese Professors’ Association*, 2016, and an earlier version was presented at the Asian-American Literature Conference May 7, 2005, Chinese College of Culture, Taipei, Taiwan. An introductory overview on the ethnic group of Taiwanese American, see Franklin Ng, 1998; on Taiwanese American family and transnationality, see Maria W. L. Chee, *Taiwanese American Transnational Families: Women and Kin Work* (New York: Routledge, 2005).

⁵⁷⁹ Cheng, 2017, 163.

establishment of free clinics. As a result of their particular relationship to postcolonial forces--the Sino-American collaboration during the Cold War--NATMA's global health initiative is therefore more than just an exporting of Western biomedicine. Rather, it is a collective challenge to the perfect combination of U.S. modernization and nation-building by the Nationalist Chinese. NATMA's Taiwanese migrant health practitioners have been involved in global health since 2003 by building free clinics throughout Latin America and the Caribbean. These clinics are located in Panama, Guatemala, Nicaragua, Grenada, Belize, Haiti, Costa Rica, Honduras, and the Dominican Republic. As part of South-South collaboration, the Taiwanese medical diaspora in the US is envisioning establishing bonds with Latinx/o communities in Central America. The goal is also to achieve global health equity. In the description provided by NATMA, this image is a representation of the overseas Taiwanese healthcare providers who provide care for people in other countries. As most of Taiwan's alliances are in Latin America, the flag and logo of this program are in both English and Spanish.



Figure 7.1: The Flag of NATMA International Medical Mission (In NATMA 2005 Year Book).

Table 7.1 shows that most of NATMA's 23 global health programs were implemented during the pro-independence government, which was before 2008 and after 2016.⁵⁸⁰ More recently, the trajectory has extended to Myanmar and Cambodia in Southeast Asia. The number of Taiwan's allies in Latin America and the Caribbean has dropped to only seven by April 2023.⁵⁸¹ NATMA chose only countries with diplomatic ties to Taiwan rather than reacting to specific disease outbreaks, despite the fact that most NATMA members have already become US citizens. Their transnational citizenship was evident in the NATMA global health missions.

Table 7-1: NATMA's International Health Mission (designed by author).

NATMA'S INTERNATIONAL HEALTH MISSION	
YEAR	Country
2003	Grenada
2005	Costa Rica
2006	Panama
2007	Guatemala, Panama
2008	Nicaragua, Haiti
2009	Haiti, Dominica Republic
2011	Berlize
2012	Guatemala, Berlize
2013	Dominica Republic
2014	Myanmar
2015	Guatemala
2017	Myanmar, Guatemala
2018	Honduras, Paraguay, Cambodia
2019	Guatemala, Honduras, Cambodia

⁵⁸⁰ North American Taiwanese Medical Association--10 years in Medical Missions to the World, YouTube, <https://www.youtube.com/watch?v=np-tYAZngpc>

⁵⁸¹ Michael Martina and Douglas Higginbotham." Taiwan president starts sensitive U.S. stopover; China warns against meetings." *Reuter*, March 29, 2023, <https://www.reuters.com/world/asia-pacific/china-threatens-response-if-us-house-speaker-meets-taiwan-president-2023-03-29/>; "Taiwan's President Begins Trip to Central America Amid Dire Warnings from China." *Voice of America News*, March 29, 2023, <https://www.voanews.com/a/taiwan-s-president-begins-trip-to-central-america-amid-dire-warnings-from-china/7026690.html>

Why Latin America and the Caribbean?

The global health program led by NATMA is different from the U.S.-led campaign experienced by Taiwanese emigrants during the postwar years. For some people who support Taiwan's future by working with big countries, they encourage NATMA to prioritize relations with global superpowers over small Latin American nations.⁵⁸² The NATMA has also faced difficulties in launching free clinics in a country with no official ties. Due to its exclusion from the UN and WHO in the 1970s, Taiwan is no longer able to participate in formal global health affairs such as the United Nations Office for South-South Cooperation (UNOSSC), established in 1974 and hosted by the UNDP.⁵⁸³ As a program emphasizing decolonization work, Taiwan's exclusion from UNOSSC also symbolizes NATMA's struggle to earn the support of other Global South nations for Taiwan's self-determination movement. In addition, as one of the rising global superpowers, China claims Taiwan is part of its territory, which makes it difficult for Taiwan to join the conversation because China has played such a leading role in building South-South solidarity.

NATMA's South-South global health partnership is thus unique. In contrast to the “White gaze” or Global China’s global health agenda, this alternative global health version designed by Taiwanese and Taiwanese Americans is a way of resisting the post-Cold War awkwardness experienced by each Taiwanese individually and collectively.⁵⁸⁴ My focus in this epilogue is to

⁵⁸² Cao Changqing, a Chinese writer who left PRC in 1988 due to his different political values from PRC. The fact that he supports Taiwanese and Xinjiang independence while also being a right-wing supporter (in U.S. domestic politics) creates a conflicting political identity for him. Mr. Cao gave a talk on 2016 NATMA annual meeting, entitled “Physicians, Save the Country and the Future of Taiwan.”

⁵⁸³ Nauta, 2022.

⁵⁸⁴For discussion on Global China see Ching Kwan Lee, “Global China at 20: Why, How and So What?” *The China Quarterly* 250 (2022): 313–31, and her manuscript on *Hong Kong: Global China's Restive Frontier* (Cambridge University Press, 2022), and also *The Specter of Global China: Politics, Labor and Foreign Investment in Africa* (Chicago: University of Chicago Press, 2017). For more information on race, ethnicity, racism, and China, see Ian Law, *Red Racisms: Racism in Communist and Post-Communist Contexts* (United Kingdom: Palgrave Macmillan, 2012); Gerald Roche and James Leibold, “State Racism and Surveillance in Xinjiang (People's Republic of

highlight NATMA's free clinic program, which has operated for more than 10 years. The idea for heading South originated from Dr. Jen Chin Wang (王政卿, 1932-2021), the 9th NATMA President. As a result of discussion in NATMA's New York Chapter, NATMA created a special committee called "NATMA International Medical Mission."⁵⁸⁵

In this South-South global health collaboration, a new dynamic is created for global health between nations and communities. Additionally, it is shaped by the postcolonial struggles these small sovereignties have faced in terms of development, healthcare, diplomacy, and history. From December 10th to 17th, 2003, the first free clinic project landed on Grenada.⁵⁸⁶ Led by Dr. Jen Chin Wang and Dr. Han Chiang (江漢塗), NATMA practitioners divided into three groups visiting Grenada: dental health professionals, family medicine practitioners, and specialized practitioners. The dentists remained in St. George City; the family medicine dispatch split into two; one was transferred to St. Andrew Medical Station in Grenville, and the other to

China)," *The Political Quarterly* 93, no. 3 (2022): 442-450; Po-Yi Hung, "Interlacing China and Taiwan: Tea Production, Chinese-Language Education and the Territorial Politics of Re-Sinicization in the Northern Borderlands of Thailand," *The China Quarterly* 250 (2022): 417-39. The scholarship on decolonizing global health, see introduction, and Büyüm, Ali Murad, Cordelia Kenney, Andrea Koris, Laura Mkumba, and Yadurshini Raveendran. "Decolonising global health: if not now, when?," *BMJ Global Health* 5, no. 8 (2020): e003394; Jessica Horn, "Decolonising emotional well-being and mental health in development: African feminist innovations," *Gender & Development* 28, no. 1 (2020): 85-98; Michael Kunnuji, Yusra Ribhi Shawar, Rachel Neill, Malvikha Manoj, and Jeremy Shiffman, "Why 'elevating country voices' is not decolonizing global health: A frame analysis of in-depth interviews," *PLOS Global Public Health* 3, no. 2 (2023): e0001365.; on decolonization and development, see Robtel Neajai Pailey, "De-centring the 'white gaze' of development," *Development and Change* 51, no. 3 (2020): 729-745; Kamna Patel, "Race and a decolonial turn in development studies," *Third World Quarterly* 41, no. 9 (2020): 1463-1475; Arda Bilgen, Aftab Nasir, and Julia Schöneberg, "Why positionalities matter: reflections on power, hierarchy, and knowledges in "development" research," *Canadian Journal of Development Studies/Revue canadienne d'études du développement* 42, no. 4 (2021): 519-536. The discussion on critical global health see later section in this epilogue.

⁵⁸⁵ Jen Chin Wang, "Beimeizhou taiwanren yishi xiehui (2002-2003) huigu ji zhanwang (Review and Future of NATMA, 2002-2003)," in *The History of NATMA: Two Decades*, pp.49-50, 49.

⁵⁸⁶ "First NATMA International Medical Mission: Grenada, 12/10-12/17/2003," the photos and documents were from Dr. Jen Chin Wang's collection. Archives preserved In First and Famous Folder, Taiwanese American Archive, released on October 8, 2018, <https://taiwaneseamericanhistory.org/blog/379-first-international-medical-mission/>

St. Patrick Medical Station in Sauteurs. A specialized medical group, working with local practitioners at St. George General Hospital, remained in the capital.

This South-South global health collaboration forges new dynamic for global health between nations and communities, furthermore, it is also shaped by the postcolonial struggles these small sovereignties have been facing in relation to development, healthcare, diplomacy, as well as history. From December 10th to 17th, 2003, the first free clinic project landed in Grenada. Led by Dr. Jen Chin Wang and Dr. Han Chiang (江漢塗), Ten NATMA practitioners went to Grenada, dividing into three groups: dental Health, family medicine, and specialized medicine. Two dentists stayed in St. George City, the family medicine split into two dispatches, one went to St. Andrew Medical Station at Grenville, and the other joined St. Patrick Medical Station at Sauteurs. The specialized medical group stayed at the capital, working with local practitioners at St. George General Hospital.⁵⁸⁷

⁵⁸⁷ See footnote 13, and NATMA. “NATMA Press Release 03/10/2015.” <https://www.natma.org/press-release/>; Jen Chin Wang and Han Chiang. “NATMA’s First Free Clinic Mission to Grenada [北美洲台灣人醫師協會國際醫療義診團第一次到 Grenada 義診記事],” published on March 2019, NATMA Organization Website, <https://www.natma.org/wp-content/uploads/2019/03/Grenadapdf.pdf>; the situation of St. George General Hospital during early-2000, see Paul Greaves. “A dose of political medicine: Grenada.” *Student BMJ* 10 (2002); A western view of this hospital can be found in Pan American Health Organization. “Case Studies in Grenada and Saint Lucia,” as part of the project on Caribbean health Services Resilient to Impact of Emergencies and Disasters, funded by the European Commission Humanitarian Aid and Civil Protection, November 28, 2014. Pan American Health Organization.

Expanding and Diversifying Global Health: A Case Study of NATMA's Free Clinics in Honduras

NATMA's global health team has continued to grow and diversify since a trip to Guatemala in 2012. The number of NATMA participants increased to over 50, 60, and even 71 during the April 18-22, 2018 visit to Honduras, compared to only 10 on the first Grenada trip. The leader Dr. Charles C. Hsu (許宗邦) described the diverse background of NATMA team members during the 2018 Honduras visit:

“Besides Ukrainians, Iran, Canadians, Thais, the Philippines... we've also got white, black, and brown doctors and nurses; more surprising is that a Chinese emigrant doctor is a U.S. citizen now. He just called me yesterday, and he's been participating in NATMA's program three times already...he's just like some other Macau and Hong Kong people...they're not against Taiwan. When I asked them, do you know this mission is for Taiwanese independence? Their response is, 'It's totally fine, nothing to worry about.’”⁵⁸⁸

Additionally, many female Taiwanese partners of male NATMA practitioners served as assistants at the scene, not being health professionals themselves. It also becomes a family affair since many first-generation Taiwanese Americans now work in healthcare and gradually enroll in the programs.⁵⁸⁹ Several of them were leaders of different medical sub-groups during the 2018

⁵⁸⁸ Taiwanese American Channel, “Interview on Dr. Charles C. Hsu: NATMA International Medical Mission [許宗邦醫師專訪- NATMA 國際義診展示台美人軟實力],” YouTube, Jan 20, 2020, <https://www.youtube.com/watch?v=J4Xxt2KEIGc> translated and transcribed by author.

⁵⁸⁹ See NATMA participants' journals, Jer-yang Huang, *Nannü liangxing: Yiwei fuchanke yishi de wenji* (Los Angeles: Pacific Times Publisher, 2016), 24; Dr. Rong Song Lin (林榮松), The mission to Paraguay, 2018[NATMA 2018 巴拉圭義診記], NATMA International Medical Mission Folder, published on July 3, 2018, Taiwanese American Archives; Charles Chung-Pang Hsu, “bei mei zhoutaiwanrenyi shixie huiguo jiyi zhentuanboaguadima (NATMA's International Medical Mission in Guatemala),” in *NATMA Yearbook 2017*, North American Taiwanese Medical Association ed., 47-48 (Topeka: North American Taiwanese Medical Association, 2017); Yin-hsiung Lai, “ma ya de hu huan: ji NATMA 2007 nian gua di ma la xing (The Call of the Maya: A Record of NATMA's 2007 Trip to Guatemala),” Taiwanese American Historical Society, May, 23, 2015. <http://www.tahistory.org/>馬雅的呼喚：記 natma-2007 年瓜地馬拉行-◎桃城虎/. In 2019 NATMA annual meeting, the organization invited Dr.

Honduras trip. In most cases, local medical students volunteer at free clinics, translating Spanish-speaking patients to non-native-English-speaking Taiwanese healthcare providers. It is not unusual for Taiwanese migrant doctors from Southern California to speak and understand Spanish because they already recognize that Spanish is the key to improving communication with their Hispanic patients.⁵⁹⁰



Figure 7.2: NATMA's Free Clinics in Honduras, 2018.

NATMA travelled to Honduras twice in 2018 and 2019, working with Honduras' national agenda “Una Vida Mejor,” meaning “a better life.” To achieve the goal of a better life, the local Honduran government added several services beyond healthcare to NATMA’s free clinic, such as taco food trucks, childcare facilities, haircut service, mobile X-ray trucks for diagnosing breast cancer, and mobile dental equipment. In collaboration with local medical professionals,

Laura Changchien Parajon (張簡佳令) to be the keynote speaker, sharing her community health services for the remote communities of Nicaragua. Dr. Laura Changchien Parajon is a first-generation Taiwanese American who moved to Nicaragua, instead of practicing medicine in the U.S., serving for AMOS Health and Hope (AMOS), an old local Christian social medical organization established in 1967, see *NATMA Yearbook 2019*, 24-25.

⁵⁹⁰ See Dr. Jer-yang Huang, 2016, 24.

two surgeon teams performed surgeries such as breast cancer removal and cholecystectomy at Hospital Escuela and Hospital San Felipe. NATMA also collaborated with 8 dentists and 45 local Honduran medical students as translators.



Figure 7.3: NATMA's Free Clinics in Honduras, 2018-- Dentist Team in front of Mobile Dental Health Car.

Several previous programs had been conducted by Dr. Charles C. Hsu before leading the free clinics in Honduras. In addition to cardiology, dental care, internal health for families, gynecology, pediatrics for children, gastroenterologists, anesthesiologists, and anesthesiologists, NATMA also offered acupuncture which was introduced to the Honduran community at the time.⁵⁹¹ “For many westerners, acupuncture seems like magic, but it actually helps ease pain.”⁵⁹² Dr. Hsu said. Dr. Yong-Ru Huang (黃勇儒) who provided acupuncture services for local people shared his observation that “each patient’s condition is very different, but mostly, it is resulting from being overworked.”⁵⁹³

⁵⁹¹ Tina Hou, “North American Taiwanese Medical Mission at Honduras.” YouTube, Apr 18, 2018, <https://www.youtube.com/watch?v=sbU8buSAe6Y>

⁵⁹² Yuan-Ting Huang, “NATMA’s First Medical Mission to Honduras, 2018,” *The MOFA Quarterly* 36, no.2 (2018): 8-13.

⁵⁹³ *Ibid.*



Figure 7.4: NATMA Free Clinic in Guatemala, 2015 (Photo digitalized and posted on Taiwanese American Pen Club (台灣人筆會) on Aug 28, 2015.

Although NATMA's global health programs echo the recent discussion over global social medicine, does their practice really reaffirm a social justice-oriented health agenda that promotes the decolonization and democratization of care and knowledge flows in global health?

Unfortunately, these U.S. trained NATMA practitioners rarely mention indigenous practices or how indigenous practices are integrated into their free clinic services. NATMA members, on the other hand, advocate for decolonization and democratic reform in politics as part of their goals for free clinics and South-South partnerships.

Being Taiwanese is Radical:

NATMA's Ethnic Identity Formation as a Part of Overseas Taiwanese Political Activism

In addition to addressing healthcare and socioeconomic disparities between the U.S. and the countries they went to, some members of NATMA highlight the similar postcolonial struggle between Latin America, the Caribbean, and Taiwan in their memoirs of their global health practices in countries such as Haiti and Guatemala. For instance, Dr. Jung T. Tsai (蔡榮聰) felt a strong sense of *déjà vu* there in the history of Haiti as the first Black-determined republication since 1803 while it was internationally unrecognized for a century long which “just like the current Taiwan.”⁵⁹⁴ As compared to his admiration of Guatemala's policy on preserving indigenous languages and history, Dr. Yin-Hsiung Lai (賴寅雄) mentioned that how Nationalist China banned Taiwanese speaking *Tai-gu* since its retreat to Taiwan in the late 1940s⁵⁹⁵ Under that authoritarian climate, many physicians felt uncomfortable joining this community because the term “Taiwanese” was politically sensitive.⁵⁹⁶ Dr. Sam S. M. Chou, the first president of NATMA remembered that, “We decided to make phone calls to the people in our yearbooks, to find people who shared similar values to join. During the time of White Terror and martial law, however, some physicians were so terrified that just seeing the name of our organization included “Taiwanese,” there is no need to mention that they immediately associate NATMA with radical Taiwanese independence movements.”⁵⁹⁷

⁵⁹⁴ Jung T. Tsai, “yi zhen de hu zhao: nan wang de hai di yu duo mini jia (The Calling of Humanitarian Medical Aid: Unforgettable Haiti and Dominican Republic).” Taiwanese American Archives, January 5, 2015. <http://taiwaneseamericanhistory.org/blog/83-義診的呼召-難忘的海地與多明尼加蔡榮聰 201501/>

⁵⁹⁵ Yin-hsiung Lai, 2015.

⁵⁹⁶ NATMA (ed.), 2004; Dennis Chen, “14. Southern California Chapter/ NATMA,” Taiwanese American Archives. Dec 18, 2015. <https://taiwaneseamericanhistory.org/blog/natma-southern-california-chapter/>.

⁵⁹⁷ Shi-Ming Chou, “The Concern of the First President of NATMA,” in *Two Decades of NATMA*, NATMA (ed.) (Topeka: North American Taiwanese Medical Association, 2004), 10.

Through highlighting collective memories of oppression, NATMA made a connection between themselves and the Latin American nations. Following his work with NATMA in Haiti, Michel-Ange Ferdinand, a Haitian medical diaspora practicing in New Jersey, became the first foreign NATMA member. Dr. Ferdinand spoke at the “Support Taiwan's Participation in the WHO Symposium” event hosted by NATMA and Overseas Taiwanese for Democracy on April 21, 2018,

”I am here not only to support Taiwan’s participation in the World Health Assembly, but also in the WHO affairs. We are also here, to support the admission of Taiwan to the United Nation.... We talk about solidarity between Taiwan and Haiti.”⁵⁹⁸



Figure 7.5: Support Taiwan’s Participation in the WHO Symposium, April 21, 2018. The front line, from right to left, OCAC director Cheng-jie Huang, Dr. Alexander Swan (Myumar), Dr. Dyna Louise Pierre (Haiti), Dr. Michel- Ange Ferdinand (Haiti), Dr. Steve Lee (President of NATMA, NY Chapter), Dr. Jung-Tsung Tsai (Overseas Community Affairs Council member), Rei-jen Su (OCAC Vice Dean), Dr. Hong Tien Lai, Hsiao Hsin-cheng (Overseas Taiwanese for Democracy at New York).

⁵⁹⁸ The quote is transcribed from the video posted by Culture Center of Taipei Economic and Cultural Office (OCAC) in New York which posted on April 23, 2018, <https://www.facebook.com/watch/?v=824881944365557>

Another example occurred during the early stages of the COVID-19 pandemic. In his social media posts, Honduran Representative Giampaolo Carmelo Rizzo Alvarado advocated for Taiwan:

“Because it’s the right thing to do; because we should leave no one behind; because #TaiwanCanHelp; on behalf of Honduras, we led a group of countries to ask #WHO’s DG to invite Taiwan to participate in the next World Health Assembly and in all #COVID19 related meetings #73WHA”⁵⁹⁹

This tweet uplifted both Taiwanese society as well as overseas Taiwanese, as reported in Taiwan's news.⁶⁰⁰ As I write my epilogue chapter, unfortunately, Honduras is just breaking up with Taiwan on March 26, 2023, and establishing diplomatic relations with the PRC.⁶⁰¹

The first NATMA president was Dr. Samuel/Sam Suy-Ming Chou (周焯明, 1930–2018). After receiving the M.D. degree at National Taiwan University, Dr. Chou followed his medical school crush, Dr. Grace S.H. Wu (吳秀惠, 1931-2022), becoming a post-graduate student at the University of Wisconsin, Madison during the summer of 1959.⁶⁰² When Dr. Grace S.H. Wu obtained her M.D. degree in Taiwan in 1957, she worked as a research assistant in a biomedical

⁵⁹⁹ Giampaolo Rizzo Alvarado’s tweet on 7:49 AM, Apr 29, 2020 from Geneva, Switzerland, https://twitter.com/giampaolo_rizzo/status/1255509548409982977.

⁶⁰⁰ Some Taiwanese sociologists have incorporated this into their research. See Yu-Yueh Tsai, “WHO Xinguanbingdu yu taiwan liwai de guoji zhili (WHO, COVID-19 Virus, Taiwan, and the Exception of State Governance),” *Taiwan in a Pandemic*, Wen-Yuan Lin and Ji-Yi Team (eds.) (Taipei: Locus Publishing, 2022), chapter 7. News report in Taiwan can be found at Lu, Yi-Shuan. “You bang hong du la si da shi shi wen Tan Desai yao qiu yao qing Tai Wan can jia WHA (Video call between the Ambassador of Honduras to Taiwan and Tedros Adhanom Ghebreyesus, Director-General of the World Health Organization (WHO), requesting an invitation for Taiwan to participate in the World Health Assembly (WHA)).” *Liberty Times*, May 3, 2020.

⁶⁰¹ Helen Davidson, “Honduras says there is ‘only one China’ as it officially cuts ties with Taiwan,” *The Guardian*, 26 Mar 2023. <https://www.theguardian.com/world/2023/mar/26/honduras-says-there-is-only-one-china-as-it-officially-cuts-ties-with-taiwan>

⁶⁰² Dr. Grace Wu went in 1957 and worked as a bioscientific researcher in a lab at University of Wisconsin Madison. Dr. Wu was involved in establishing the North American Taiwanese Women Association (NATWA), which began on March 13, 1988 in California. Dr. Wu served as the second president of NATWA. NATWA’s official site see <http://www.natwa.com/>

lab during the day; at night, she conducted free clinics in a room she rented near Long-Shan Temple, an area where mostly local Taiwanese people live and work.⁶⁰³ In an event Dr. Sam Chou shared that it was he who saw Dr. Chou's post at medical school searching for volunteers, and he went to help, which led to them becoming closer. Grace S. H. Wu was one of the first female students to graduate from a medical school in Taiwan; more rarely, she received her MD from National Taiwan University, the most prestigious higher education institution in Taiwan since the Japanese Colonial period, and still so during Nationalist Chinese rule.



Figure 7.6: Dr. Grace S.H. Wu and Dr. Samuel S.M. Chou, photo taken during late 1950s in Madison (The digitalized photo shared on September 25, 2022 by Winston Chou, the first children of Dr. Wu and Dr. Chou.

They married soon after landing on Madison, December 21, 1959. In October, 1963, this couple organized the Taiwanese Association at UW-Madison (威斯康辛大學台灣同鄉會), which was one of the first public registered Taiwanese Associations in U.S. society. In 1963, as Dr. Chou's PhD was approaching, this couple discovered that both their citizenship and visas had been revoked by the Nationalist government. This was due to their active involvement in the early wave of the Taiwanese independence movement in the 1960s United States. In 1967,

⁶⁰³ *Taiwan Tribune*, November 9, 1994, on page 5. Known for its historic temple and commercial port, the Long-San Temple area was developed one of the earliest since Japanese colonization.

Cleveland offered them an opportunity in order to change their lives since their third child had just been born in this immigrant, professional, but rebellious family. They were on a government's “black list” that prevented them from returning to Taiwan until 1988 after martial law ended.⁶⁰⁴



Figure 7.7: The group photo taken during the NATMA inauguration on July 14, 1984, East Michigan University, Ypsilanti, Michigan. The digitalized photo was preserved by Wu San-lien Taiwan Archives Foundation (吳三連台灣史料基金會) on the page of Dr. Sam S.M. Chou in their Overseas Taiwanese Collection (海外台灣人專輯).

Even so, they were able to remain in the U.S. legally and continued to build overseas Taiwanese communities and engage in political demonstrations well into the 1980s. It was during the protests and community building events that Dr. Chou noticed many overseas Taiwanese were working in the health and medical fields. Thus, a preparatory meeting for

⁶⁰⁴ Suy-Ming Chou, “The Concern of the First NATMA President,” in *Two Decades of NATMA*, NATMA (ed.), (Topeka: North American Taiwanese Medical Association, 2004); In 1988, NATMA members organized as a team, returning back to Taiwan attending the annual meeting of the Taiwan Formosan Medical Association. It was the first time the Nationalist Chinese government allowed the overseas Taiwanese to come back to Taiwan as a group with Taiwanese in the title. At the Taipei Airport, journalists asked NATMA members questions about politics and so on. Tzu Shong Yang, “beimeizhou taiwanren yishi xiehui yi taiwanren tuanti mingyi huitai jishi (In Memoriam: NATMA's Return to Taiwan),” in *Two Decades of NATMA*, NATMA (ed.), (Topeka: North American Taiwanese Medical Association, 2004).

launching NATMA was held in a restaurant in Cleveland in 1983.⁶⁰⁵ Scholar Wendy Cheng's statement that "Taiwanese used their educational and personal networks to find one another and transmit information on political developments in Taiwan"⁶⁰⁶ accurately describes the establishment of NATMA.

Taiwan's transition to democracy and self-determination movement were facilitated by NATMA. Along with promoting professional development, it has also acted as a voice for democracy and human rights in Taiwan: "Physicians and health practitioners have three layers of missions: treating diseases, caring for patients, and solving the problems of society and the nation (上醫醫國, 中醫醫人, 下醫醫病)."⁶⁰⁷ NATMA has cited this old East Asian saying numerous times throughout the years.⁶⁰⁷

As a medical analogy, NATMA seeks to cure Taiwan, which has become deeply ill due to Nationalist China's authoritarian rule since 1945. NATMA pioneers were disappointed to find that many of their contemporary Taiwan healthcare providers were only interested in profiting rather than taking part in society. As a result, NATMA has documented Taiwanese healthcare professionals' resistance to Japanese colonialism and civil participation. This includes mass arrests, exiles, and executions under martial law.

NATMA frequently acknowledges the activist tradition of Taiwanese healthcare professionals in the past. In so doing, it connects NATMA's vision to their ancestors' engagement in political affairs and social movements from the colonial period to the postwar authoritarian rule in Taiwan.⁶⁰⁸ For example, to honor the civil services of Loa Ho (賴和, 1894-

⁶⁰⁵ The formal inaugural ceremony held during the 1984 Midwest Taiwanese Conference (中西部台灣人夏令營) in Michigan, see Figure 7.8.

⁶⁰⁶ Cheng, 2017, 163.

⁶⁰⁷ Jung-Tsung Tsai, "Huizhang dehua (The NATMA President's Notes)," *NATMA Yearbook*, 2009, 3.

⁶⁰⁸ The scholarly publication on how Taiwanese physicians in the 1990s became politicians and its colonial legacy see Ming-cheng M. Lo, *Doctors within Borders: Profession, Ethnicity, and Modernity in Colonial Taiwan* (Oakland:

1943), as well as other pioneering Taiwanese physicians in the 1920s and 1930s. These physicians expressed a growing Taiwanese consciousness in their services and political engagements, NATMA has established two awards named after him since 1991.⁶⁰⁹ Another practice of NATMA is telling the stories of Taiwanese physicians imprisoned on Green Island. From 1951 to 1965, Taiwanese physicians, as political prisoners, provided health care, surgery, and self-care education. They ran a health office within a political prison camp on Green Island for both prisoners and residents.⁶¹⁰ NATMA members' disappointment with the authoritarian regime is similar to that of those condemned or imprisoned during the 1950s, who were forced to deal with epidemic outbreaks, racial tensions, and class conflict under the newly arrived ruler.

University of California Press, 2002); Ya-hui Chang. *A Study of the Doctors and Taiwan Medical Humanities During Japanese-reign Period--The Examples of Three Doctors are Dr. Jiang Wei-Shui, Dr. Lai-He, and Dr. Wu Xin-Rong* (Master's thesis, Taipei Medical University, 2001); Yung-Wen Yeh, *Medical Development in Taiwan: the Relationship between Medicine and Politics* (Taipei: Hungyeh, 2006).

⁶⁰⁹ "Loa Ho Awardm" in 01. Awards Offered by T. A. Individuals and Organizations folder. Taiwanese American Archives. Oct 1, 2015, <https://taiwaneseamericanhistory.org/blog/57-賴和獎/>; more information on Loa Ho, see Pei-yin Lin, "Introduction," in *Scales of Injustice: The Complete Fiction of Loa Hô* (Stockport: Honford Star, 2018).

⁶¹⁰ The Taiwanese American Archive preserves Ms. Mei Li Lin (林美里), the first Taiwanese American to visit Dr. En-Kui Lin (林恩奎) political prisoner (her father) in Green Island/Taiwan in the 1950s. YouTube, June 29, 2016, <https://www.youtube.com/watch?v=Vp5f-1eNhqs>. The stories of Taiwanese physicians imprisoned or executed during Martial Law Taiwan in the 1950s can be found at the Preparatory office in the National Human Rights Museum of Taiwan: *Physicians as Political Victims under White Terror Taiwan: Survey and Report* (Taipei: Preparatory office in National Human Right Museum of Taiwan, 2014); and my conference paper "White Coats under White Terror: Political Prisoners, Medicine, and Healthcare in Cold War Taiwan, 1950s–1970s." Paper presented at Remembering Taiwan's Martial Law Conference. July 28, 2021, Canberra, Australia (virtual).

Reconsidering the “Marginalized”: Making Connections between Social Justice, Global History and Global Health

NATMA and other diasporic Taiwanese political activists continue to influence Taiwanese ethnic movements today. Although its legacy has been excluded and marginalized from most scholarly discourse, as Professor Wendy Cheng has stated, “they built resilient social networks and organizations that affirmed their own existence, and yielded political networks that asserted their right to choose their own identities and futures.”⁶¹¹

In addition, being Taiwanese is never a one-time decision. An ethnic formation movement of Taiwanese is still ongoing, and Taiwanese ethnicity is still forming. In the U.S. today, 194,263 people identified as Taiwanese in the latest 2016-2020 American Community Survey.⁶¹² The Pew Research Centre, a leading nonpartisan research institute in the United States, published “Key Facts” about Asian Americans in May 2021 and redefined Taiwanese as Chinese by merging their data with Chinese data in their publication, which sparked outrage among Taiwanese Americans.⁶¹³ Dr. Catherine Chou, a second-generation Taiwanese American historian, asked “why was the data we reported manipulated? Why were our stories hidden?”⁶¹⁴ One of the biggest Taiwanese American media platforms--Taiwanese American Org--published

⁶¹¹ Cheng, 2017, 182, and 185. Cheng also explains that the intersectional structural force caused the isolation of Taiwanese immigrants and Taiwanese Americans. According to Cheng, “as class-privileged migrants who were racialized as model minorities, they benefited to some degree from the status quo and consequently did not have any radical cache among other marginalized groups; and as first-generation immigrants with limited English abilities, they found it difficult to develop relationships and solidarity with non-Taiwanese.” Quoted from Cheng, 2017, 182.

⁶¹² U.S. Bureau of Immigration, Department of Commerce and Labor. Annual Reports of U.S. Census Bureau. 2016-2020 American Community Survey 5-year Estimates. <https://data.census.gov/cedsci/table?q=123DACSDT5Y2020.B02015>.

⁶¹³ Claire Wang, “Taiwanese in the U.S. insist their identity is not a ‘political choice’ — but must be a census option,” *NBC News*, Sep 25, 2021, <https://www.nbcnews.com/news/asian-america/taiwanese-us-insist-identity-not-political-choice-must-census-option-rcna2225>

⁶¹⁴ Catherine Chou, “REINSCRIBING TAIWANESE AMERICANS INTO TRANSPACIFIC HISTORY,” *Taiwan Insight*, Special Issue on Diaspora, March 2021. <https://taiwaninsight.org/2021/06/18/reinscribing-taiwanese-americans-into-transpacific-history/>

the Taiwanese American community, primarily led by organizers of Write in Taiwanese Census Campaign and Taiwanese American Citizens League (TACL). As a response, it was pointed out that postcolonial history is intertwined with transnational migration, as well as family history:⁶¹⁵ “Many first-generation Taiwanese Americans came to the United States as political refugees from persecution by the Chinese Nationalist Party in Taiwan, and many more Taiwanese Americans defend their identity from being confused with Chinese, given the ongoing threat of military invasion of Taiwan by China.”⁶¹⁶

NATMA has been actively involved in reporting Taiwanese on the U.S. Census since 1987. It encourages people who identify as Taiwanese and Taiwanese American to check “Other Asian” and write in “Taiwanese” on the U.S. Census. A Joint Committee of Taiwanese-Americans for the 1980 Census began in the late 1970s Bay Area, but was not nationalized until TACL added this campaign to their agenda on December 17, 1986. This campaign continues today and is now led by first generation Taiwanese Americans.

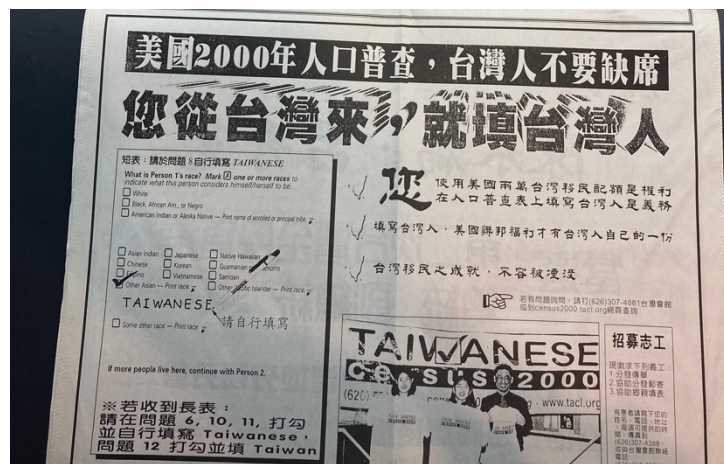


Figure 7.8: Taiwanese American Campaign for the US Census 2000 advertisement (Taiwan Tribune, March 25, 2000, page 8).

⁶¹⁵ Shi Chou, “Taiwanese American Citizens League and the 1990U.S. Census,” Taiwanese American Archives, September 30, 2016. <https://taiwaneseamericanhistory.org/blog/ourjourneys253/>

⁶¹⁶ “Response to Pew Research Reports Hiding Taiwanese Identity: “We made it count. Now tell our stories.” TaiwaneseAmerican.org, May 1st, 2021. <https://www.taiwaneseamerican.org/2021/05/pew-research-center-taiwanese-american-statement/>

As NATMA is situated within the radical Taiwanese diasporic movement throughout this epilogue, I would like to refine my opening question: Does a South-South version of global health have the potential to form a justice-oriented model of global health? It is my hope that this epilogue chapter has demonstrated that NATMA's free clinic programs in Latin America and the Caribbean are deeply rooted in their long-term engagement in the ethnic radical movement of overseas Taiwanese and Taiwanese Americans. Global health may have been born from colonial traditions but it also challenges that tradition, as many global health scholars have noted, and the Taiwanese example shows this ⁶¹⁷ Intentionality, however, does not determine the consequences for the communities receiving transactional healthcare services.

NATMA provides services and care similar to the U.S. version of the global health model regardless of their vastly different intentions. The question thus becomes: Can NATMA's south-south global health program resolve existing health inequity problems or will it ultimately exacerbate them in relation to long-standing inequalities of political power that have been ushered in with global health programs elsewhere?

⁶¹⁷ The literature on critical global health see, Vincanne Adams (ed.). *Metrics: What Counts in Global Health* (Durham: Duke University Press, 2016); Adams, 2016; João Biehl, "Theorizing Global Health," *Medicine Anthropology Theory*, 3 no. 2 (2016): 127-142; and also Raquel Baldwinson's review, "Global health wars: a rhetorical review of global health critique," *Medical Humanities* 48, no. 2 (2022): 200-210; historical investigation applying a critical global health approach, see Alexandra Widmer and Christine Winter, "Health and Medicine during and after the Pacific War: Pacific Islanders, Institutions, Infrastructure, Ingenuities," *Health and History* 23, no. 2 (2021): 1-9; Safua Akeli Amaama, "Mobilising People, Places, and Practice: Public Health Care in Samoa, 1920s to 1950s," *Health and History* 23, no. 2 (2021): 10-28; Ming-Jen Wu, "The Lives of the 'Native Medical Orderlies' in Gemo Hospital in Postwar Papua and New Guinea (1946-74)," *Health and History* 23, no. 2 (2021): 51-70, and this whole special issue on Health and Medicine during and after the Pacific War: Pacific Islanders and Medical Infrastructure. Also see, Alexandra Widmer, *Moral Figures: Making Reproduction Public in Vanuatu* (Toronto: University of Toronto Press, 2022). Case studies on critical global health, especially ethnographies; Johanna Tayloe Crane, *Scrambling for Africa: AIDS, expertise, and the rise of American global health science*. Cornell University Press, 2013); Suzanne Hindmarch and Sean Hillier, "Reimagining global health: From decolonisation to indigenization," *Global Public Health* (2022): 1-12; Charles Briggs and Clara Mantini-Briggs. *Tell Me Why My Children Died: Rabies, Indigenous Knowledge and Communicative Justice* (Durham: Duke University Press, 2016); Steven P. Black, "Portable Values, Inequities, and Techno-Optimism in Global Health Storytelling," *Journal of Linguistic Anthropology* 31, no. 1 (2021): 25-42; Joao Biehl and Adriana Petryana eds. *When people come first: critical studies in global health* (Princeton: Princeton University Press, 2013).

Both the postwar U.S. led-international health campaign in Taiwan (eg, NAMRU-2) and NATMA's free clinics in Latin America were driven by humanitarianism and political objectives. In contrast to the Sino-US collaboration in the fight against communism through global health, NATMA pursued two distinct political objectives that differed from those of NAMRU-2 and other global health assistance directed towards Free China in Taiwan. NATMA aimed to (1) elevate Taiwan's marginalized standing on the global stage and (2) foster a sense of solidarity among postcolonial nations and populations.

Taiwanese medical diasporas sometimes had to justify themselves as U.S. trained doctors due to their color in some specific scenarios in their global health practice. For instance, a urologist Dr. Luke S. Kao wrote about what happened during his service in Honduras,

“On the third working day, a patient with bladder cancer coming in the waiting room and seeing me inside, shouted to other patients “This gringo is not White”? As his turn came, I told in the examining room in broken Spanish that I was born and grew up in Taiwan. To my surprise, he replied that he knew where Taiwan is, then lifted his right thumb and said ‘Taiwan, good.’”⁶¹⁸

NATMA's free clinic projects have revealed a unique Asian-Latino/X connection which needs to be explored further in the future. Last but not least, just one year after NATMA's visit, Hurricane Ivan severely damaged Grenada's heritage preservation. Grenada's Endangered Archives Initiative was therefore launched. My mind wanders to the similar situation between Grenada and Taiwan. Working on the history of these islands continues to pose challenges,

⁶¹⁸ Luke S. Kao, M.D. “Medical Mission to Honduras.” *NATMA Yearbook* (2006): 57-58, p.58.

including environmental, social, and political challenges. Even so, the communities have invested so much time and energy in archival work as a form of civil repair. For the Taiwanese, Taiwanese American, and diaspora communities, NATMA members' detailed journals and memories writings are invaluable resources. My best wishes will be sent to all Grenadians and the Grenadian diaspora for Grenada's endangered archive project to succeed as soon as possible.

CONCLUSION

Pluralizing Postcoloniality

A shift in global health focus occurred due to the geopolitical changes and the successful elimination of trachoma in Taiwan. This resulted in a renewed effort to address trachoma in Mainland China. Medical reviews on the history of trachoma in China show that significant progress was made in the 1980s, when China's National Patriotic Health Campaign merged with the WHO's trachoma program. This collaboration supported the implementation of systematic epidemiological surveys, as well as the treatment and public health initiatives targeting specific schoolchildren and student populations affected by trachoma.⁶¹⁹ On May 18, 2015 at the 68th World Health Assembly, Bin Li, Minister of National Health and Family Planning commission of the PRC, announced that their nation has achieved the goal for trachoma elimination in 2014.⁶²⁰ Their collaboration was built upon the implementation of SAFE strategy, which wasn't phased and officially promoted by the World Health Organization (WHO) until 1993. The SAFE strategy consists of:⁶²¹

- Surgery to treat the blinding stage.
- Antibiotics (tetracycline ointment or azithromycin) to combat active infection.
- Facial cleanliness.

⁶¹⁹ Ningli Wang, Shijing Deng, and Lei Tian, "A review of trachoma history in China: research, prevention, and control," *Science China Life Sciences* 59 (2016): 541-547.

⁶²⁰ *Ibid.*, 545.

⁶²¹ Mohammadpour, et al., 2016; Lei Tian and Ning-Li Wang, "Trachoma control: the SAFE strategy," *International journal of ophthalmology* 11, no. 12 (2018): 1887-1888; and "Trachoma and the safe strategy," *Community Eye Health*. 12, no. 32 (1999):49-51.

- Environmental improvement (access to water and sanitation).

In 1996, the WHO launched the WHO Alliance for the Global Elimination of Trachoma by 2020. They did not achieve the goal to eliminate trachoma and it was also the same year the world moved into the Covid-19 era. Currently, trachoma is considered one Neglected Tropical Diseases (NTD) within the current global health discourse and a public health issue affecting 42 countries. According to WHO, it causes approximately 1.9 million people to become blind or visually impaired, primarily in Africa, Asia, and the Middle East.⁶²² The World Health Organization (WHO) continues to advocate for the implementation of SAFE strategies for trachoma elimination. In many ways, the SAFE strategy is not that dissimilar from Taiwan's postwar program.

Meanwhile, NATMA and the general civil society of Taiwan continued to try to return to WHO. Nevertheless, it has yet to succeed since Communist China insists Taiwan admits to being a part of its territory if it is to rejoin.⁶²³ The ongoing authoritarian regimes in both Communist China and Taiwan's authoritarian legacy under the Nationalists raise questions about the power structures and dynamics shaping local practices of global health initiatives. In addition to examining the symbolic dimension of Western imperialism, I have tried here to examine how

⁶²² "Trachoma," World Health Organization (Accessed January 10, 2022) <https://www.who.int/news-room/fact-sheets/detail/trachoma>.

⁶²³ Po-Han Lee and Ying-Chao Kao, "Health Apartheid during covid-19: A Decolonial Critique of Racial Politics between Taiwan and the WHO," *International Journal of Taiwan Studies* 5, no. 2(2022), 375-402; Colin Alexander, "The Recognition Imperative behind Taiwan's Public Diplomacy: A Critical Study of Taiwan's Efforts to Join the World Health Assembly," *International Journal of Taiwan Studies* 3, no. 1 (2020): 44-61.

these programs were implemented in diverse social contexts and how political regimes shaped their outcomes. Perhaps it is time to be more courageous in politicizing global health history.

Politicizing historical narratives on global health does not mean eradicating past international collaborations between professionals, bureaucrats, and researchers. To politicize is to examine the pluralizing formation of postcoloniality through the flow of knowledge, resources, and materiality, then charting the imperial powers at work. Just as the global health program is always situational, however, the imperial power structures are also situational. That is, only through the lens of marginalized actors—children, monkeys, female technicians, and Taiwan itself—can we see their unique postcolonial engagements with imperial powers throughout the health program and, specifically, the knowledge production around trachoma. As Warwick Anderson suggested, in this way we can destabilize the myth that Western knowledge is universal.⁶²⁴

I understand the awkwardness in writing the history of STM in Taiwan addressing the state or government as a Taiwanese born and raised pro-independence. Even though we have a current Tsai administration that is pro-independence, it does not change the fact that Taiwan is still in a legal container called the Republic of China. People on the island are politically polarized. Therefore, I suggest that we need to really distinguish Nationalist China from Taiwan society. We cannot avoid Nationalist China in our examination. It would weaken the analysis if we kept avoiding mentioning it or just merely label the government as Taiwan. The Nationalist Chinese regime and Taiwan both have their own history, and their relationship need to be clarified. The postwar stories about postwar Taiwan are always going to be complicated, because

⁶²⁴ Warwick Anderson, “Introduction: Postcolonial Technoscience,” *Social Studies of Science* 32, no. 5–6 (2002): 643–658.

it has always been a key spot attracting so many global public health programs and research and the political interests of many imperial powers. It helps to be more critical about our own historical practices in terms of engaging with archives, narratives, perspectives, and how to connect with to care beyond borders, with others who also historically suffered.

My dissertation offers a postcolonial critique, but also an invitation. Taiwan is marginalized not just on the mainstream stage of international politics, but Taiwan is also left out of U.S. history and Asian American history. At the moment, I hope this dissertation will stimulate alternative ways to seek international support. Telling a story of global health margins from Taiwan's perspective, is a postcolonial reminder to knowledge producers from various fields. For the U.S. historians, I invite you all to engage with Taiwan and its historical connection with the U.S. (not even that long ago), and how Taiwan along with other islands shaped and helped maintain the U.S. as a de-territorial global power throughout the 20th century.

Within Asian American studies, the Taiwanese diasporic has also been overlooked. As Wendy Zheng has amplified, "While diasporic Taiwanese in the United States were not exceptional.....as a political collectivity and as a people shaped by Cold War geopolitics and legacies of imperialism and colonialism, they have been generally overlooked in Asian American studies."⁶²⁵ Taiwan's postwar history is a U.S. history, transnational history, and also speaks to Asian American studies and critical Asia Studies.

⁶²⁵ Wendy Cheng, 2017, 195. Recent scholarship on Taiwanese American and diaspora mostly focus on their overseas revolutionary movement, see, also Wendy Cheng, "The Taiwan Revolutionary Party and Sinophone Political Praxis in New York, 1970–1986," *Amerasia Journal* 45, no. 2 (2019): 173–187. On identity formation, Bing Wang and Min Zhou. "Understanding Intraethnic Diversity: The Formation of a Taiwanese American Identity," *Journal of Chinese Overseas* 17, no. 1 (2021): 58–83. From Taiwanese (non Taiwanese American) standpoint see, Wen Liu, "From Independence to interdependence: Taiwan Independence as critique, strategy, and method toward decoloniality," *American Quarterly* 73, no. 2 (2021): 371–377; Po-Han Lee, Ya-Wen Yang, Harry Yi-Jui Wu, and Wen Liu, "'The Future of Taiwan Studies in the Post-covid World': Online Series on 'covid and

The invitation also goes in the opposite direction: Could Taiwan build solidarity with other marginalized communities in the domestic U.S. and in the Global South? Because Taiwan has an authoritarian legacy and is closely related to the U.S. government in the 1960s, it was left out of third world solidarity coalitions during the Cold War. I wonder if Taiwan can join the decolonization conversation by having Taiwanese citizens tell their stories honestly. I found an inspiring example showing the possibilities. The critical East Asia STS community we discussed in the Introduction, that interdisciplinary intellectual community has been rooted in Taiwan but has collaborated closely with other East Asian scholars, STM researchers in the U.S. and Europe since 2007. Recently, an exciting South-South dialogue with Latin American intellectuals was launched, setting an agenda for South-South epistemic exchanges.⁶²⁶ Overall, this is my postcolonial attempt to bridge historical knowledge and praxis, from a standpoint of marginalization, engaging with transnational archives and transnational scholarship of Taiwan, East Asia, and the United States.

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⁶²⁶ Leandro Rodriguez Medina, "Welcome to South-South dialogues: an introduction to a collaborative project between East Asian Science, Technology and Society, and Tapuya: Latin American Science, Technology and Society," *Tapuya: Latin American Science, Technology and Society* 2, no. 1 (2019): 15-19.

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